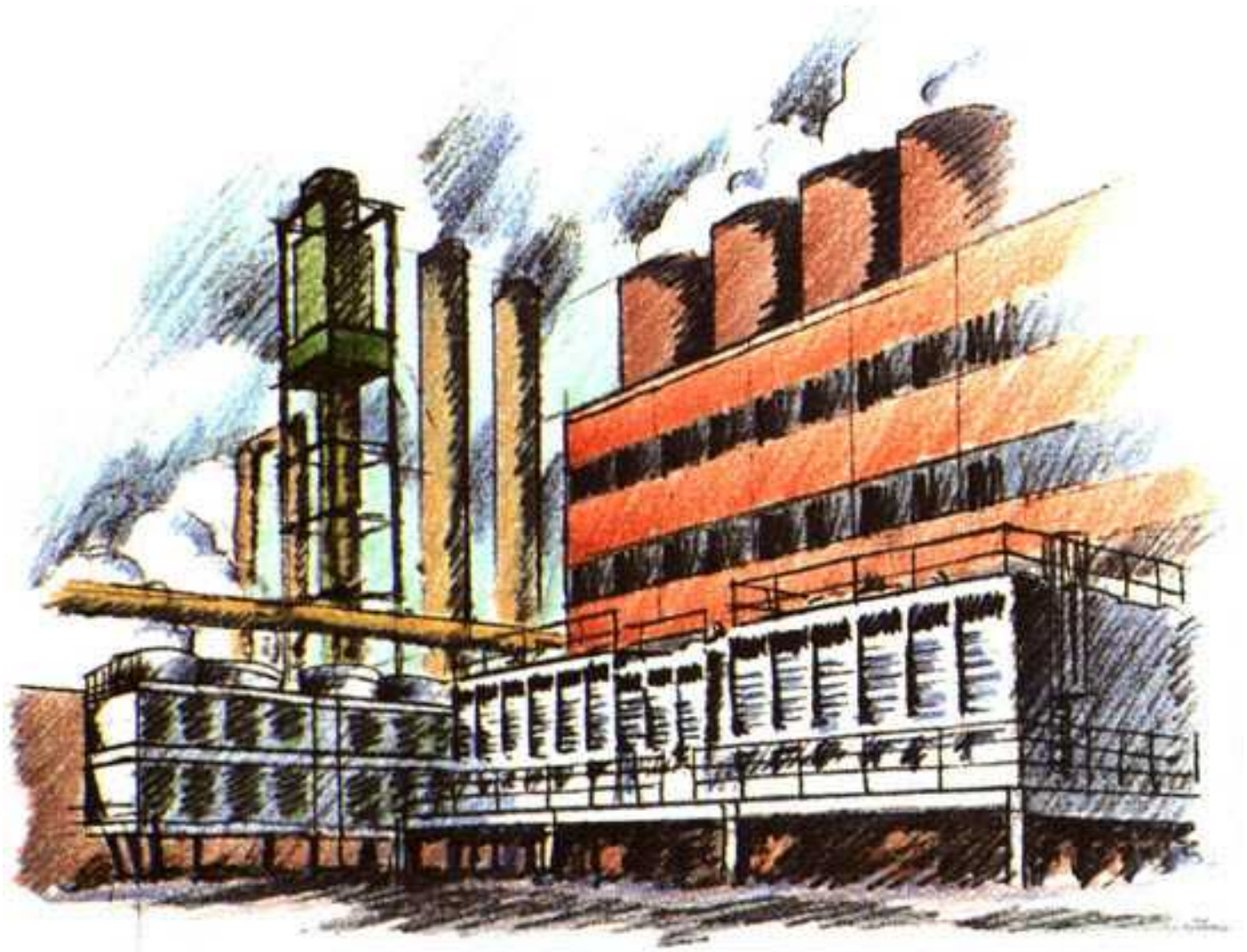


# THE KERALA FACTORIES RULES, 1957



DEPARTMENT OF FACTORIES & BOILERS  
KERALA

---

# THE KERALA FACTORIES RULES, 1957



DEPARTMENT OF FACTORIES & BOILERS  
KERALA

---



**THE KERALA FACTORIES RULES, 1957****CHAPTER I  
PRELIMINARY**

Rules	Pages
<b>1</b> Short title, extent and commencement	1
<b>2</b> Definitions	1
<b>Rule under Section 2 (ca)</b>	
<b>2A</b> Competent Person	2
Form of application for grant of certificate of competency to a person under sub-rule (1) of rule 2A	3
Form of application for grant of certificate of competency to an institution under sub-rule (2) of rule 2A	4
Form of certificate of competency issues to a person or an institution in pursuance to rule 2A made under section 2(ca) read with section	6
Schedule	7
<b>Rules under Subsection (1) (aa) of Section 6</b>	
<b>3</b> Approval of site, construction or extension of a factory	11
<b>4</b> Application for registration and grant of licence.	12
<b>5</b> Grant of licence	12
<b>6</b> Amendment of licence.	13
<b>7</b> Renewal of licence	13
<b>8</b> Transfer of licence	14
<b>9</b> Procedure on death or disability of licensee	14
<b>10</b> Issue of duplicate licence.	15
<b>11</b> Payment of fees.	15
<b>12</b> Notice of occupation.	15
<b>12A</b> Notice of change of Manager.	15
<b>12B</b> Guidelines, instructions and records.-	15
<b>12C</b> Register of factories	15
<b>12D</b> Suspension of licence	15

**CHAPTER II  
INSPECTING STAFF****Rule under Sub-Section (1) of Section (8)**

<b>13</b> Appointment of Inspectors	16
<b>Rules under section 9</b>	
<b>13A</b> Powers of Inspectors.	16

Rules	Pages
<b>Rules under sub-section (4) of section 10</b>	
<b>14</b> Duties of certifying Surgeon.	16
<b>CHAPTER III HEALTH</b>	
<b>Exemptions under sub-section (2) of section 11</b>	
<b>15</b> Cleanliness of walls and ceilings.	18
<b>Register under sub-section (1) of section 11</b>	
<b>16</b> Record of whitewashing etc	19
<b>Rules under sub-section (2) of section 12</b>	
<b>17</b> Disposal of trade wastes and effluents	19
<b>17A</b> Limits of temperature and air movement	20
<b>Rules 18 to 28 under sub-section (1) of section 15</b>	
<b>18</b> When artificial humidification not allowed	22
<b>19</b> Provision of hygrometer	22
<b>20</b> Exemption from maintenance of hygrometer	23
<b>21</b> Copy of Schedule to Rule 18 to be affixed near every hygrometer.	23
<b>22</b> Temperature to be recorded at each hygrometer	23
<b>23</b> Specifications of hygrometer	23
<b>24</b> Thermometers to be maintained in efficient order	24
<b>25</b> An inaccurate thermometer not to be used without fresh certificate	24
<b>26</b> Hygrometer not be affixed to wall, etc., unless protected by wood	24
<b>27</b> No reading to be taken within 15 minutes of renewal of water	24
<b>28</b> How to introduce steam for humidification.	24
<b>29</b> Deleted	25
<b>Rules 30 to 33 under sub-section (4) 17</b>	
<b>30</b> Lighting of interior parts.	25
<b>31</b> Prevention of glare	25
<b>32</b> Power of Chief Inspector to exempt	25
<b>33</b> omitted	25
<b>Rules 34 to 39 under sub-section 4 of Section 18</b>	
<b>34</b> Quantity of drinking water	25
<b>35</b> Source of supply	26

Rules	Pages
<b>36</b> Means of supply	26
<b>37</b> Cleanliness of well or reservoir	26
<b>38</b> Report from Health Officer	26
<b>39</b> Cooling of water	26
Rules 40 to 49 under sub-section (3) of section 19	26
<b>40</b> Latrine Accommodation	27
<b>41</b> Latrines to conform to Public Health requirements	27
<b>42</b> Privacy of latrines	27
<b>43</b> Sign boards to be displayed	27
<b>44</b> Urinal accommodation	27
<b>45</b> Urinals to conform to Public Health requirements	27
<b>46</b> Certain latrines and urinals to be connected to sewerage system	28
<b>47</b> White-washing, Colour-washing or latrines and urinals	28
<b>48</b> Construction and maintenance of drains	28
<b>49</b> Water in latrines	28
<b>Rules 50 to 52 under sub-section (2) of Section 20</b>	
<b>50</b> Number and location of spittoons	28
<b>51</b> Type of spittoons	28
<b>52</b> Cleaning of spittoons	28
<b>CHAPTER IV</b>	
<b>SAFETY</b>	
<b>Rules 53 to 69 under sub-section (2) of Section 21</b>	
<b>53</b> Any guard specified to be deemed to be fencing	29
<b>54</b> Certain parts of machinery to be fenced	29
<b>55</b> Certain parts of machine tools to be fenced.	29
<b>56</b> Emery and abrasive wheels to be provided with an iron cover guard	29
<b>57</b> The floor round every machine to be in good repair and non-slippery	29
<b>58</b> Important pulleys to be provided with belt hangers	29
<b>59</b> Driving straps of fast and loose pulleys to have suitable string gear	29
<b>60</b> Lubrication of bearing, etc., of running belts to be done only by experience or trained persons	29
<b>61</b> Service Platforms to be provided for overhead shafting	29
<b>62</b> Machinery in motion not to be cleaned with cotton wastes, etc., held in hand	30

Rules	Pages
<b>63</b> Shafting ladders	30
<b>64</b> Certain workers to be supplied with certain clothing free of charge	30
<b>65</b> Belts, etc., of machinery requiring attention when in motion to have safe and convenient access	30
<b>66</b> Additional weights not to be placed on safety valve of any boiler except with written sanction	30
<b>67</b> Gear wheels of cashew roasting drums to be covered	30
<b>68</b> Display of pictorial safety posters	30
<b>69</b> The Chief Inspector's decision in regard to measures to be taken for the protection of machinery final	30
<b>Rule under sub-section (1) of Section 22</b>	
<b>69A</b> The register of specially trained workers shall be in Form No.34	30
<b>Rule under sub-section (2) of Section 23</b>	
<b>70</b> Employment of young persons on dangerous machines	30
<b>Rule under sub-section (3) of section 26</b>	
<b>71</b> Part of machines deemed to be guarded by the makers	31
<b>Rule under Section 28</b>	
<b>72</b> Hoists and lifts.	31
<b>Rules under sub-section (2) of Section 29</b>	
<b>73</b> Inspection of lifting machines, chains ropes and lifting tackles	31
<b>74</b> Pressure Vessels or Plant	33
<b>74A</b> Water-sealed Gasholder	37
<b>Rules under sub – section (2) of Section 34</b>	
<b>75</b> Excessive weight	38
<b>Rules under section 35</b>	
<b>76</b> Protection of eyes	39
<b>Rules under sub-section (6) of section 36</b>	
<b>77</b> Minimum dimension of manholes	40
<b>Rules under sub-section (5) of section 37</b>	
<b>78</b> Exemptions	41
<b>Rules under sub-section (1) of section 38</b>	
<b>79</b> Fire	42

Rules	Pages
<b>Special rules for match factories</b>	
<b>80</b> In match factories	51
<b>Rules under section 41</b>	
<b>81</b> Further safety precautions.	52
Schedule I Textile machinery except machinery used in jute mills	52
Schedule II Cotton ginning	59
Schedule III Wood-working machinery	59
Schedule IV Rubber mills	61
<b>81A</b> Building and structures	61
<b>81B</b> Machinery and plant	61
<b>81C</b> Method of work	61
<b>81D</b> Stacking and storing of materials, etc	61
<b>81E</b> Reaction Vessels and Kettles	61
<b>81F</b> The Qualifications, conditions of service and duties of Safety Officers shall be as follows	62
<b>81G</b> Examination of eye sight of certain workers.	64
<b>81H</b> Railways in factories.	64
<b>81 I</b> Safety Committee.	68
<b>81J</b> Quality of Personal Protective Equipments	68
<b>81K</b> Protective Equipments	69
<b>81L</b> Ovens and Driers	69
<b>81M</b> Thermic fluid heaters.	71
<b>Rules under Sub-section (1) of Section 41 A</b>	
<b>81AA</b> Site Appraisal Committee	72
Format of Application to The Site Appraisal Committee	73
<b>Rules under Section 7A (3), 41B (2) and 112</b>	
<b>81AB</b> Health and Safety Policy	76
<b>Rules under Section 41B Material Safety Data Sheet</b>	
<b>81AC</b> Collection, development and dissemination of information	77
<b>Material Safety Data Sheet Sample Model</b>	78
<b>81AD</b> Disclosure of information to workers	80
<b>81AE</b> Disclosure of information to the Chief Inspector.	80



Rules	Pages
<b>81AF</b> Information on Industrial wastes.	80
<b>81AG</b> Review of the information furnished to workers etc	81
<b>81AH</b> Confidentiality of information.	81
<b>Rules under Sections 41B, 41C</b>	
<b>Specific Responsibility of the Occupier in Relation to Hazardous Process</b>	
<b>81AI</b> Medical Examination.	81
<b>81AJ</b> Occupational Health Centres.	82
<b>Equipment for Occupational Health Centre in Factories</b>	
<b>81AK</b> Ambulance Van	84
<b>81AL</b> Decontamination facilities	85
<b>81AM</b> Making available Health Records to workers	86
<b>81AN</b> Qualification, etc. of Supervisors	86
<b>81AO</b> Issue of guidelines	86
<b>Special Rules for jute Mills</b>	
<b>82</b> Site of feed tables and protective devices in Jute Mills	86
<b>Special rule for Tea Factories</b>	
<b>83</b> The roll table to be fenced and brushes for sweeping the roll table to be provided	86
<b>Special rules for Brick and Tile works</b>	
<b>84</b> Finger guard to be provided at the feed and of every revolving press	87
<b>84A</b> Special rules on ship building and ship repairing	
<b>84A</b>	
Access and Staging	88
Further precautions against fall of Persons, Materials and Articles	92
Raising and Lowering	93
Precautions against asphyxiation, injurious fumes or explosions	94
Precautions in use of Electrical Energy	99
Miscellaneous Safety Provisions	100
Protective Wear	101
Health and Welfare	102
Training and Supervision	103
Special rule for decorticating factories	103

Rules	Pages
<b>85</b> The beater arms and feed mouth of decorticator to be guarded.	103
<b>Printing Presses</b>	103
<b>86</b> Guards to platen and guillotine machine	103
<b>Special rule relating to Electric Fittings</b>	103
<b>87</b> Protective measures against danger from electrical shock	103
<b>87A</b>	103
<b>87B</b> Protective measures relating to Fragile Roofs	104
<b>CHAPTER V</b>	
<b>WELFARE</b>	
<b>Rules under sub-section (2) of section 42</b>	
<b>88</b> Washing facilities	105
<b>Rules under section 43</b>	
<b>88A</b> Facilities for storing and drying clothing	106
<b>Rules under sub-section (1) of section 45</b>	
<b>89</b> First aid appliance	106
<b>89A</b> Notice regarding first aid	108
<b>90</b> Ambulance room	108
<b>APPENDIX II</b>	
<b>(See Rule 89)</b>	
<b>Instruction for handling emergencies</b>	
<b>Rules 91 to 97 under section 46</b>	
<b>91</b> Canteen	112
<b>92</b> Dining hall.	113
<b>93</b> Equipment.	113
<b>94</b> Prices to be charged	113
<b>94A</b> Supply of balanced diet in the canteen.	114
<b>95</b> Account	114
<b>96</b> Managing Committees.	114
<b>96A</b> Medical inspection of canteen staff	115
<b>97</b> Relaxation of rule in the case of centralized cooking	115
<b>Rules under Section 47</b>	
<b>98</b> Shelters, rest rooms and lunch rooms.	115

Rules	Pages
<b>Rules 99 to 102 under sub-section (3) of Section 48</b>	
<b>99</b> Creches	116
<b>100</b> Wash room.	117
<b>101</b> Supply of milk and refreshment.	117
<b>102</b> Clothes for crèche staff.-	117
<b>102A</b> Exemption from the provision of crèche	118
<b>CHAPTER VI</b>	
<b>WORKING HOURS OF ADULTS</b>	
<b>Rule under sub-section (2) of Section 53</b>	
<b>103</b> Compensatory Holidays.	119
<b>Rules under Section 59</b>	
<b>104</b> Muster roll for exempted factories.	119
<b>105</b> Restriction of double employment	120
<b>Notice under sub-section (8) of section 61</b>	
<b>106</b> Notice of periods of work for adults.	120
<b>Register under sub-section (2) of Section 62</b>	
<b>107</b> Register of adult workers.	120
<b>Rules 108 to 110 prescribed under Section 64</b>	
<b>108</b> Persons who hold position of supervision or management or are engaged in confidential position in a factory	120
<b>109</b> List to be maintained of persons holding confidential position or position of supervision or management.-	121
<b>110</b> Exemption of certain adult workers	121
<b>111</b> Exemption to women working in fish curing and fish canning or fish freezing factories	135
<b>CHAPTER VII</b>	
<b>EMPLOYMENT OF YOUNG PERSONS</b>	
<b>Notice under sub-section (3) of section 72</b>	
<b>112</b> Notice of period of work for children	136
<b>Register under Sub-section (2) of section 73</b>	
<b>113</b> Register of child workers	136
<b>CHAPTER VIII</b>	
<b>LEAVE WITH WAGES</b>	
<b>Rules 114 to 121 under sections 83 and 112</b>	
<b>114</b> Leave with wages register.	136
<b>115</b> Leave book and attendance card	136

Rules	Pages
<b>116</b> Medical Certificate	137
<b>117</b> Notice by workers	137
<b>118</b> Grant of leave with wages	137
<b>119</b> Payment of wages if the worker dies	137
<b>120</b> Register to be maintained in case of exemption under section 84	137
<b>121</b> Calculation of cash equivalent of advantage accruing through the concessional sale of food grains and other articles.	137
<b>CHAPTER IX</b>	
<b>SPECIAL PROVISIONS</b>	
<b>Rule under Section 87</b>	
<b>122</b> Dangerous manufacturing process or operations	138
Schedule 1 Manufacture of aerated waters and Processes incidental thereto	140
Schedule II Electrolytic plating or oxidation of metal articles by use of an electrolyte containing acids, Bases or salts of metal such as chromium, nickel, cadmium, Zinc, copper, silver, gold etc.	140
Schedule III Manufacture and Repair of Electric Accumulators	143
Schedule IV Glass Manufacture	146
Schedule V Grinding or glazing of metals and Processes incidental thereto	148
Schedule VI Manufacture and treatment of lead and certain compounds of lead	150
Schedule VII Generating Petroleum Gas from Petrol	153
Schedule VIII Cleaning or smoothing, roughening, etc., of articles, by a jet of sand metal shot or grit, or other abrasive propelled by a blast of compressed air or steam	153
Schedule IX Liming and tanning of raw hides and skins and Process incidental thereto	157
Schedule X Printing press and type foundries – certain Lead process carried on therein	159
Schedule XI Manufacture of Pottery	161
Schedule XII Part 1 Chemical Works	164
Part II General Requirements	165
Part- III Fire and Explosion risks	171
Part IV Risks of Toxic Substances.	172
Part V Special Provisions	173
Part VI Medical Requirements	175
Part VII Additional Welfare Amenities	176
Part VIII Duties of workers.	177
Part IX Restriction on the employment of young persons under 18 years of age and women	178

Rules	Pages
Part X Exemption	178
Schedule XIII Manipulation of Stone or Any Other Material Containing Free Silica	180
Schedule XIV Handling and processing of Asbestos, manufacturing of any article of Asbestos and any other process of manufacture or otherwise in which Asbestos is used in any form	182
Schedule XV Handling or Manipulation of Corrosive Substances	186
Schedule XVI Processing of Cashew nut	188
Schedule XVII Compression of oxygen and hydrogen produced by Electrolysis of water.	190
Schedule XVIII Process of Extracting Oils and Fats from Vegetables and Animals Sources in Solvent Extraction Plants	191
Schedule XIX Manufacture or manipulation of manganese and its compounds	193
Schedule XX Manufacture or Manipulation of Dangerous Pesticides	196
Schedule XXI Manufacture, handling and usage of benzene and Substances containing benzene	200
Schedule XXII Manufacturing Process or Operation in Carbon Disulphide plant	204
Schedule XXIII Manufacture or Manipulation of Carcinogenic Dye Intermediates	206
Schedule XXIV Operations involving high noise levels.	211
Schedule XXV Manufacture Of Rayon By Viscose Process	213
Schedule XXVI Highly Flammable Liquids And Flammable Compressed Gases	217
Schedule XXVII Operations In Foundries	218
PART –B Schedule I Dyeing, Stencilling And Painting Of Mats, Mattings And Carpets In Coir And Fibre Factories	224
Schedule II Cellulose Spraying	225
Schedule III Graphite Powdering And Incidental Processes	225
Schedule IV Curing, Canning Or Other Processing Of Fish	226
<b>Rules under section 88</b>	
<b>123</b> Notification of Accidents and Dangerous Occurrences	227
<b>Rules under Sub-Section (1) Of Section 89</b>	
<b>124</b> Notice of poisoning or disease	228
<b>CHAPTER X SUPPLEMENTAL</b>	
<b>Rule under Sub-Section (1) of Section 107</b>	
<b>125</b> Procedure in appeals	229

Rules	Pages
<b>Rule under Sub-Section (1) of Section 108</b>	
<b>126</b> Display of notices	230
<b>Rule Under Section 110</b>	
<b>127</b> Returns	230
<b>Rule under Section 109</b>	
<b>128</b> Service of notice	230
<b>Rules 129 to 134 under Section 112</b>	
<b>129</b> Information required by the Inspector	231
<b>129A</b> Permissible levels of certain chemical substance in work environment	231
<b>130</b> Muster Roll	236
<b>131</b> Register of accidents and dangerous occurrences	236
<b>132</b> Maintenance of Inspection Book	237
<b>133</b> Particulars of rooms	237
<b>134</b> Posting of certain notice in work rooms	237
<b>Rules 135 to 206 under section 87, relating to Chemical works</b>	
<b>135</b> Application	237
<b>136</b> Definitions	237
<b>137</b> Exceptions	238
<b>General – Rules 138 to 152</b>	
<b>138</b> Housekeeping	238
<b>139</b> Improper use of chemicals	238
<b>140</b> Storage of food	238
<b>141</b> Testing	238
<b>142</b> Process hazards.	238
<b>143</b> Unauthorized personnel	239
<b>144</b> Visitors	239
<b>145</b> Instruments	239
<b>146</b> Cocks and valves	239
<b>147</b> Manholes	239
<b>148</b> Emergency instructions	239
<b>149</b> Protection of certain mixtures.	239

Rules	Pages
<b>150</b> Electrical apparatus	239
<b>151</b> Place of work	239
<b>152</b> Packing, storage and transport of chemicals	239
<b>Fire And Explosion Risks - Rules 153 To 171</b>	
<b>153</b> Site	240
<b>154</b> Isolation of building	240
<b>155</b> Fire resistance	240
<b>156</b> Dangers of ignition (including lighting installation)	240
<b>157</b> Non-sparking tools	240
<b>158</b> Static electricity	241
<b>159</b> Lightning condition	241
<b>160</b> Process heating	241
<b>161</b> Escape of materials.	241
<b>162</b> Leakage of inflammable liquids	241
<b>163</b> Cleaning of empty containers	241
<b>164</b> Storage of combustible materials	241
<b>165</b> Installing of pipe lines for inflammable liquids	241
<b>166</b> Packing of reaction vessels.	241
<b>167</b> Safety valves	242
<b>168</b> Vigorous or delayed reactions	242
<b>169</b> Examinations, testing and repair of plant	242
<b>170</b> Alarm systems	242
<b>171</b> Further precautions	242
<b>Acid, Gas, Vapour, Fume Or Dust Risks-Rules 172 To 183</b>	
<b>172</b> Escape of gases, etc	242
<b>173</b> Danger due to effluents	242
<b>174</b> Staging.	242
<b>175</b> Instruction as regards risk.	243
<b>176</b> Breathing apparatus.	243
<b>177</b> Treatment of persons	243
<b>178</b> Personal protective equipment	243

<b>179</b>	Cloakrooms	243
<b>180</b>	Special bathing accommodation	244
<b>181</b>	Entry in to vessels	244
<b>182</b>	Examination and Repair of plant.	244
<b>183</b>	Storage of acid carboys	244
<b>Corrosive Or Deleterious Substances Risks-Rules 184-191</b>		
<b>184</b>	Buildings.	244
<b>185</b>	Leakage	244
<b>186</b>	Precautions against escape	245
<b>187</b>	Drainage	245
<b>188</b>	Covering of vessels	245
<b>189</b>	Ventilation	245
<b>190</b>	Means of escape	245
<b>191</b>	Treatment of personal	245
<b>Maintenance duties of workers, facilities and Medical examination – rules 192-198.</b>		
<b>192</b>	Maintenance	246
<b>193</b>	Washing facilities	246
<b>194</b>	Mess -room facilities	246
<b>195</b>	Ambulance room	246
<b>196</b>	Medical Personnel	247
<b>197</b>	Medical Examination	247
<b>198</b>	Duties of workers	247
<b>Special Process Rules 199 To 206</b>		
<b>199</b>	Application	250
<b>200</b>	Entry into gas tar or coal tar still.	250
<b>201</b>	Entry into bleaching powder chambers	250
<b>202</b>	Special precautions for nitro and amido processes	250
<b>203</b>	Precautions during caustic grinding, etc	251
<b>204</b>	Chlorate manufacture	251
<b>205</b>	Restrictions on the employment of young persons and women	251
<b>206</b>	Duties of employees.- Every person employed	251
<b>207</b>		251





**GOVERNMENT OF KERALA**  
*Labour and Local Administration Department*  
**NOTIFICATION**

**No. D Dis. 4373/57/L and L.A.D dated Trivandrum 12th December 1957**

In exercise of the powers conferred by section 112 of Factories Act, 1948 (Central Act LXIII of 1948), the Government of Kerala hereby make the following rules, the same having been previously published as required by section 115 of the said act.

**THE KERALA FACTORIES RULES, 1957**

**CHAPTER I**  
**PRELIMINARY**

**1. Short title, extent and commencement:**

- (1) These rules may be cited as the Kerala Factories Rules, 1957.
- (2) These rules shall extent to the whole of the State of Kerala.
- (3) These rules except rules 29 to 33, 81, 88, 91 to 102 and 122 shall come into force at once and rules 29 to 33, 81, 88, 91 to 102 and 122 shall come into force on such days as are specified therein

**2. Definitions:**

In these rules unless there is anything repugnant in the subject or contest –

- (a) “Act” means the Factories Act, 1948.
- (b) “Appendix” means an appendix append to these rules.
- (c) “Artificial humidification” means the introduction of moisture into the air of a room by any artificial means whatsoever ; except the unavoidable escape of a steam or water vapour into the atmosphere directly due to a manufacturing process:  
Provided that the introduction of air directly from outside through moistened mats or screens placed in opening at times when the temperature of the room is [26.5 °C] or more, shall not be deemed to be artificial humidification.
- (d) “Belt” includes any driving any strap or rope.
- (e) “Degrees” (of temperature) means degrees on the [Celsius] scale.
- (f) “District Magistrate” includes such other official as may be appointed by the State Government in that behalf.
- (g) “Fume” includes gas or vapor.
- (h) “Health officer” means the municipal health officer in a municipality or corporation, the District Health Officer concerned in any area within in the jurisdiction of a district Board or Panchayath or such other officer as may be appointed by the State Government for any are in that behalf irrespective of whether such area is within the limits of a municipality or the jurisdiction of a district board or Panchayath.
- (i) “Hygrometer” means an accurate wet and dry bulb hygrometer conforming to the prescribed conditions as regards constructions and maintenance.
- (j) [omitted]
- (k) “Maintained” means maintained in an efficient state, in efficient working order and in good repair.

- (l) “Manager” means the person responsible to the occupier for the working of the factory for the purposes of the Act.
- (m) “Family” means the wife, son, daughter, father, mother, brother or sister of the owner of any place where in a manufacturing process is carried on and who lives with or is dependent, on such owner.
- (n) “Local authority” means the commissioner in the case of an area within the limits of a Municipality or Corporation, the executive officer in the case of an area within the Jurisdiction of a Panchayath and the president of a District Board in the case of any other area.
- (o) “Public Health authority” means the Local Health Officer having jurisdiction over the area.
- (p) “Competent authority” means the Chief Inspector or an authority notified by the State Government from time to time for the purpose of Registration and grant of licence, renewal, amendment, transfer and issue of duplicate licence to factories.

### **Rule under Section 2 (ca)**

#### **2A. Competent Person**

- (1) The Chief Inspector may recognize any person as a ‘competent person’ within such area and for such period as may be specified for the purpose of carrying out tests, examinations, inspections and certification for such buildings, dangerous machinery, hoists and lifts, lifting machines and lifting tackles, pressure plant, confined space, ventilation system and such other process or plant and equipment as stipulated in the act and the Rules made there under, located in a factory, if such a person possesses the qualifications, experience and other requirements as set out in the schedule annexed to this Rule:

Provided that the Chief Inspector may relax the requirements of qualifications in respect of a ‘competent person’ if such a person is exceptionally experienced and knowledgeable, but not the requirements in respects of the facilities at his command.

Provided further that the ‘Competent person’ recognized under this provision shall not be above the age of 62 and shall be physically fit for the purpose of carrying out the test and examination and inspection.

- (2) The Chief Inspector may recognize an Institution of repute having persons possessing qualifications and experience as set out in the schedule annexed to sub rule(1) for the purpose of carrying out tests, examinations, inspections and certification of buildings, dangerous machinery, hoists and lifts, lifting machines and lifting tackles, pressure plant, confined space, ventilation system and such other process or plant and equipment as stipulated in the Act and the Rules made there under, as a competent persons within such area and for such period as may be specified.
- (3) The Chief Inspector on receipt of an application in the prescribed form from a person or an institution intending to be recognized as a ‘competent person’ for the purposes of this Act and the Rules made there under shall register such application and within a period of sixty days of the date of receipt of application, either after having satisfied himself as regards competence and facilities available at the disposal of the applicant recognize the applicant as a ‘competent person’ and issue a

certificate of competency in the prescribed form or reject the application specifying the reasons therefore.

Every application for recognition or renewal of recognition of competent person shall be accompanied by a treasury chalan receipt towards the remittance of the prescribed fee shown in Appendix II.

- (4) The Chief Inspector may, after giving an opportunity to the competent person of being heard revoke the certificate of competency,
- (i) if he has reasons to believe that a competent person-
- (a) has violated any condition stipulated in the certificate of competency; or
- (b) has carried out a test, examination and inspection or has acted in a manner inconsistent with the intent or the purpose of this Act or the Rules made there under ; or has omitted to act as required under the Act and the Rules made there under ; or
- (ii) for any other reason to be recorded in writing.

**Explanation.-** For the purpose of this Rule, an institution includes an organization.

- (5) The Chief Inspector may, for reasons to be recorded in writing, require recertification of lifting machines, lifting tackles, pressure plant or ventilation system, as the case may be which has been certified by a competent person.

**Form of Application for Grant of Certificate of Competency  
to a Person under Sub-Rule (1) Of Rule 2A**

1	Name	:
2	Date of Birth	:
3	Name of the Organization (if not self-employed)	:
4	Designation	:
5	Educational qualification (copies of testimonials to be attached)	:
6	Details of professional experience (in Chronological order)	
	Name of the organization	Period of Service
		Designation
		Area of Responsibility
7	Membership if any, professional bodies	:
8	(i) Details of facilities(examination, testing etc.) at his disposal	:
	(ii) Arrangements for calibrating and maintaining the accuracy of these facilities	:
9	Purpose of which competency certificate is sought (section or sections of the Act should be stated)	:

- 10 Whether the applicant has been declared as competent:  
person under any statue (if so, the details)
- 11 Any other relevant information :

**Declaration by the applicant**

I ..... hereby declare that the information furnished above is true. I undertake

- (a) that in the event of any change in the facilities at my disposal (either addition or deletion) or my leaving the aforesaid organization, I will promptly inform the Chief Inspector ;
- (b) to maintain the facilities in good working order, calibrated periodically as per manufacturer’s instructions or as per National Standards ; and
- (c) to fulfill and abide by all the conditions stipulated in the certificates of competency and instructions issued by the Chief Inspector from time to time.

Place :

Date :

Signature of the applicant.

**Declaration by the Institution (If Employed)**

I,..... certify that Shri..... whose details are furnished above, is in our employment and nominate him on behalf of the organization for the purpose of being declared as a Competent Person under the Act. I also undertake that I will-

- (a) notify the Chief Inspector in case the Competent Person leaves out employment;
- (b) provide and maintain in good order all facilities at his disposal as mentioned above;
- (c) notify the Chief Inspector any change in the facilities(either addition or deletion)

Place :

Date. :

Office Seal

Signature  
Name and designation,  
Tel No.

**Form of Application for Grant of Certificate of Competency  
to an Institution under Sub-Rule (2) Of Rule 2A**

- 1 Name and full address of Organization
- 2 Organization’s status  
[specify whether Government, Autonomous,  
Co- operative (Corporate or Private)
- 3 Purpose for which Competency Certificate is  
Sought [Specify section (s) of the Act

- 4 Whether the organization has been declared as a competent person under this or any other statute. If so, give details
- 5 Particulars of persons employed and possessing qualification and experience as set out in schedule annexed to sub-rule (1) of Rule 2A

Sl. No	Name & Designation	Qualifications (Testimonial to be attached)	Experience	Section(s) and the rules under which is competency sought for	Signature
1	2	3	4	5	6

- 6 Details of facilities (relevant to item 3 above) and arrangements made for their maintenance and periodical calibration
- 7 Any other relevant information

### Declaration

I ..... hereby, on behalf of ..... certify that the details furnished above are correct to the best of my knowledge. I undertake to:-

- (i) Maintain the facilities good in working order, calibrated periodically as per manufactures instructions or as per National Standards; and
- (ii) To fulfill and abide by all the conditions stipulated in the Certificate of competency and instructions issued by the Chief Inspectors from time to time.

Place :

Date :

Signature of Head of the Institution  
or of the persons authorized to sign on his behalf.

**Form of Certificate of competency issues to a person or an Institution in pursuance to Rule 2A Made under section 2(ca) Read with section .....**

I,..... in exercise of the powers conferred on me under Section 2(ca) of the Factories Act and the rules made there under, hereby recognize Shri..... employed in ..... (Name of the person), (Name of the organization) to be a competent person the purpose of carrying out tests, examinations, inspections and certification for such buildings, dangerous machinery, lifts and hoists, lifting machines and lifting tackles, pressure plants, confined space, ventilation system and process or plant and equipment (as the case may be) used in the factory located in Kerala State under section ..... and the rule made thereunder.\*

This certificate is valid from.....to.....

This certificate is issued subject to the conditions stipulated hereunder:-

- (i) Tests, examinations and inspections shall be carried out in accordance with the provisions of the Act and the Rules made there under;
- (ii) Tests, examination and inspections shall be carried out under direct supervision of the competent person;
- (iii) The certificate of competency issued in favour of a person shall stand cancelled if the person leaves the organization mentioned in his application;
- (iv) The institution recognized as competent person shall carry out the tests, examination and inspections by

	Name	Sections Applicable
1.		
2.		
3.		
(v)	.....	
(vi)	.....	

Station :  
Date :

Office Seal

Signature of the Chief Inspector

**SCHEDULE**

Section Rules under which competency is recognized	Qualification required	Experience for the purpose	Facilities at his command
1	3	4	5
<p><b>1</b> Rules made under section 6 and section 112- Certificate stability for buildings.</p>	<p>Degree in Civil or Structural engineering or equivalent</p>	<p>i. A minimum of 10 years experience in the design of construction or testing or repairs of structures ;                      ii. Knowledge of non -destructive testing various codes of practices that are current and the effect of the vibrations and natural forces on the stability of the building, and                      iii. Ability to arrive at a reliable conclusion with regard to the safety of the structure or the building</p>	
<p><b>2</b> Rules made under section 23 (2)- “Dangerous Machines”</p>	<p>Degree in Electrical or Mechanical or Textile Engineering; or Equivalent.</p>	<p>i. A minimum of 7 years experience in-                      a. design or operation or maintenance ; or                      b. testing, examination and inspection of relevant machinery, their guards, safety devices and appliances.                      ii. He shall-                      a. be conversant with safety devices and their proper functioning ;                      b. be able to identify defects and any other cause leading to failure ; and                      c. have ability to arrive at reliable conclusion with regard to the proper functioning of safety device and appliance and machine guard.</p>	<p>Gauges for measurement; instruments for measurement of speed and any other equipment or device to determine the safety in the use of the dangerous Machines.</p>



1	2	3	4	5
<b>3</b>	Section 28 Lifts and Hoists	A degree in Electrical and/or Mechanical Engineering or its equivalent.	i. A Minimum experience of 7 years in- a. design or erection or maintenance or: b. inspection and test procedures ; of lifts and hoists ; ii. He shall be- a. Conversant with relevant codes of practices and test procedures that are current ; b. Conversant with other statutory requirements covering the safety of the Hoists and Lifts; c. able to identify defects and arrive at a reliable conclusion with regard to the safety of Hoists and Lifts.	Facilities for load testing tensile testing, gauges, equipment/ gadgets, for measurement and any other equipment required for determining the safe working conditions of Hoists and Lifts.
<b>4</b>	Section-29 Lifting Machinery and Lifting Tackle.	Degree in Mechanical or Electrical or Metallurgical Engineering or its equivalent	i. A minimum experience of 7 years in - a. design or erection or maintenance ; or b. Testing examination and inspection of lifting machinery, chains, ropes and lifting tackles. ii. He shall be - a. Conversant with the relevant codes of practices and test procedures that are current. b. conversant with fracture mechanics and metallurgy of the material of construction ; c. conversant with heat treatment/stress relieving techniques as applicable to stress bearing components and parts of lifting machinery and lifting tackles ; d. capable of identifying defects and arrive at a reliable conclusion with regard to the safety of lifting machinery, chain, ropes and lifting tackles.	Facilities for load testing tensile testing heat treatment, equipment/ gadget for measurement, gauges and such Other equipment, to determine the safe the safe working conditions of the lifting machinery/tackle.

1	2	3	4	5
<b>5</b>	Section 31-Pressure plant	Degree in Chemical or Electrical or Metallurgical or Mechanical Engineering or its equivalent.	<p>i. A minimum experience of 10 years in- design or erection or maintenance, or testing, examination and inspection of pressure plants.</p> <p>ii. He shall be-</p> <p>a. conversant with the relevant codes of practices and test procedures relating to pressure vessels ;</p> <p>b. conversant with statutory requirement concerning the safety of unfired pressure vessels and equipment operating under pressure ;</p> <p>c. conversant with non-destructive testing techniques as are applicable to pressure vessels ;</p> <p>d. able to identify defects and arrive at a reliable conclusion with regard to the safety of pressure plants.</p>	Facilities for carrying out hydraulic test, non-destructive test, gauges/equipment/ Gadgets for measurement and any other equipment or gauges to determine the safety in the use of pressure vessels
<b>6</b>	<p>i. Section 36- precautions against dangerous fumes.</p> <p>ii. Rules made under sections 41 and 112 concerning ship building and ship repairs</p>	Masters degree in chemistry, or a degree in chemical engineering	<p>i. A minimum of 7 years experience in collection and analysis of environmental samples and calibration of monitoring equipment;</p> <p>ii. He shall-</p> <p>a. be conversant with the hazardous properties of chemicals and their permissible limit values;</p> <p>b. be conversant with the current techniques of sampling and analysis of the environmental contaminants and</p> <p>c. be able to arrive at a reliable conclusion as regards the safety in respects of entering and carrying out hot work</p>	Meters, instruments and devices duly calibrated and certified for carrying out the tests and certification of safety for working in confined spaces.

1	2	3	4	5
7	<p>Ventilation systems as required under various schedules framed under section 87, such as schedules on-</p> <ul style="list-style-type: none"> <li>i. Grinding of glazing of metals and processes incidental thereto</li> <li>ii. Cleaning or smoothening etc. of articles, by a jet of sand, metal shot or grit, or other abrasive propelled by a blast of compressed air or steam.</li> <li>iii. Handling and processing of asbestos.</li> <li>iv. Manufacture of Rayon by viscose process.</li> <li>v. Foundry operations</li> </ul>	<p>Degree in Mechanical or Electrical Engineering or Equivalent.</p>	<ul style="list-style-type: none"> <li>i. A minimum of 7 years in the design fabrication, installation, testing of ventilation system and systems used for extraction and collection of dusts, fumes and vapor and other ancillary equipment</li> <li>ii. He shall be conversant with relevant codes of practice and tests procedures that are current in respect of ventilation and a traction system for fumes and shall be able to arrive at a reliable conclusion with regard to effectiveness of the system</li> </ul>	<p>Facilities for testing the ventilation system instruments and gauges for testing the effectiveness of the extraction systems for dusts, vapours and fumes and any other equipment needed for determining the efficiency and adequacy of these systems. He shall have the assistance of a suitable qualified technical person who can come to a reasonable conclusion as to the adequacy of the system.</p>

**Rules under Subsection (1) (aa) of Section 6****1. Approval of site, construction or extension of a factory:**

(1) No site shall be used for the location of a factory nor shall any building be constructed, reconstructed or extended for use as a factory, nor shall any manufacturing process be carried on in any building, constructed, reconstructed or extended unless the previous permission in writing is obtained from the State Government or the Chief Inspector or the Deputy Chief Inspector. The previous permission of the Chief Inspector or the Deputy Chief Inspector shall also be obtained for the installation of additional machinery or for the installation of prime movers exceeding the power already installed in the factory.

(2) Application for such permission shall be made in the prescribed Form No. 1 or in the composite application form to be submitted to the Green Channel Counter of the Kerala State Industries Development Corporation or District Industries Centres or other notified agencies as the case may be, who will forward a copy of the same to the Department concerned and shall contain the details such as the Name and address of the applicant, full particulars of the factory such as name, postal address, survey No. Village, Taluk, District, nearest Police Station, Railway Station all to the total power of plant and machinery in kW. The application shall be accompanied by the following documents:

- (a) A flow chart of the manufacturing process supplemented by a brief description of the process in its various stages.
- (b) Plans in triplicate drawn to scale showing :
  - (i.) the site of the factory and immediate surroundings including adjacent buildings and other structures, roads, drains, etc.
  - (ii.) the plan, elevation and necessary cross-sections of the various buildings, indicating all relevant details relating to natural lighting, ventilation and means of escape in case of fire.
  - (iii.) The plans of layout machinery clearly indicating the position of the plant and machinery, aisles and passageways. These shall be a minimum clearance of 50cm. between machines and fixed structures.

The plans and layout of factory buildings sent to the Department for approval under this rule shall be prepared by a person not below the rank of a draughtsman recognized by the Chief Inspector or the Deputy Chief Inspector/ State Government in this regard.

- (c) In the case of hazardous and polluting industries a certificate of approval of location of the factory obtained from the Chief Town planner to Government and a no objection certificate from the Kerala State pollution control board.
  - (d) A Chalan receipt evidencing payment or scrutiny Fee as prescribed in Appendix II.
  - (e) Such other particulars as the Chief Inspector or the Deputy Chief Inspector may require.
- (3) Site suitability.- The sitting of the factory shall satisfy the following requirement of minimum distance from, -

(i) Educational Institution	25 metres
(ii) Hospitals	30 metres
(iii) Religious-cum-worship building	25 metres
(iv) Tank and Canals	10 metres

and set back of three meters of open space of front , sides and rear. For sites abutting National Highways and State Highways the minimum set back of the building shall be 7 meters on front

Provided that the Chief Inspector or the Deputy Chief Inspector may subject to such conditions as may be prescribed, relax these requirement in respect of factories which do not create noise, pollution of do not generate solid, liquid or gaseous effluents.

- (4) If the Chief Inspector or the Deputy Chief Inspector is satisfied that the plans are in consonance with the requirements of the Act and rules he shall, subject to such conditions as he may specify, grant the permission sought for under permit and approve the plans by signing and returning to the applicant one copy of each plan, or he may call for such other particulars as he may require to enable such approval. The permission so granted will be valid for one year only unless it is revalidated, for completion of construction. Request for revalidation of permission shall be made to the Chief Inspector or the Deputy Chief Inspector as the case may be along with the fee prescribed in Appendix II.
- (5) The plans approved by the Chief Inspector or the Deputy Chief Inspector under this rule shall be readily available in the factory for inspection by the Inspectors and Additional Inspectors.
- (6) The Chief Inspector or the Deputy Chief Inspector may refuse to grant permission if the requirements of the Act and Rules are not satisfied and in such cases the reasons for refusing the permission shall be recorded and communicated to the Applicant.
- (7) (a) No manufacturing process shall be carried on in any building of a factory constructed, reconstructed or extended or taken into use as a factory or part of a factory until a certificate of stability in Form No. 3 in respect of that building has been obtained from a Competent Person.

Provided that the certificate of stability as required in this rule shall be valid only for a maximum period of five years from the date of its issue and a fresh stability certificate shall be obtained thereafter.

(b) The certificate of stability referred to in clause (a) shall be readily available in the factory for inspection by the Inspectors and Additional Inspectors.

- (8) (a) A factory or part of a factory constructed, reconstructed, extended or taken into use, shall be in accordance with the plans approved and shall satisfy the conditions subject to which the plans have been approved.
- (b) No machinery or prime mover or a permanent fixture not shown in the plans approved shall be installed, fixed or used in any factory except in replacement provided its capacity is not different and it is not occupying more floor area than that already shown in the approved plans.

## **2. Application for registration and grant of licence.**

The occupier of every factory shall submit to Chief Inspector or Deputy Chief Inspector an application for registration and grant of licence and notice of occupation specified in sections 6 and 7 in Form No. 2 in triplicate.

## **3. Grant of licence. –**

- (1) A licence for a factory may be granted by the [Chief Inspector or the Deputy Chief Inspector in Form No.4, on an application made in the prescribed Form No. 2 and on payment of the fees specified in Appendix I

Provided that subject to the provision of sub-section (3) of section 6 of the Act the Chief Inspector or the Deputy Chief Inspector may refuse to register a factory and grant of licence for the following reasons and communicate such decisions in writing to the occupier.

- (a) The plans of the factory are not approved under rules made in this behalf.
- (b) The requirements under sub-rule (7) of rule 3 or are not satisfied.

- (c) There is imminent danger to human life due to the presence of explosive or inflammable dust, gas, fumes or mixture beyond permissible level and effective measures are not taken to remove such danger
  - (d) There is imminent danger to human life due to the building or the entrances thereto or exists there from is in a dangerous or structurally unsound condition and effective measures are not taken to remove the danger, and.
  - (e) Such the reasons, as may be recorded in this behalf.
- (2) Every licence granted under this Chapter shall remain in force up to the 31st of December of the year for which the licence is granted.
  - (3) No manufacturing process shall be carried on in any factory without a licence having been granted by the Chief Inspector or the Deputy Chief Inspector and is in force for the time being.
  - (4) The licence granted to a factory under this rule, shall be readily available in the factory for inspection by the Inspectors and Additional Inspectors appointed under section 8 of the Act

#### **4. Amendment of licence.**

- (1) The licence granted under rule 5 may be amended by the competent authority..
- (2) The limits specified in the licence granted to a factory in regard to power or the number of persons employed shall not be altered or the name of the factory shall not be changed unless the licence has been amended for that purpose.
- (3) An application for amendment of a licence shall be submitted to the competent authority specifying the nature of amendment sought for and the reasons therefore at least 15 days prior to the date on which the applicant desires the amendment to take effect. The application shall be accompanied by the original licence and a treasury chalan receipt evidencing payment of the prescribed fee.
- (4) The fee for the amendment shall be as prescribed in Appendix I plus the difference between the fee that has been paid for the licence and the fee that is payable for the licence, had it been originally issued in the amended form:

Provided that if the limit specified in the licence is exceeded without making the application as aforesaid, the licence shall be amended only on payment of a fee of 100 percent in excess of the fee ordinarily payable under sub-rule (4) for getting the licence in the amended form.

- (5) On the receipt of such application together with the original licence and the chalan receipt for the prescribed fee, the Competent Authority may amend the licence suitably, if the statutory requirements are complied with or he may call for such other particulars or details or make such enquiries which he considers necessary before amending the licence. The Competent Authority shall incorporate the amendment in the appropriate columns of the original licence under his dated signature if he agrees to the amendment or may refuse the amendment and return the licence to the applicant. The amendment shall take effect from the date on which it is amended;

Provided that if an application for amendment is refused, the reason for the same shall be recorded and communicated to the applicant.

#### **5. Renewal of licence.**

- (1) A licence may be renewed by the Competent Authority.
- (2) Every application for the renewal of licence shall be in the prescribed Form No.2 in triplicate, and shall be made to the Competent Authority not less than two months before the date on which the licence expires and if the application is so made the premises shall be held to be duly licenced until such date as the Competent Authority under sub-rule (1) renews the licence or till the Competent

Authority intimates the applicant in writing his refusal to renew the licence as the case may be.

- (3) The fee for the renewal of a licence shall be the same as that for the grant of licence: Provided that if the application for renewal is not received within the time specified in sub-rule (2), the licence shall be renewed only on payment of an additional fee of an:-
- (i) 25% of the fee ordinarily payable if the application is received before the expiry of the licence;
  - (ii) 50% of the fee ordinarily payable if the application is received after the expiry of the licence;
- Provided further that the State Government or subject to the Control of State Government, the Chief Inspector may waive the payment of additional fee by a return order for valid reasons.
- (4) An application for renewal of licence may be refused by the Competent Authority:
- (a) On any of the reasons stated in rule 5;
  - (b) If the applicant is guilty of repeated contravention of the provisions of the Act or Rules or both;
  - (c) If the applicant has obtained the licence by the fraud or by misrepresentation
  - (d) If the licensee has violated the conditions of the licence:
- Provided that, in any case falling under clauses (a), (b) or (c) before refusing the renewal of any licence, the applicant shall be given an opportunity to show cause why the renewal of licence shall not be refused.
- (5) Every licence renewed under this Rule shall remain in force up to 31<sup>st</sup> December of the year(s) for which the licence is renewed: Provided that the Chief Inspector or the Competent Authority may renew the licence for more than one year not exceeding five years at a stretch if an application is so made along with chalan receipt towards the payment of the required fee in lump sum.

#### **6. Transfer of licence.**

- (1) The licence granted under rule 5 may be transferred by the Competent Authority.
- (2) The holder of a licence may, at any time apply for permission to transfer the licence to another person.
- (3) Application for transfer shall be made to the Competent Authority along with the original licence and a treasury chalan receipt evidencing payment of fees for the transfer at the rates prescribed in Appendix II.
- (4) The transfer of licence shall take effect only after the Competent Authority approves the transfer and make entries of the details of transfer in the appropriate columns in Form No. 4 under his dated signature. The transferee shall not take over the factory before getting the written approval of the Competent Authority. The licence shall then be given to the person named (transferee) in the application:
 

Provided that the Competent Authority may call for such other particulars as he may require before effecting the transfer:

Provided further that if the Competent Authority disapproves the transfer he shall record the reasons in writing and communicate the same to the applicant.

#### **7. Procedure on death or disability of licensee.**

If a licensee dies or becomes insolvent, the person carrying on the business of such licensee shall not be liable to any penalty under the Act for exercising the powers granted to the licensee by the licence during

such time as may reasonably be required to allow him to make an application for transfer to get the licence transferred in his favour.

**8. Issue of duplicate licence.**

Where a licence granted or renewed under these rules is lost or accidentally destroyed a duplicate may be issued by the Competent Authority on payment of fee as prescribed in Appendix II.

**9. Payment of fees.**

(1) Fees payable under these rules shall be remitted in a local treasury on a chalan in the correct head of account notified by the Government from time to time.

(2) If an application for the grant, renewal, transfer or amendment of a licence is rejected, the fee paid shall be refunded to the applicant by the Chief Inspector:

Provided that if the Chief Inspector is satisfied that a factory has worked even on a single day during the period for which the application for the grant, renewal, transfer or amendment of licence is made, the fee remitted therefore shall not be refunded.

(3) When the amount paid is in excess of the prescribed fee for the grant or renewal of licence, the excess amount so paid may be refunded or adjusted towards the fee payable for the licence for the subsequent years on request from the occupier.

**10. Notice of occupation.**

The notice of occupation shall be in Form *No.2*

**12A. Notice of change of Manager.**

The notice of change of Manager shall be in Form No. 23.

**12B. Guidelines, instructions and records.-**

(1) Without prejudice to the general responsibility of the Occupier to comply with the provisions of Section 7A, the Chief Inspector may, from time to time, issue guidelines and instructions regarding the general duties of the Occupier relating to the health, safety and welfare of all workers while they are at work in the factory.

(2) The Occupier shall maintain such records, as may be prescribed by the Chief Inspector in respect of monitoring of working environment in the factory.

**12C. Register of factories**

The authorities granting, renewing, amending or transferring the licence shall maintain a register called the "Register of Factories" and full details shall be entered in it. The register shall be well maintained so as to have full details in respect of each factory at all times.

**12D. Suspension of licence.**

Without prejudice to the provision contained in these rules if a Factory is lying idle for a period of exceeding one calendar year, the Chief Inspector, may, after satisfying himself of the bonafides suspend the licence for one more licensing period(s) in that case licence fee is not payable for the suspended period. However, the full amount of licence fee is payable if the factory has worked even for a single day during a calendar year (licensing period).

Provided that the licence suspended under this rule, shall be renewed after revoking the suspension by the Chief Inspector on an application made by the licensee. Such application shall be submitted at least 15 days before reopening and shall be accompanied by the full amount of licence fee as applicable for grant of licence and 10% excess of the fee ordinarily payable.



## CHAPTER II INSPECTING STAFF

### Rule under Sub-Section (1) of Section (8)

**13. Appointment of Inspectors.-** No persons shall be appointed as Inspectors for the purpose of the Act, unless he/she the possesses the qualifications prescribed for such Inspectors in the Kerala Factories and Boilers Service Rules for the time being in force.

### Rules under section 9

**13A. Powers of Inspectors.-** An Inspector shall, for the purpose of the execution of the Act, have power of do all or any of the following things, that is to say-

- (a) to photograph any worker, to inspect, examine, measure, copy, photograph, sketch or test as the case may be, any building or room, any plant, machinery appliance or apparatus, any register or document or anything provided for the purpose of securing the health, safety or welfare of the workers employed in a factory;
- (b) in the case of an Inspector who is a duly qualified medical practitioner, to carry out such medical examinations as may be necessary for the purpose of his duties under the Act ;
- (c) to prosecute, conduct or defend before a court any complaint or other proceeding arising under the Act, or in discharge of his duties as an Inspector.

### Rules under sub-section (4) of section 10

**14. Duties of certifying Surgeon.**

- (1) For purposes of the examination and certification of young persons who wish to obtain certificates of fitness, the Certifying Surgeon shall arrange a suitable time and place for the attendance of such persons, and shall give pervious notice in writing of such arrangements to the managers of the factories situated within the local limits assigned to him.
- (2) The certifying Surgeon shall issue his certificates in Form No.5. The foil and counterfoil shall be filled in and the left thumb mark of the person in whose name the certificate is granted shall be taken on them. On being satisfied as to the correctness of the entries made therein and of the fitness of the person examined he shall sign the foil and initial the counterfoil and shall deliver the foil to the person in whose name the certificate is granted. The foil so delivered shall be the certificate of fitness granted under section 69. All counterfoils shall be kept by the Certifying Surgeon for a period of at least 2 years after the issue of the certificate.
- (3) The Certifying Surgeons shall, upon request by the Chief Inspector, carry out such examination and furnish him with such report as he may indicate, for any factory or class or description of factories where-
  - a. cases of illness have occurred which it is reasonable to believe are due to the nature of the manufacturing process carried on, or other conditions of work prevailing therein, or.
  - b. by reason of any change in the manufacturing process carried on, or in the substances used therein or by reason of the adoption of any new manufacturing process or of any new substance for use in a manufacturing process, there is a likelihood of injury to the health of workers employed in that manufacturing process, or
  - c. young persons are, or are about to be employed in any work which is likely to cause injury to their health.
- (4) For the purpose of the examination of persons employed in processes covered by the rules relating to dangerous operations, the Certifying Surgeon shall visit the factories within the local limits assigned to him at such intervals as are prescribed by the rules relating to such dangerous operations.
- (5) At such visits, the certifying surgeon after examining a worker, shall issue a certificate of fitness in Form No. 27. The record of examination and reexamination carried out shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-rule (1) and (2) including the nature and the result of the tests shall also be entered by the certifying surgeon in a Health Register in Form 17.

- (6) If the Certifying Surgeon finds as a result of his examination that any person employed in such process is no longer fit for medical reasons to work in that process he shall suspend such persons from working in that process for such time as he may think fit and no person after suspension shall be employed in that process without the written sanction of the Certifying Surgeon in the Health Register.
- (7) The manager of a factory shall afford to the Certifying Surgeon facilities to inspect any process in which any person is employed or is likely to be employed.
- (8) The manager of a factory shall provide for the purpose of any medical examination which the Certifying Surgeon wishes to conduct at the factory (for his exclusive use on the occasion of an examination) a room which shall be properly cleaned and adequately ventilated and lighted and furnished with a screen, a table (with writing materials) and chairs

**CHAPTER III  
HEALTH**

**Exemptions under sub-section (2) of section 11**

**15. Cleanliness of walls and ceilings.**

(1) Clause (d) of sub-section (1) of section 11 of the Act shall not apply to the class or description of factories or parts of factories specified in the schedule hereto :

Provided that they are kept in a clean state by washing, sweeping, brushing, dusting, vacuum cleaning or other effective means:

Provided further that the said clause (d) shall continue to apply –

- (i) as respects factories or parts of factories specified in Part A of the said schedule to work-room in which the amount of cubic space allowed for every person employed in the room is less than 14 cubic metre;
- (ii) as respects factories or parts of factories specified in Part B of the said schedule to work-room in which the amount of cubic space allowed for every person employed in the room is less than 70 cubic metre;
- (iii) to engine houses, fitting shops, lunch rooms, canteens, shelters, crèches, clock rooms, rest-rooms and wash places ; and
- (iv) to such parts of walls, sides and tops of passages and staircases as are less than 6 metre above the floor or stair.

(2) If it appears to the Chief Inspector that any part of a factory to which by virtue of sub-rule (1) any of the provisions of the said clause (d) do not apply, or apply as varied by sub-rule (1) is not being kept in a clean state, he may by written notice require the occupier to white wash or colour wash, wash paint or varnish the same, and in the event of the occupier failing to comply with such requisition, within two months from the date of the notice, sub-rule (1) shall cease to apply to such part of a factory, unless the Chief Inspector otherwise determines.

**Schedule**

**Part A**

1. Blast furnaces.
2. Brick and tile woks in which unglazed bricks or tiles are made.
3. Cement works.
4. Chemical works.
5. Copper Mills.
6. Gas Works
7. Iron and Steel Mills.
8. Stone, slate and marble works.
9. Petroleum Refineries.
10. The following parts of factories:-
  - Rooms used only for the storage of articles.
  - Rooms in which the walls or ceilings consists of galvanized iron, glazed bricks, glass, slate, asbestos, bamboo, thatch.
  - Parts in which dense steam is continuously evolved in the process.
  - Parts in which pitch, tar or like material is manufactured or is used to a substantial extent, except in brush works.

- The parts of a glass factory known as the glass house.
- Rooms in which graphite is manufactured or is used to a substantial extent in any process.
- Parts in which coal, coke, oxide of iron, ochre, lime or stone is crushed or ground.
- Parts of walls, partitions, ceilings or tops of rooms which are at least 20 feet above the floor.
- Ceilings or tops of rooms in print works, bleach works or dye works with the exception of finishing rooms or warehouses.
- Inside walls of oil mills below a height of 5 feet from the ground floor level.
- Inside walls in tanneries below a height of 5 feet from the ground floor level where a wet process is carried on.
- Parts in which cashew nuts are roasted or cashew oil is extracted.
- Walls in tea factories.

### Part B

1. Coach and motor body works.
2. Electric generating or transforming stations.
3. Engineering works.
4. Factories in which sugar is refined or manufactured
5. Foundries other than foundries in which brass casting is carried on.
6. Gun factories.
7. Ship building works.
8. Those parts of factories where unpainted or unvarnished wood is manufactured.

### Register under sub-section (1) of section 11

#### 16. Record of whitewashing etc.

The record of dates on which-white washing, colour-washing, varnishing etc., are carried out shall be entered in a register maintained in Form No.7

### Rules under sub-section (2) of section 12

#### 17. Disposal of trade wastes and effluents.

- (1) In the case of a factory where the drainage system is proposed to be connected to the public sewerage system, prior approval of the arrangements made shall be obtained from local authority.
- (2) In the case of a factory situated in a place where no public sewerage system, exists, prior approval of the arrangements made for proposal of trade wastes and effluents shall be obtained from the Public Health Authorities or The Kerala State Pollution Control Board appointed under the Water (Prevention and Control of Pollution) Act, 1974, and the Air (Prevention and Control of Pollution) Act, 1981.
- (3) Rubbish filth or debris shall not be allowed to accumulate or to remain in any part of the premises in a factory for more than 24 hours and shall be disposed in a manner approved by the Public Health Authorities. All filth and other decomposing matter shall be kept in covered receptacles.
- (4) Wastes and effluents resulting from factory or industrial processes and which may be of the nature of injurious or obnoxious substances, shall not be disposed of without being suitably treated to render them unobjectionable to the satisfaction of the Public Health Authorities and of the Inspector of Factories. If any objection is raised by the Occupier or the Manager of a factory or if any difference of opinion arises between the Public Health Authorities and the Inspector with regard to treatment of wastes and other effluents under this rule, the matter shall be referred to the Chief Inspector of Factories whose decision shall be final.

- (5) All open drains carrying waste or salvage water or sewerage shall be constructed of masonry or other impermeable material and shall be regularly flushed at least twice daily and, where possible, connected with some recognized drainage line.

### Rule under Section 13

#### 17A. Limits of temperature and air movement.

- (1) In any factory the maximum wet-bulb temperature of a air in a work room at a height of 1.5 metre above the floor level shall not exceed 30<sup>0</sup>C and adequate air movement of at least 30 metre per minute shall be provided; and in relation to dry-bulb temperature, the wet-bulb temperature in the workroom at the said height shall not exceed that shown in the schedule annexed here to.

#### Schedule

Dry – bulb temperature	Wet - bulb temperature
30 <sup>0</sup> C to 34 <sup>0</sup> C	29 <sup>0</sup> C
35 <sup>0</sup> C to 39 <sup>0</sup> C	28.5 <sup>0</sup> C
40 <sup>0</sup> C to 44 <sup>0</sup> C	28 <sup>0</sup> C
45 <sup>0</sup> C to 47 <sup>0</sup> C	27.5 <sup>0</sup> C

Provided that if the temperature measured with a thermometer inserted in a hollow globe of 15centimetres diameter coated mat black outside and kept in the environment for not less than 20 minutes exceeds the dry-bulb temperature of air, the temperature so recorded by the globe thermometer shall be taken in place of the dry-bulb temperature;

Provided further that when the reading of the wet-bulb temperature outside in the shade exceeds 27 degree centigrade, the value of the wet-bulb temperature allowed in the schedule for given dry-bulb temperature may be correspondingly exceeded to the same extent.

Provided further that this requirement shall not apply in respect or factories covered by section 15 and in respect of factories where nature of work carried on involves production of excessively high temperature referred to in clause (ii) of sub-section (1) to which workers are exposed for short periods of time not exceeding one hour followed by an interval of sufficient duration in thermal environments not exceeding those otherwise laid down in this rule.

Provided further that the Chief Inspector, having due regard to the health of the workers, may in special and exceptional circumstances, by an order in writing exempt any factory or part of a factory from the foregoing requirement, in so far as restricting the thermal conditions within the limits laid down in the schedule are concerned, to the extent that he may consider necessary subject to such conditions as he may specify.

#### (2) Provisions of thermometers.

- (a) If it appears to the Inspector that in any factory, the temperature of air in work room is sufficiently high and is likely to exceed the limits prescribed in sub-rule (1) he may serve on the manager of the factory an order requiring him to provide sufficient number of whirling hygrometers or any other type of hygrometers and direct that the dry-bulb and wet-bulb readings of each in such workroom shall be recorded at such position as approved by the Inspector twice

during each working shift by a person especially nominated for the purpose by the manager and approved by the Inspector .

- (b) If the inspector has reason to believe that a substantial amount of heat is added inside the environment of a workroom by radiation from walls, roof or other solid surroundings, he may serve on the manager on the factory an order requiring him to provide one or more globe thermometer referred to in the first proviso in sub rule (1) and further requiring him to place the globe thermometer at a place specified by him and keep a record of the temperature in a suitable register.

**(3) Ventilation.**

- (a) In every factory the amount of ventilation opening in a workroom below the eaves shall except where mechanical means of ventilation as required by clause (b) below are provided, be of an aggregate area of not less than 15% of the floor area and so located as to afford a continued supply of fresh air;

Provided that the Chief Inspector may relax the requirements regarding the amount of ventilating openings if he is satisfied that having regard to the location of the factory, orientation of the workroom, prevailing winds, roof height and the nature of a manufacturing process carried on, sufficient supply of fresh air into the work is afforded during most part of the working time:

Provided further that these requirements shall not apply in respect of workrooms of factories:-

- (i) covered by section 15; or
  - (ii) in which temperature and humidity are controlled by refrigeration.
- (b) Where in any factory owing to special circumstances such a situation with respect to adjacent buildings and height of the building with respect to floor space, the requirements of ventilation opening under clause (a) of this sub-rule cannot be complied with or in the opinion of the Inspector the temperature of air in a workroom is sufficiently high and is likely to exceed the limits prescribed in sub-rule (1) he may serve on the manager of the factory an order requiring him to provide additional ventilation either by means of roof ventilation or by mechanical means.
- (c) The amount of fresh air supplied by mechanical means of ventilation in an hour shall be equivalent to at least six times the cubic capacity of the workroom and shall be distributed eventually throughout the workroom without dead air pockets or undue draughts caused by high inlet velocities.
- (d) In regions where in summer (15<sup>th</sup> March-15<sup>th</sup> July) dry-bulb temperatures of outside air in the shade during most part of the day exceed 35 degree centigrade and simultaneous wet-bulb temperatures are 25 degree centigrade or below and in the opinion of the Inspector the manufacturing process carried on in workroom of a factory permits thermal environments with relative humidity of 50% or more, the Inspector may serve on the manager of the factory an order to have sufficient supply of outside air for ventilation cooled by passing it through water sprays either by means of unit type of evaporative air coolers (Desert coolers) or, where supply of outside air is provided by mechanical means through ducts in a plenum system, by means of central air washing plants.

**Rules 18 to 28 under sub-section (1) of section 15****18. When artificial humidification not allowed.**

There shall be no artificial humidification in any room of a cotton spinning or weaving factory :

- (a) by the use of steam during any period when the dry bulb temperature of that room exceeds 29.5 degrees ;
- (b) at any time when the wet bulb reading of the hygrometer is higher than that specified in the following Schedule in relation to the dry bulb reading of the hygrometer at that time, or as regards a dry bulb reading intermediate between any two dry bulb readings indicated consecutively in the Schedule when the dry bulb reading does not exceed the wet bulb reading to the extent indicated in relation to the lower of these two dry bulb readings

**Schedule**

Dry bulb °C	Wet bulb °C	Dry bulb °C	Wet bulb °C	Dry bulb °C	Wet bulb °C
15.5	14.5	25.0	24.0	34.5	30.0
16.0	15.0	25.5	24.5	35.0	30.5
16.5	15.5	26.0	25.0	35.5	31.0
17.0	16.0	26.5	25.5	36.0	31.0
18.0	17.0	27.0	26.0	37.0	31.5
18.5	17.5	28.0	27.0	37.5	32.0
19.0	18.0	28.5	27.0	38.0	32.0
19.5	18.5	29.0	27.5	38.5	32.5
20.0	19.0	29.5	28.0	39.0	32.5
20.5	19.5	30.0	28.0	39.5	32.5
21.0	20.0	30.5	28.5	40.0	32.5
21.5	20.5	31.0	28.5	40.5	33.0
22.0	21.0	31.5	29.0	41.0	33.0
23.0	22.0	32.0	29.0	41.5	33.0
23.5	22.5	33.0	29.5	42.0	33.0
24.0	23.0	33.5	30.0	43.0	33.5
24.5	23.5	34.0	30.0	43.5	33.5

Provided however, that clause (b) shall not apply when the difference between the wet bulb temperature as indicated by the hygrometer in the department concerned and the wet bulb temperature taken with a hygrometer outside in the shade is less than 2 degree.

**19. Provision of hygrometer.**

In all departments of cotton spinning and weaving mills wherein artificial humidification is adopted, hygrometers shall be provided and maintained in such positions as are approved by the Inspector. The number of hygrometer shall be regulated according to the following scale:

- (a) Weaving department: One hygrometer for departments with less than 500 looms, and one additional hygrometer for every 500 or part of 500 looms in excess of 500.
- (b) Other departments : One hygrometer for each room of less than 8,500 cubic metres capacity and one extra hygrometer for each 5,670 cubic metres or part of, in excess of this.

- (c) One additional hygrometer shall be provided and maintained outside each cotton spinning and weaving factory wherein artificial humidification is adopted and in a position approved, by the Inspector, for taking hygrometer shade reading.

**20. Exemption from maintenance of hygrometer.**

When the Inspector is satisfied that the limits of humidity allowed by the Schedule to Rule 18 are never exceeded, he may for any department other than the weaving department, grant exemption from the maintenance of the hygrometer. The Inspector shall record such exemption in writing.

**21. Copy of Schedule to Rule 18 to be affixed near every hygrometer.**

A legible copy of the Schedule to Rule 18 shall be affixed near each hygrometer.

**22. Temperature to be recorded at each hygrometer.**

At each hygrometer maintained in accordance with Rule 19, correct wet and dry bulb temperatures shall be recorded thrice daily during each working day by competent persons nominated by the Manager and approved by the Inspector. The temperature shall be taken between 7.A.M. and 9.A.M., between 11 A.M. and 2.P.M. (but not in the rest interval) and between 4 P.M. and 5.30 P.M. In exceptional circumstances such additional readings and between such hours, as the Inspector may specify, shall be taken. The temperatures shall be entered in a Humidity Register in the prescribed Form No.6, maintained, in the factory. At the end of each month the persons who have taken the reading shall sign the Register and certify the correctness of the entries. The Register shall always be available for inspection by the Inspector.

**23. Specifications of hygrometer.-**

- (1) Each hygrometer shall comprise two mercurial thermometers of wet bulb and dry bulb of similar construction, and equal in dimensions, scale and divisions of scale. They shall be mounted on a frame with a suitable reservoir containing water.
- (2) The wet bulb shall closely with a single layer of muslin kept wet by means of a wick attached to it and dropping into the water in the reservoir. The muslin covering and the wick shall be suitable for the purpose, clean and free size or grease.
- (3) No part of the wet-bulb shall be within 76mm from the dry-bulb or less than 25mm from the surface of the water in the reservoir and the water reservoir shall be below it, on the side of it a way from the dry-bulb.
- (4) The bulb shall be spherical and of suitable dimensions and shall be freely exposed on all sides to the air of the room.
- (5) The bores of the stems shall be such that the position of the top of the mercury column shall be easily distinguishable at a distance of 60cms.
- (6) Each thermometers shall be graduated in such a way that accurate readings can be taken between 10 and 50 degrees.
- (7) Every degree from 10 degrees upto 50 degrees shall be clearly marked by horizontal lines on the stem, each, fifth degree shall be marked by longer marks than the intermediate degree and the temperature marked opposite each fifth degree, that is 15, 20, 25, 30, 35, 40, 45, 50.
- (8) The marking as above shall be accurate, that is to say, at no temperature between 10 and 50 degrees the indicator readings shall be in error by more than one ninth of a degree.”
- (9) A distinctive number shall be indelibly marked by the thermometer.



- (10) The accuracy of each thermometer shall be certified by the National Physical Laboratory, London, or some competent authority appointed by the Chief Inspector and such certificate shall be attached to the Humidity Register.

**24. Thermometers to be maintained in efficient order.**

Each thermometer shall be maintained at all times, during the period of employment in efficient working order, so as to give accurate indications in particular-

- (a) the wick and the muslin covering of the wet bulb shall be renewed once a week ;
- (b) the reservoir shall be filled with water which shall be completely renewed once a day. The Chief Inspector may direct the use of distilled water or pure rain water in any particular mill or mills in certain localities;
- (c) no water shall be applied directly to the wick or covering during the period of employment.

**25. An inaccurate thermometer not to be used without fresh certificate.**

If an Inspector gives notice in writing that a thermometer is not accurate it shall not, after one month from the date of such notice be deemed to be accurate unless and until it has been re-examined as prescribed and a fresh certificate obtained which certificate shall be kept attached to the Humidity Register.

**26. Hygrometer not be affixed to wall, etc., unless protected by wood.**

- (1) No hygrometer shall be fixed to a wall, pillar or other surface unless protected there from by wood or other non-conducting material at least 12mm in thickness and distant at least 25 mm from the bulb of each thermometer.
- (2) No hygrometer shall be fixed at a height of more than 170cm from the floor to the top of thermometer stem or in the direct draughts from a fan, window or ventilating opening.

**27. No reading to be taken within 15 minutes of renewal of water.**

No reading shall be taken for record on any hygrometer within 15 minutes of the renewal of water in the reservoir.

**28. How to introduce steam for humidification.**

In any room in which steam pipes are used for the introduction of steam for the purpose of artificial humidification of the air the following provision shall apply-

- (a) The diameter of such pipes shall not exceed 50 mm and in the case of pipes installed after the 1<sup>st</sup> day of January 1957 the diameter shall not exceed 25mm.
- (b) Such pipes shall be as short as is reasonably practicable.
- (c) All hangers supporting such pipes shall be separated from the bare pipes by an efficient insulation not less than half an 12 mm in thickness.
- (d) No uncovered jet from such pipe shall project more than 115mm beyond the outer surface of any cover.
- (e) The steam pressure shall be as low as practicable and shall not exceed 5Kg/cm<sup>2</sup>
- (f) The pipe employed for the introduction of steam into the air in a department shall be effectively covered with such non-conducting material, as may be approved by the Inspector in order to minimize the amount of heat radiated by them into the department.

**29. Deleted****Rules 30 to 33 under sub-section (4) 17****30. Lighting of interior parts.**

(1) The general illumination over those interior parts of a factory where persons are regularly employed shall be not less than 65 lux candles measured in the horizontal plane at a level of 90 centimeters above the floor.

Provided that in any such parts in which the mounting height of the light source for general illumination necessarily exceeds 760 centimeters measured from the floor or where the structure of the room or the position or construction of the fixed machinery or plant prevents the uniform attainment of this standard, the general illumination at the said level shall not be less than 22 lux candle and where work is actually being done the illumination shall be not less than 65 lux candles.

(2) The illumination over all other interior parts of the factory over which persons employed pass shall, when and where a person is passing, be no less than 5 lux candles at floor level.

(3) The standard specified in this Rule shall be without prejudice to the provision of any additional illumination required to render the lighting sufficient and suitable for the nature of the work.

**31. Prevention of glare:**

(1) Where any source of artificial light in the factory is less than 490 centimeters above floor level, no part of the light source or of the lighting fitting having brightness greater than 1.5 candle/sq.cm. shall be visible to persons whilst normally employed within 30 metres of the source, except where angle of elevation from the eye to the source or part of the fitting as the case may be exceeds  $20^{\circ}$ .

(2) Any local light, that is to say, an artificial light designed to illuminate particularly the area or part of the area of work of a single operative or small group of operatives working near each other, shall be provided with a suitable shade of opaque material to prevent glare or with other effective means by which the light source is completely screened from the eyes of every person employed at a normal working place or shall be so placed that no such person is exposed to glare there from.

**32. Power of Chief Inspector to exempt.**

Where the Chief Inspector is satisfied in respect of any particular factory or part thereof or in respect of any description of work room or process than any requirement of Rules 30 and 31 is inappropriate or is not reasonably practicable he may by order in writing exempt the factory or part thereof of description or workroom or process from such requirements to such extent and subject to such conditions as he may specify.

**33. omitted****Rules 34 to 39 under sub-section 4 of Section 18****34. Quantity of drinking water.**

The quantity of drinking water to be provided for the workers in every factory shall be at least 5 litres a day per workers employed in the factory and such drinking water shall be readily available at all times during working hours :

Provided that if the Chief Inspector is of the opinion that the arrangements made in any factory would ensure adequate supply of water, he may make a relaxation in this rule in respect of that factory with such conditions as he may deem necessary.

### 35. Source of supply.

The water provided for drinking shall be supplied.-

- (a) from a public water supply system, or
- (b) from any other source approved in writing by the Health Officer.

### 36. Means of supply.

If drinking water is not supplied directly from taps either connected with public water supply system or any other water supply system of the factory approved by the health office, it shall be kept in suitable vessels, receptacles or tanks fitted with taps and having dust proof covers placed on raised stands or platforms in shade and having suitable arrangement of drainage to carry away the split water. Such vessels or receptacles and tanks shall be kept clean and the water renewed at least once every day. All practicable measures shall be taken to endure that the water is free from contamination.

### 37. Cleanliness of well or reservoir.

- (1) Drinking water shall not be supplied from any open well or reservoir unless it is so constructed, situated, protected and maintained as to be free from the possibility of pollution by chemical or bacterial and extraneous impurities.
- (2) Where drinking water is supplied from such well or reservoir the water in it shall be sterilized once a week or more frequently if the Inspector by written order so requires, and the date on which sterilizing is carried out shall be recorded.

Provided that this requirement shall not apply to any such well or reservoir if the water therein is filtered and treated to the satisfaction of the Health Office, before it is supplied for consumption.

### 38. Report from Health Officer.

The inspector may be order in writing direct the Manager to obtain at such time or at such intervals as he may direct, a report from the Health Officer as to be fitness for human consumption of the water supplied to the workers, and in every case to submit to the Inspector a copy of such report as soon as it is received from the Health Officer.

### 39. Cooling of water.

In every factory wherein more than two hundred and fifty workers are ordinarily employed,

- (a) the drinking water supplied to the workers shall from the 1<sup>st</sup> of March to the 15<sup>th</sup> June every year, be cooled by ice or other effective method;

Provided that if ice is placed in the drinking water, the ice shall be clean and whole some and shall be obtained only from a source approved in writing by the Health Officer.

- (b) the cooled drinking water shall be supplied in every canteen, lunch-room and the rest room and also at conveniently accessible points throughout the factory which for the purpose of these rules shall be called "Water Centres".
- (c) the water centers shall be sheltered from the weather and adequately drained ;
- (d) the number of water centers to be provided shall be one "center" for every 150 persons employed at any one time in the factory;

Provided that in the case of a factory where the number of person employed exceeds 500 it shall be sufficient if there is one such "center" as aforesaid for every 150 persons up to the first 500 and one for every 500 persons thereafter ;

Provided further that the distance from the place of work of any worker shall be not be more than 50 metres from the nearest water centre or any distance as may be specified by the Inspector.

- (e) every water center shall be maintained in a clean and orderly condition;
- (f) The means of supply of drinking water shall be either directly through taps connected to water coolers or any other system of cooling water, or by means of vessels, receptacles or tanks fitted with taps and having dust proof covers and placed on raised stands or platform in shade, and having suitable arrangements of drainage to carry away the spilt water. Such vessels, receptacles or tank shall be kept clean and the water renewed at least once in every day.

Clause (f) shall not apply to any factory in which suitable mechanically operated drinking water refrigerating units are installed to the satisfaction of the Chief Inspector.

#### **Rules 40 to 49 under sub-section (3) of section 19**

#### **40. Latrine Accommodation.**

Latrine Accommodation shall be provided in every factory on the following scale:-

- (a) where females are employed, there shall be at least one latrine for every 25 females;
- (b) where males are employed there shall be at least one latrine for every 25 males; provided that, where the number of males employed exceeds 100, it shall be sufficient if there is one latrine for every 25 males up to the first 100, and one for every 50 thereafter.

In calculating the number of latrines required under this rule, any odd number of workers less than 25 or 50, as the case may be, shall be reckoned as 25 or 50.

#### **41. Latrines to conform to Public Health requirements.**

Latrine, other than those connected with efficient water borne sewage system, shall comply with the requirements of Public Health Authorities.

#### **42. Privacy of latrines.**

Every latrine shall be under cover and so partitioned off as to secure privacy, and shall have a proper door and fastenings.

#### **43. Sign boards to be displayed.**

Where workers of both sexes are employed there shall be displayed outside each latrine block, a notice in the language understood by the majority of the workers "For Men Only" or "For Women Only" as the case may be. The notice shall also bear the figure of a man or of a woman as the case may be.

#### **44. Urinal accommodation.**

Urinal accommodation shall be provided for the use of male workers and shall not be less than 2 feet in length for every 50 males; provided that where the number of males employed exceeds 500, it shall be sufficient if there is one urinal for every 50 males up to the first 500 employed, and one for every 100 thereafter.

In calculating the urinal accommodation required under this rule any odd number of workers less than 50 or 100, as the case may be, shall be reckoned as 50 or 100.

#### **45. Urinals to conform to Public Health requirements.**

Urinals other than those connected with efficient water borne sewage system and urinal in a factory where in more than two hundred and fifty workers are ordinarily employed shall comply with the requirements of the Public Health Authorities.

**46. Certain latrines and urinals to be connected to sewerage system.**

When any general system of underground sewerage with an assured water supply for any particular locality is provided in a municipality, all latrines and urinals of a factory situated in such locality shall, if the factory is situated within 100 feet of an existing sewer, be connected with that sewerage system.

**47. White-washing, Colour-washing or latrines and urinals.**

The walls, ceilings and portions of every latrine shall be white-washed or colour-washed and the white-washing or colour-washing shall be repeated at least once in every period of four months. The dates on which the white-washing or colour-washing is carried out shall be entered in the prescribed Register (Form No.7):

Provided that this rule shall not apply to latrines and urinals, the walls, ceilings or partitions of which are laid in glazed tiles or otherwise finished to provide a smooth, polished impervious surface and that they are washed with suitable detergents and disinfectants at least once in every period of four months.

**48. Construction and maintenance of drains.**

All drains carrying waste or sullage water shall be constructed in masonry or other impermeable material and shall be regularly flushed and the effluent disposed of by connecting such drains with a suitable drainage line:

Provided that where there is no such drainage line, the effluent shall be deodorized and rendered innocuous and then disposed of in a suitable manner to the satisfaction of the Health Officer.

**49. Water in latrines.**

- (1) Where piped water supply is available a sufficient number of water taps, conveniently accessible shall be provided in or near such latrine accommodation.
- (2) When there is no continuous supply of water, water cisterns with cans should be provided for washing purposes.

**Rules 50 to 52 under sub-section (2) of Section 20****50. Number and location of spittoons.**

The number and location of the spittoons to be provided shall be to the satisfaction of the Inspector.

**51. Type of spittoons.**

The spittoons shall be of either of the following types:-

- (a) a galvanized iron container with a conical funnel shaped cover. A layer of suitable disinfectant liquid shall always be maintained in the container; or
- (b) a container filled with dry, clean sand and covered with a layer of bleaching powder; or
- (c) any other type approved by the Chief Inspector.

**52. Cleaning of spittoons.**

The spittoons mentioned in Clause (a) or Rule 51 shall be emptied, cleaned and disinfected at least once every day; and the spittoons mentioned in Clause (b) of Rule 51 shall be cleaned by scrapping out the top layer of sand often and necessary or at least once every day.

## CHAPTER IV SAFETY

### Rules 53 to 69 under sub-section (2) of Section 21

**53. Any guard specified to be deemed to be fencing.**

Any guard specified in the rules in this Chapter for the protection of workers from danger shall be deemed to be fencing, required by Section 21 of the Act.

**54. Certain parts of machinery to be fenced.**

The following parts of machinery shall if in motion and within reach, be securely fenced or protected. All shafts whether vertical or horizontal, wheels including balancing and momentum wheels besides the parts mentioned in sub-section (1) of Section 21 of the Act, drums or pulleys (including fast and loose pulleys), couplings, collard, clutches, toothed wheels, straps whether horizontal, inclined or vertical bands, belts, chains, ropes and wires or other devices by which any machine or appliance receives its motion, also all projecting set screws, keys, nuts, or bolts, or revolving parts of machinery and the underside of all heavy overhead main driving belts or ropes if there is any possibility of any person having to pass under them.

**Explanation.-** The fences and other devices for protection shall be constructed and designed as to render it impossible for any person to pass between them and moving part and also in such a manner as to give protection to a person oiling, cleaning or otherwise attending to machinery and to all persons who may be in the neighborhood of a moving part while it is in motion.

**Exception.-** Where in any case any of the parts mentioned in this rule are not in the opinion of the Inspector, a source of danger to any person employed in the factory he shall at the request of the occupier or manager of the factory give such occupier or manager certificate in writing clearly specifying the parts which are not a source of danger. This rule shall not apply in respect of any parts specified in such certificate. The Chief Inspector may revise or cancel such certificate at any time.

**55. Certain parts of machine tools to be fenced.**

The following parts of machine shall be secured fenced.

The back gears and change wheels of lathes; the back gear and bevel gearing of drilling machines; and the gear and wheels of planning, shaping, slotting and milling machine which are within reach.

**56. Emery and abrasive wheels to be provided with an iron cover guard.**

All emery wheels shall be provided with strong guards and the tools rests shall be kept close to the wheels. The guard shall be made of wrought iron not less than  $\frac{1}{4}$  inch thick or of steel plate not less than  $\frac{1}{16}$  inch thick.

**57. The floor round every machine to be in good repair and non-slippery.**

The floor surrounding every machine shall be level and shall be maintained in good repair and free from chips, grease, oil or other material that they may make it slippery.

**58. Important pulleys to be provided with belt hangers.**

As far as practicable all important pulleys shall be provided with belt hangers.

**59. Driving straps of fast and loose pulleys to have suitable string gear.**

Suitable string gear shall be provided and used to move driving straps on all fast and loose pulleys.

**60. Lubrication of bearing, etc., of running belts to be done only by experience or trained persons.**

Lubrication of bearing or gear wheels or replacing or adjusting of belts shall be done only by an experience and specially trained person.

**61. Service Platforms to be provided for overhead shafting.**

Service platform or gangways shall be provided for overhead shafting where the shafting is over machinery or where it is impracticable to fit a ladder with hooks on to the shaft and if so required by the Inspector, shall be securely fenced with guard rails and toe boards.

**62. Machinery in motion not to be cleaned with cotton wastes, etc., held in hand.**

No machinery in motion shall be cleaned with cotton waste, rags or similar materials held in the hand.

**63. Shafting ladders.**

Every shafting ladder shall be fitted either with hooks or with some effective non-skid device.

**64. Certain workers to be supplied with certain clothing free of charge.**

Male adult workers whose names are entered in the Register prescribed under section 22(1) shall be supplied by the occupier, with a tight head dress, a tight fitting shirt or banyan and a tight fitted pair of shorts free of cost. At least two such sets shall be supplied every year so that workers concerned may always be dressed in tight clothing kept as clean as possible consistent with their duties in the factory.

**65. Belts, etc., of machinery requiring attention when in motion to have safe and convenient access.**

Safe and convenient access shall be provided to all belts, bearings, of shaft and other parts of machinery in a factory which may require attention while machinery is in motion.

**66. Additional weights not to be placed on safety valve of any boiler except with written sanction.**

No additional weight shall be placed on the safety valve of any boiler except under the written authority of the Chief Boiler Inspector appointed under the Boilers Act.

**67. Gear wheels of cashew roasting drums to be covered.**

The gear wheels of all cashew roasting drums shall be adequately covered by guards.

**68. Display of pictorial safety posters.**

Pictorial safety posters for the prevention of accidents approved by the Chief Inspector shall be displayed at conspicuous places in every room of the factory in which machinery is in use.

**69. The Chief Inspector's decision in regard to measures to be taken for the protection of machinery final.**

If any question arises as whether any measure taken or required to be taken in accordance with the rules in this chapter is efficient, effective or practicable, the question shall be referred to the Chief Inspector whose decision shall be final.

**Rule under sub-section (1) of Section 22**

**69A.** The register of specially trained workers shall be in Form No.34.

**Rule under sub-section (2) of Section 23****70. Employment of young persons on dangerous machines.**

The machines specified in Sections 28, 29, 30 and the machines mentioned below shall be deemed to be of such dangerous character that young person's shall not work at them unless the provisions of Section 23(1) are complied with :

- Power presses other than hydraulic presses;
- Milling machines used in the metal trades;
- Guillotine machines;
- Circular saws;
- Platen printing machines

**Rule under sub-section (3) of section 26****71. Part of machines deemed to be guarded by the makers.**

The following parts of machine will be deemed to be machinery to be guarded by the makers for the purpose of Section 26(1) of the Act.

1. Back gears, change wheels and cog drives of lathes.
2. Back gears and bevel gearing of drilling machines.
3. Gear wheels and bevel drives of planning, shaping, slotting and milling machines.
4. All cog and bevel drives of oil expellers.

**Rule under Section 28****72. (1) Hoists and lifts.**

A register shall be maintained to record particulars of examination of Hoists of Lifts and shall give particulars as shown in Form No. 41.

**Exemption under sub-section (4) of Section 28****(2) Exemption of certain hoists and lifts.**

In pursuance of the provisions of sub-section (4) of section 28 of the Act in respect of any class or description of hoists or lifts specified in the first column of the following Schedule the requirements of Section 28 specified in the second column of the said schedule and set opposite to that class or description of hoist or lift shall not apply.

**Schedule**

<i>Class or description of hoist of lift</i>	<i>Requirements which shall not apply</i>
Hoists or lifts mainly used for raising materials for charging blast furnaces or lime kilns	Sub-section (1) (b) in so far as requires a gate at the bottom landing; Sub-section(1) (d) Sub-section(1) (e)
Hoists not connected with mechanical power and which are not used for carrying persons	Sub-section(1) (d) in so far as It requires the hoist-way or lift way enclosure to be so constructed as to prevent any person or thing from being trapped between any part of the hoist or lift and any fixed structured moving part ; Sub-section (1) (e).

**Rules under sub-section (2) of Section 29****73. Inspection of lifting machines, chains ropes and lifting tackles.**

- (1) No lifting machine and no chain, rope of lifting tackle, except a fibre rope or a fibre rope sling shall be taken into use in any factory for the first time in that factory unless it has been tested and all parts have been thoroughly examined by a competent person and a certificate of such a test and examination specifying the safe working load or loads and signed by the person making the test and the examination has been obtained and is kept available for inspection.



- (2) (a) Every jib- crane so constructed that the safe working load may be varied by the raising or lowering of the jib, shall have attached thereto either an automatic indicator of safe working loads or an automatic jib angle indicator and a table indicating the safe working loads at corresponding inclinations of the jib or corresponding radii of the load.
- (b) A table showing the safe working loads of every kind and size of chain, rope or lifting tackle in use, and in the case of a multiple sling, the safe working loads at different angles of the legs, shall be posted in the store in which the chains, ropes or lifting tackles are kept and in prominent position on the premises, and no chain, rope or lifting shall not apply in respect of any lifting tackle not shown in the table shall be used. The foregoing provisions of this paragraph shall not apply in respect of any lifting tackle if the safe working load thereof or in the case of a multiple sling, the safe working load at different angles of legs is plainly marked on it.
- (3) Particulars of register to be maintained under clause (a) (iii) of sub-section (1) of Section 29 of the Act shall be:
- (i) Name of occupier of factory.
  - (ii) Address of the factory
  - (iii) Distinguishing number or mark, if any, and description sufficient to identify the lifting machine, chain, rope, or the lifting tackle.
  - (iv) Date when the lifting machine, chain, rope or lifting tackle was first taken into use in factory.
  - (v) Date and number of the certificate relating to any test and examination made under sub-rule (1) and (7) together with the name and address of the person who issued the certificate.
  - (vi) Date of each periodical thorough examination made under clause (a) (iii) of sub-section (1) of section 29 of the Act and sub-rule (6) and by whom it was carried out.
  - (vii) Date of annealing or other heat treatment of the chain and other lifting tackle made under sub-rule (5) and by whom it was carried out.
  - (viii) Particulars of any defects affecting the safe working load found at any such thorough examination or after annealing and of the steps taken to remedy such defects. The register shall be kept readily available for inspection.
- (4) All rails on which a traveling crane moves and every track on which the carriage of transporter or run way moves, shall be of proper size and adequate strength and having an even running surface and every such rail or track shall be properly laid, adequately supported and properly maintained.
- (4)A (i) To provide access to rail tracks of overhead traveling cranes suitable passageways of at least 50cm. Width with toe-boards and double hand rails 90cm. High shall be provided along side, and clear of the rail tracks of overhead traveling cranes, such that no moving part of the crane can strike persons on the ways, and the passage way shall be at a lower level than the crane track itself. Safe access ladders shall be provided at suitable intervals to afford access to these passage-ways, and from passage-ways to the rails tracks.
- (ii) The Chief Inspector of Factories may, for reasons to be specified in writing exempt any factory in respect of any overhead traveling crane from the operation of any provision of clause (I) subject to such conditions as he may speedy.
- (5) All chains and lifting tackle, except a rope sling shall, unless they have been subject to such other heat treatment as may be approved by Chief Inspector of Factories be effectively annealed under the supervision of a competent person at the following intervals.

- (i) All chains, slings, rings hooks, shackles and swivels used in connection with molten made or molten slang or when they are made of half inch bar or smaller, once at least in every six months.
- (ii) All other chains, rings hooks, shackles and swivels in general use, once, at least, in every twelve months;

Provided that chains and lifting tackle not in frequent use shall, subject to the Chief Inspector's approval be annealed only when necessary. Particulars of such annealing shall be entered in a register prescribed under sub-rule (3).

- (6) Nothing in the forgoing sub-rule (5) shall apply to the following classes of chains, and lifting tackles:-
  - (i.) Chains made of malleable cast iron.
  - (ii.) Plate link chains
  - (iii.) Chains, rings, hooks, shackles and swivels made for steel or of any nonferrous metal
  - (iv.) Pitched chains working on sprocket or pocketed wheels.
  - (v.) Rings, hooks, shackles and swivels permanently attached to pitched chains, pulley blocks or weighing machines.
  - (vi.) Hooks and swivels having screw threaded parts of ball bearing or other case hardened parts.
  - (vii.) Socket shackles secured to wire ropes by white metal capping.
  - (viii.) Bordeaux connections.
  - (ix.) Such chains and lifting tackle shall be thoroughly examined by a competent person once at least in every twelve months, and particulars entered in the register kept in accordance with sub-rule (3).
- (7) All lifting machines, chains, ropes and lifting tackle, except a fiber rope or fibre rope sling, which have been lengthened, altered or repaired by welding or otherwise, shall, before being again taken into use be adequately, re-tested and re-examined by a competent person and certificate of such test and examination be obtained, and particulars entered in the register kept in accordance with sub-rule (3).
- (8) No person under 18 years of age and no person who is not sufficiently competent and reliable shall be employed as driver of a lifting machine whether driven by mechanical power or otherwise or to give signals to a drive.
- (9) Where the Chief Inspector is satisfied that in the factory due to shut down or for any other reasons it is not practicable to maintain a minimum distance of twenty feet between the persons employed or working on or near the wheel track of a traveling crane and the crane, he may on the request of the manager, reduce the distance to such extent as he may consider necessary and also prescribe further precautions indicating appointment of suitable number of supervisors to ensure the safety of the persons while they are employed or working on or near the track.

#### **Rule under sub-section (2) and (3) of Section 31**

#### **74. Pressure Vessels or Plant.-**

**(1) Interpretation.** - In this rule.

- (a) 'design pressure' means the maximum pressure that a pressure vessel or plant is designed to withstand safely when operating normally.

- (b) 'maximum permissible working pressure' is the maximum pressure at which a pressure vessel or plant is permitted to be operated or used under this rule and is determined by the technical requirements of the process;
- (c) Omitted
- (d) 'Pressure Vessel' means vessels that may be used for containing, storing, distributing, transferring, distilling, processing or otherwise handling any gas, vapor or liquid under pressure greater than the atmospheric pressure and includes any pipe line fitting or other equipment attached thereto for used on connection therewith; and
- (e) Omitted

**(2) Exceptions.** – Nothing in this rule shall apply to-

- (a) Vessels made of ferrous materials having an internal operating pressure not exceeding 1 Kg/cms<sup>2</sup> (15 lbs/Sq.inch);
- (b) Steam boilers, stem and feed pipes and their fittings coming under the preview of Indian Boilers Act, 1923 (V of 1923);
- (c) metal bottles or cylinders used for storage or transport of compressed gases or liquefied or dissolved gases under pressure covered by the Gas Cylinder Rules, 1940 framed under the India Explosive Act, 1884 (IV of 1884).
- (d) vessels in which internal pressure is due solely to the static head of liquid;
- (e) vessels with a nominal water capacity not exceeding 500 liters connected in a water-pumping system containing air that is compressed to serve as a cushion;
- (f) vessels for nuclear energy application;
- (g) Refrigeration plant having a capacity of 3 tones or less or refrigeration in 24 hours; and
- (h) working cylinders of steam engines or prime movers, feed pumps and steam traps; turbine casings; compressors cylinders; steam separators or dyers; steam strainers; steam de-super heaters; oil separators; air receivers for fire sprinkler installation; air receivers or monotype machine provided the maximum working pressure of the air receiver does not exceed 1.33 kgf/cm<sup>2</sup> (20lb/sq.inc.) and the capacity 84.95 liters (3cu.ft.); air receivers of electrical circuit breakers; air receivers of electrical relays; air vessels on pumps, pipe coils accessories of instrument and appliance, such as cylinders and piston assemblies used for operating relays and inter-locking type of guards; vessels with liquids subjected to static head only; and hydraulically operating cylinders other than any cylinder communicating with an air and accumulator.

**(3) Design and Construction:**

Every pressure vessel or plant used in factory.

- (a) shall be properly designed on sound engineering practice;
- (b) shall be of good construction, sound material, adequate strength and free from any patent defects; and
- (c) shall be properly maintained in a safe condition;

Provide that the pressure vessel or plan in respect of the design and construction of which there is an Indian standard or standard of the country of manufacture or any other law or regulation in force, shall be designed and constructed in accordance with the said standard, law or regulation, as the case maybe, and certificate there of shall be obtained from the manufacturer or from the competent person which shall be kept and produced on demand by an Inspector.

**(4) Safety Devices.-**

Every pressure vessel shall be fitted with -

- (a) a suitable safety valve or other effective pressure relieving device of adequate capacity to ensure that the maximum permissible working pressure of the pressure vessel shall not be exceeded. It shall be set to operate at a pressure not exceeding the maximum permissible working pressure and when more than one protective device is provided, only one of the devices need be set to operate at the maximum permissible working pressure and the additional device shall be set to discharge at a pressure not more than 5% in excess of the maximum permissible working pressure.
- (b) a suitable pressure gauge with a dial range not less than 1 times the maximum permissible working pressure, easily visible and designed to show at all time the correct internal pressure and marked with a prominent red mark at the maximum permissible working pressure of the pressure vessel;
- (c) a suitable nipple and globe valve connected for the exclusive purposes of attaching a test pressure gauge for checking the accuracy of the pressure gauge referred to in clause (b) of this sub-room;
- (d) a suitable stop valve or valves by which the pressure vessel maybe isolated from other pressure vessels or plant or source of supply of pressure. Such a stop valve or valves shall be located as close to the pressure vessel as possible and shall be easily accessible; and
- (e) a suitable drain cock or valve at the lowest part of the pressure vessel for the discharge of the liquid or other substance that may collect in the pressure vessel;  
Provided that it shall be sufficient for the purposes of this sub-room if the safety valve or pressure relieving device, the pressure gauge and the stop valve are mounted on a pipe line immediately adjacent to the pressure vessel and where there is a range of two or more similar pressure vessels served by the same pressure lead, only one set of such mounting need be fitted on the pressure lead immediately adjacent to the range of pressure vessels, provided they cannot be isolated.

**(5) Pressure Reducing Devices.**

- (a) Every pressure vessel which is designed for a working pressure less than the pressure at the source of supply, or less than the pressure which can be obtained in the pipe connecting the pressure vessels with any other source of supply, shall be fitted with a suitable pressure reducing valve or other suitable automatic device to prevent the maximum permissible working pressure of the pressure vessel being exceeded.
- (b) To further protect the pressure vessels in the event of failure of the reducing value or device, at least one safety valve having a capacity sufficient to release all the steam, vapor or gas without under pressure rise as determined by the source supply and the size of the pipe connecting the source of supply, shall be fitted on the low pressure side of the reducing valve.

**(6) Pressure vessel or plant being taking into use**

- (a) no new pressure vessel or plant shall be taken into use in factory after coming into force of this rule unless it has been hydrostatically tested by a competent person at a pressure at least 1.3 times the design pressure, and no pressure vessel or plant which has been previously used has remained isolated, or idle for a period exceeding two months or which has undergone alterations or repairs shall be taken into use in a factory unless it has been thoroughly examined by a competent person externally, and internally, if practicable, and has been hydrostatically tested by the competent person at pressure which shall be 1.5 times the maximum permissible working pressure.  
Provided, however, that the pressure vessel or plant which so designed and constructed that it cannot be safely filled with water or liquid or is used in service when even some traces of water

cannot be tolerated, shall be pneumatically tested at pressure not less than the design pressure or the maximum permissible working pressure as the case may be:

Provided further that the pressure vessel or plant which so lined with glass shall be tested hydrostatically or pneumatically as required at a pressure not less than the designed pressure or maximum permissible working pressure as the case may be.

Design pressure shall be not less than the maximum permissible working pressure and shall take into account the possible fluctuations of pressure during actual operation;

- (b) No pressure vessel or plant shall be used in a factory unless there has been obtained from the maker of the pressure vessel or plant or from the competent person a certificate specifying the design pressure or maximum permissible working pressure thereof, and stating the nature of tests to which the pressure vessel or plant and its fittings (if any) have been subjected, and every pressure vessel or plant so used in a factory shall be marked so as to enable it to be identified as to be the pressure vessel or plant to which the certificate relates and the certificate shall be kept available for perusal by the inspector;
- (c) No pressure vessel or plant shall be permitted to be operated or used at a pressure higher than its design pressure or maximum permissible working pressure as shown in the certificate.

**(7) In service test and examinations.**

Every pressure vessel or plant in service shall be thoroughly examined by competent person-

- (a) externally, once in every period of six months
- (b) internally, once in every period of twelve months;
  - a. If by a reason of the construction of a pressure vessel or plant, a through internal examination is not possible, this examination may be replaced by a hydrostatic test which shall be carried out once in every period of two years.
  - b. Provided that for a pressure vessel of plant in continues process which cannot be frequently opened the period of internal examinations may be extended to four years; and
- (c) Hydrostatic test once in every period of four years;
  - a. Provided that in respect of a pressure vessel or plant with thin walls such as sizing cylinder made of copper or any other non-ferrous metal, periodic hydrostatic test may be dispensed with subject to the condition that the requirements laid down in sub-room 8 are fulfilled:
  - b. Provided further that when it is impracticable to carry out thorough external examination of any pressure vessel or plant every six months as required in clause (a) of this sub-room, or if owing to its construction and use a pressure vessel or plant cannot be hydrostatically tested as required in clauses (b) and (c) of this sub-room, a through external examination of the pressure vessel or plant shall be carried out at least once in every period of two years, and at least once in every period of four years, a through systematic, non-destructive test like ultrasonic test for metal thickness or other defects of all parts the failure of which might lead to eventual rupture of the pressure vessel or plant shall be carried out.
- (d) The hydrostatic test, pressure to be carried out for the purpose of this rule shall be 1.25 times the design pressure or 1.5 times the maximum permissible working pressure whichever is less.

**(8) Thin walled pressure vessel or plant.**

- (a) In respect of any pressure vessel or plant of thin walls such as sizing cylinder made of copper or any other non-ferrous metal the maximum permissible working pressure shall be reduced at the rate of 5 percent of the original maximum permissible working pressure for every year of its use

after the first five years and no such cylinder shall be allowed to continue to be used for more than 20 years after it was first taken into use;

- (b) If any information as to the date of construction, thickness of walls, or maximum permissible working pressure is not available, the age of such pressure vessel or plant shall be determined by the competent person in consultation with the Chief Inspector from the other particulars available with the manager ;
- (c) Every new and second hand pressure vessel or plant of thin walls to which repairs likely to affect its strength or safety has been carried out, shall be tested before use at least 1.5 times its maximum permissible working pressure.

**(9) Report by Competent person.**

- (a) If during any examination any doubt arises as to the ability of the pressure vessel or plant to work safely until the next prescribed examination, the competent person shall enter in the prescribed register his observations, findings and conclusions with other relevant remarks with reasons and may authorize the pressure vessel or plant to be used and kept in operation subject to a lowering of maximum permissible working pressure, or more frequent or special examination or test, or subject to both of these conditions ;
- (b) A report of the result of every examination or test carried out shall be completed in the prescribed Form No.8 and shall be signed by the person making the examination or test, and shall be kept available for perusal by the inspector at all hours when the factory or any part thereof is working;
- (c) Where the report of any examination under this rule specified any condition for securing the safe working any pressure vessel or plant, the pressure vessel or plant shall not be used unless the specified condition is fulfilled;
- (d) The competent person making report of any examination under this rule, shall within seven days of the completion of the examination, sent to the Inspector a copy of the report in every case where the maximum permissible working pressure is reduced or the examination shows that the pressure vessel or plant or any part thereof cannot continue to be used with safety unless certain repairs are carried out or unless any other safety measure is taken.

**(10) Application of other laws.**

- (a) The requirements of this rule shall be in addition to and without any prejudice to and not in derogation of the requirements of any other law in force;
- (b) Certificate or reports of any examination, or test of any pressure vessel or plant to which sub-rule 7 to 9 do not apply, conducted or required to be conducted under any other law in force and other relevant record relating to such pressure vessel or plant, shall be properly maintained as required under the said law and shall be produced on demand by the Inspector.

**74A. Water-sealed Gasholder.**

- (1) The expression “gasholder” means a water sealed gasholder which has a storage capacity of not less than 141.5 cubic mtres. (5000 cft.)
- (2) Every gasholder shall be adequate material and strength, sound construction and properly maintained.
- (3) Where there is more than one gasholder in the factory every gasholder shall be marked in a conspicuous position with a distinguishing number or letter.
- (4) Every gasholder shall be thoroughly examined externally by a competent person at least once in a period of 12 months.

(5) In the case of a gasholder of which any lift has been in use for more than 10 years, the internal state of the sheeting shall, within one year of the coming into operation of these rules and thereafter at least within every four years, be examined by a competent person by means of electronic or other accurate devices:

Provided that if the Chief Inspector is satisfied that such electronic or other accurate devices are not available, he may permit cutting of samples from the crown and the sides of the holder.

Provided further that, if the above inspection raises a doubt, an internal visual examination shall be made.

(6) All possible steps shall be taken to prevent or minimize ingress of impurities in the gasholder.

(7) No gasholder shall be repaired or demolished except under the direct supervision of a person who, by his training and experience and his knowledge of the necessary precautions against risks of explosion and of person being overcome by gas is competent to supervise such work.

(8) (i) All sample discs cut under sub-rule (5) above shall be kept readily available for inspection.

(ii) A permanent register in Form No. 37 duly signed by the occupier or manager shall be maintained giving the following particulars:

(a) the serial No. of the gasholder [vide sub-rule (3) above] and the particulars of manufacture i.e., maker's name, date of manufacture, capacity, No. of lifts, pressure thrown by holder when full of gas,

(b) the date of inspection carried out as required under sub-rules (4) and (5) above and by whom carried out,

(c) the method of inspection used,

(d) date of painting, etc.,

(e) nature of repairs and name of person carrying out repairs, and

(f) remarks.

(iii) The result of examination by competent person carried out under sub-rules (4) and (5) shall in Form No. 38

(iv) A copy of the report in Form No. 38 shall be kept in the register and both the register and the report shall be readily available for inspection.

(9) The Inspector shall ensure that every gasholder is duly examined periodically as required by sub-rule (4) and (5)

#### **Rules under sub – section (2) of Section 34**

#### **75. Excessive weight**

(1) Definition: for the purpose of this rule:-

(a) The term “manual transport of loads” means any transport in which the weight of the load is wholly borne by one worker and it covers the lifting and putting down of loads;

(b) The term “regular manual transport of loads” means any activity which is continuously or principally devoted to the manual transport of loads, or which normally includes, even though intermittently, the manual transport of loads.

(2) No person, unaided by another person, or mechanical aid, be required or allowed to lift, put down, carry or move any load of material, article, tools or appliance exceeding the maximum limit in weight as set out in the following schedule:-

**Schedule**

Persons	Maximum weight of material article, tool or appliance Kg.
(a) Adult male	55
(b) Adult female	30
(c) Young person (male 15-18yrs)	30
(d) Young person (female 15-18yrs)	20
(e) Young person (male 14-15yrs)	16
(f) Young person (female 14-15yrs)	14

No woman or young person shall engage, in conjunction with others, in lifting, carrying or moving any material, article, tool or appliance, if the weight thereof exceeds the lowest weight fixed by the Schedule to sub-rule (2) for any of the persons engaged, multiplied by the number of the persons engaged.

- (3) Taking in to account all conditions in which the work is to be performed no worker shall be required or permitted to engage in the manual transport of load which, by reason of its weight, is likely to jeopardize his health or safety.
- (4) Wherever reasonably practicable, suitable technical devices shall be used for the manual transport of loads.
- (5) Notwithstanding the fact that workers are engaged in the regular manual transport of loads with the permissible limits as set out in sub rule(2), they should be subjected to medical examination prior to regular assignment and to periodical examination at an interval of 12 months if the assignment of such jobs, exceeds more than 12 months.

**Rules under section 35****76. Protection of eyes.**

- (a) Effective screens or suitable goggles shall be provide for the protection of persons employed in or in the immediate vicinity of the following processes:-  
The process specified in the schedule I annexed hereto, being processes which involve risk of injury to the eyes from particles or fragments thrown off in the course of the process.
- (b) The process specified in schedule II annexed hereto, being processes which involve risk of injury to the eyes by reason of exposure to excessive light or infra-red or ultra-violet radiations.

**Schedule I**

1. The breaking, cutting, dress or curving bricks, stone, concrete, slag or similar materials by means of hammer, chisel, pick or similar hand tool, or by means of portable tool driven by mechanical power, and the dry grinding of surfaces of any such materials by means of a wheel or disk driven by mechanical power, where in any of the foregoing cases particles or fragments are liable to be thrown off towards the face of the operator in the course of the process.
2. The dry grinding of surfaces of metal by applying them by hand to a wheel, disk or hand driven by mechanical power, and of surfaces of metal by means of a portable tool driven by mechanical power.
3. The dividing into separate parts of metal, bricks, stone, concrete or similar materials by means of high speed of saw driven by mechanical power or by means of an abrasive cutting-off wheel or disk driven by mechanical power.
4. The turning of metal, or articles of metal, where particles or fragments are liable to be thrown off towards the face of the operator in the course of the process.



5. Drilling by means of portable tool, where articles or fragments are liable to be thrown off towards the face of the operator in the course of the process.
6. The welding and cutting of metals by means of an electric, oxy-acetylene or similar process.
7. The hot fettling of steel castings by means of a flex injected burner or air torch, and the de-scaling of metal.
8. The fettling of metal castings, involving the removal of metal including runners, gates and risers, and the removal of any other material during the course of such fettling .
9. The chipping of metal and the chipping, knocking out, cutting out or cutting off of cold rivets, bolts, nuts, lugs, pins, collars or similar articles from any structure or plant, or from part of any structure or plant, by means of hammer, chisel, punch or similar hand tool, or by means of a portable tool driven by mechanical power.
10. Chipping or scuffing or paints, scale, slag, rust or other corrosion from the surface of metal and other hard materials by means of a hand tool or by a portable tool drive by mechanical power.
11. Breaking of scrap metal by means of a hammer or by means of a tool driven by mechanical power.
12. Routing of metal, where particles of fragments are liable to be thrown off towards the face of the operator in the course of the process.
13. Work with drop hammers and power hammers used in either case for the manufacture for the forgings and work by any person not working with such hammers, whose work is carried on in such circumstance and in such a position that particles of fragments are liable to be thrown off towards to his face during work with drop hammer or power hammers.
14. Work at a furnace where there is risk to the eyes from molten metal.
15. Pouring or skimming or molten metal.
16. Work involving risk to the eyes from hot sand being thrown off.
17. Turning of dressing of an abrasive wheel.
18. Handling in open vessels or manipulation of strong as its or dangerous corrosive liquids or materials, and operation, maintenance of dismantling of plant or any part of plant, being plant or part of plant which contains or has contained such acids, liquids or materials, unless the plant or part of plant has been so prepared (by isolation, reduction of pressure, or otherwise), treated or designed and constructed as to prevent risk of injury.
19. Any other process wherein there is a risk of injury to eyes from particles or fragments thrown off during the course of the process.

#### **Schedule II**

1. Welding or cutting of metals by means of an electrical, oxy-acetylene or similar process.
2. All work on furnaces where there is risk of exposure to excessive light or infra-red radiations.
3. Process such as rolling, casting or forging of metals, where there is risk of exposure to excessive light or infra-red radiations.
4. Any other process wherein, there is a risk of injury to eyes from exposure to excessive light or ultra-violet or infra-red radiation.

#### **Rules under sub-section (6) of section 36**

##### **77. Minimum dimension of manholes.**

Every chamber, tank, vat, pipe, flue or other confined space which persons may have to enter and which may contain dangerous fumes to such an extent as to involve risk of the persons being overcome thereby,

shall unless there is other effective means of regress, be provided with a manhole which may be rectangular, oval or circular in shapes, and which shall-

- (a) In the case of rectangular or oval shape, be not less than 16 inches long and 12 inches wide;
- (b) In the case of a circular shape, be not less than 16 inches diameter.

**Exemption under sub-section (5) of section 37**

**78. Exemptions.**

The requirements of sub-section (4) of section 37, shall not apply to the following process carried on in any factory:-

- (a) The operation of repairing a water-sealed gasholder by the electric welding process, subject to the following conditions:-
  - (i.) The gasholder shall contain only the following gases separately or mixed at a pressure greater than atmospheric pressure, namely town gas, coke oven gas, producer gas, blast furnace gas, or gases other than air, used in their manufacture:  
Provided that this exemption shall not apply to any gasholder containing acetylene or mixture of gases to which acetylene has been added intentionally;
  - (ii.) Welding shall only be done by the electric welding process and shall be carried out by experience operative under the constant supervision of a competent person.
- (b) The operations of cutting or welding, steel or wrought iron gas mains and services by application of heat subject to the following conditions:-
  - (i.) The main or service shall be situated in the open air, and it shall contain only the following gases, separately or mixed at pressure greater than atmospheric pressure, namely, gas, coke oven gas, producer gas, blast furnace gas, or gases other than air, used in their manufacturer.
  - (ii.) The main or service shall not contain acetylene or any gas or mixture of gases to which acetylene has been added intentionally.
  - (iii.) The operation shall be carried out by an experience person or persons and at least 2 persons (including those carrying out the operations) experience in work own gas main and over 18 years of age shall be present during the operation.
  - (iv.) The site of the operation shall be free from any inflammable or explosive gas or vapor.
  - (v.) Where acetylene gas is used as a source of heat in connection with an operation it shall be compressed and contained in a porous substance in a cylinder; and
  - (vi.) Prior to the application of any flame to the gas main or service, this shall be pierced or drilled and the escaping gas ignited.
- (c) The operation of repairing an oil tank on any ship by the electric welding process shall be subject to the following conditions:-
  - (i.) The only oil contained in the tank shall have a flash point not less than 150-F (close test) and a certificate to this effect shall be obtain from a competent analyst.
  - (ii.) The analysis certificate shall be kept available for inspection by any inspector, or by any person employed or working on the ship.
  - (iii.) The welding operation shall be carried out only on the exterior surface of the tank at place (a) which is free from oil or oil leakage in inflammable quantities and (b) which is not less than one foot below the nearest part of the surface of the oil within the tank ; and
  - (iv.) Welding shall be done only by the electric welding and shall be carried out by experienced operative under the constant supervision of a competent person.

**Rules under sub-section (1) of section 38****79. Fire.****(1) Process, equipment plant, etc., involving serious explosion and serious fire hazard-**

- (a) All process, storage, equipments plants etc. involving serious explosion and flash fire hazard shall be located in segregated buildings where the equipments shall so arranged that only a minimum number of employees are exposed to such hazards at any time.
  - (b) All industrial processes involving serious fire hazard shall be located buildings or work places separated from one another by walls of fire-resistant construction.
  - (c) Equipment and plant involving serious fire or flash fire hazard shall, wherever possible, be so constructed and installed that in case of fire, they can be easily isolated.
  - (d) Ventilation ducts, pneumatic conveyors and similar equipment involving various fire risk should be provided with flame-arresting or automatic fire extinguishing appliances or fire resisting dampers electrically interlocked with heat sensitive smoke detectors and air conditioning plant system.
  - (e) In all work places having serious fire or flash fire hazards, passages between machines installations or piles of material should be at least 90cm wide. For storage piles, the clearance between the ceiling and the top of the pile should not be less than 2 metres”
- (2) (a) **Access for fire fighting.-** Buildings and plants shall be so laid out and roads, passageways etc., so maintained as to permit unobstructed access for fire fighting.
- (b) “Doors and Window openings shall be located in suitable position on all external walls of the building to prove easy access to the entire are within the building for firefighting”.
- (3) **Protection against lighting.-** Protection from lightning shall be provided for-
- (i.) buildings in which explosive or highly flammable substances are manufactured, used, handled or stored;
  - (ii.) storage tanks containing oils, paints or other flammable liquids;
  - (iii.) grain elevators; and
  - (iv.) buildings, tall chimneys or stack where flammable gases, fumes, dust or lint and likely to be present.
  - (v.) Sub-station buildings and out-door transformers and switch yard.
- (4) **Explosives.-** All explosives shall be handled, transported, stored and used in accordance with the provisions in the Indian Explosives Act, 1884, (Central Act 4 of 1884).
- (5) **Precautions against ignition.-** Wherever there is danger of fire or explosion from accumulation of flammable or explosive substances in air-
- (a) all electrical apparatus shall either be excluded from the area of risk or they shall be of such construction and so installed and maintained as to prevent the danger of their being a source of ignition;
  - (b) effective measures shall be adopted for prevention of accumulation of static charges to a dangerous extent;
  - (c) workers shall wear shoes without iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction;
  - (d) transmission belts with iron fasteners shall not be used; and
  - (e) all other precautions, as are reasonably-practicable, shall be taken to prevent initiation of ignition from all other possible sources such as open flame, frictional sparks overheated surfaces of machinery or plant, chemical or physical-chemical reaction and radiant heat.

The material susceptible to spontaneous ignition shall be stored in dry condition and should be in heaps of such capacity and separated by such passage which will prevent fire. The materials susceptible to ignition and stored in the open shall be at a distance not less than 1 meter away from process or storage buildings.

- (6) **Spontaneous ignition.**- Where materials are likely to induce spontaneous ignition, care shall be taken to avoid formation of air pocket and to ensure adequate ventilation.
- (7) **Cylinder containing compressed gas.**- Cylinders containing compressed gas may only be stored in open if they are protected against excessive variation of temperature, direct rays of sun, or continuous dampness. Such cylinders shall never be stored near highly flammable substances, furnaces or hot process. The room where such cylinders are stored shall have adequate ventilation.
- (8) **Storage of flammable liquids**
- (a) The quantity of flammable liquids in any work room shall be the minimum required for the process or processes carried on in such room. Flammable liquids shall be stored in suitable containers with close fitting covers:
- Provided that not more than 20 litres of flammable liquids having a flash point of 21°C or less shall be kept or stored in any work room.
- (b) Flammable liquids shall be stored in closed containers and in limited quantities in well ventilated rooms of fire resisting construction which are isolated from the remainder of the building by fire walls and self closing fire doors.
- (c) Large quantities of such liquids shall be stored in isolated and adequately ventilated building of fire resisting construction or in storage tanks, preferably underground and at distance from any building as required in the Petroleum Rules, 1976.
- (d) Effective steps shall be taken to prevent leakage of such liquids into basements, sumps or drains and to confine any escaping liquid within safe limits.
- (9) **Accumulation of flammable dust, gas, fumes or vapor in air or flammable waste material on the floors**
- (a) Effective steps shall be taken for removal or prevention of the accumulation in the air of flammable dust, gas fume or vapor to an extent which is likely to be dangerous.
- (b) No waste materials of a flammable nature shall be permitted to accumulate on the floors and shall be removed at least once in a day or shift, and more often, when possible. Such materials shall be placed in suitable metal containers with covers wherever possible.
- (10) **Fire exits.**-
- (a) In this rule-
- (i) "horizontal exit" means an arrangement which allows alternative egress from a floor area to another floor at or near the same level in an adjoining building or an adjoining part of the same building with adequate separation ; and
- (ii) "travel distance" means the distance an occupant has to travel to reach an exit.
- (b) An exit may be a doorway, corridor, passageway to an internal or external stairway or to a verandah. An exit may also include a horizontal exit leading to an adjoining building at the same level.
- (c) The number and types of first-aid firefighting equipment to be provided for light hazard occupancy shall be as given in Schedule I. For the ordinary hazard or extra hazard occupancies, equipment as given in sub-rule 12 shall be provided in addition to that given in Schedule I.

- (d) In every room of a factory exits sufficient to permit safe escape of the occupants in case of fire or other emergency shall be provided which shall be free of any obstruction.
- (e) The exits shall be clearly visible and suitably illuminated with suitable arrangement, whatever artificial lighting is to be adopted for this purpose, to maintain the required illumination in case of failure of the normal source of electric supply.
- (f) The exits shall be marked in a language understood by the majority of the workers.
- (g) Fire resisting doors or roller shutters shall be provided at appropriate places along the escape routes to prevent spread of fire and smoke, particularly entrance at the entrance of lifts or stairs where funnel or flue effect may be created inducing an upward spread of fire.
- (h) All exits shall provide continuous means of egress to the exterior of a building or to an exterior open space leading to a street.
- (i) Exits shall be so located that the travel distance on the floor shall not exceed 30 metres.
- (j) In case of those factories where high hazard materials are store or used, the travel distance to the exit shall not exceed 22.5 metres and there shall be at least two ways of escape from every room, however small, except toilet rooms, so located that the points of access thereto are out of or suitably shielded from areas of high hazard.
- (k) Wherever more than one exit is required for any room space or floor, exits shall be placed as remote from each other as possible and shall be arranged to provide direct access in separate directions from any point in the area served.
- (l) The unit of exit width used to measure capacity of any exit shall be 50cm. A clear width of 25cm. shall be counted as an additional half unit. Clear width of less than 25cm. shall not be counted for exit width.
- (m) Occupants per unit width shall be 50 for stairs and 75 for doors.
- (n) For determining the exits required, the occupant load shall be reckoned on the basis of actual number of occupants within any floor area or 10 square metres per person, whichever is more.
- (o) There shall not be less than two exits serving every floor area above and below the ground floor and at least one of them shall be an internal enclosed stairway.
- (p) For every building or structure used for storage only, and every section thereof considered separately, shall have access to at least one exit so arranged and located as to provide a suitably mean of escape for any person employed therein, and in any such room wherein more than 10 persons may be normally present, at least two separate means of exit shall be available, as remote from each other as practicable.
- (q) Every storage area shall have access to at least one means of exit which can be readily opened.
- (r) Every exit doorway shall open into an enclosed stairway, a horizontal exit on a corridor or passageway providing continuous and protected means of egress.
- (s) No exit doorway shall be less than 100cm. in width. Doorways shall be not less than 200cm. in height.
- (t) Exit doorways shall open outwards, that is, away from the room, but shall not obstruct the travel along any exit. No doors when opened shall reduce the required width of stairway or landing to less than 90cm. Over head or sliding doors shall not be installed for this purpose.
- (u) An exit door shall not open immediately upon a flight of stairs. A landing equal to at least the width of the doorway shall be provided in the stairway at each doorway. The level of landing shall be the same as that of the floor which it serves.
- (v) The Exit doorways shall be openable from the side which they serve without the use of a key.

- (w) Exit for corridors and passageways shall be or width not less than the aggregate required width of exit doorways leading from there in the direction of travel to the exterior.
- (x) Where stairways discharge through corridors and passageways, the height of the corridors and passageways shall not be less than 2.4 metres.
- (y) Internal stairs shall be constructed of non-combustible materials throughout.
- (z) Internal stairs shall be constructed as a self-contained unit with at least one side adjacent to an external wall and shall be completely enclosed.
- (aa) A staircase shall not be arranged round a lift shaft unless the latter is totally enclosed by a material having a fire-resistance rating not lower than that of the type of construction of the former.
- (bb) Hollow combustible construction shall not be permitted.
- (cc) The minimum width of an internal staircase shall be 100cm.
- (dd) The minimum width of treads without nosing shall be 25cm. For an internal staircase. The threads shall be constructed and maintained in a manner to prevent slipping.
- (ee) The maximum height of a riser shall be 19cm. and the number of risers shall be limited to 12 per flight.
- (ff) Hand rails shall be provided with a minimum height of 100cm. and shall be firmly supported.
- (gg) The use of spiral staircase shall be limited to low occupant load and to a building of height of 9 metres, unless they are connected to platforms such as balconies and terraces to allow escapes to pause. A spiral staircase shall be not less than 300 cm. in diameter and have adequate head room.
- (hh) The width of a horizontal exit shall be same as for the exit doorways.
- (ii) The horizontal exit shall be equipped with at least one fire door or self closing type.
- (jj) The floor area on the opposite or refuge side of a horizontal exit shall be sufficient to accommodate occupants of the floor areas served, allowing not less than 0.3square metre per person. The refuge area shall be provided with exits adequate to meet the requirements of this sub-rule. At least one of the exits shall lead directly to the exterior or street.
- (kk) Where there is difference in level between connected areas for horizontal exit, ramps not more than 1 in 8 slope shall be provided. For this purpose steps shall not be used.
- (ll) Doors in horizontal exits shall be openable at all times.
- (mm) Ramps with a slope of not more than 1 in 10 may be substituted for the requirements of staircase. For all slopes exceeding 1 in 10 and wherever the use is such as to involve danger of slipping, the ramp shall be surfaced with non-slipping materials.
- (nn) In any building not provided with automatic fire alarm a manual fire alarm system shall be provided if the total capacity of the building is over 500 persons, or if more than 25 persons are employed above or below the ground floor, except that no manual fire alarm shall be required in one-storey buildings where the entire area is undivided and all parts thereof are clearly visible to all occupants.

#### (11) **First aid fire fighting arrangements**

- (a) In every factory there shall be provided and maintained adequate suitable fire fighting equipments for fighting fire in the early stages, those being referred to as first aid firefighting equipment in this rule.

- (b) The types of first aid firefighting equipment to be provided shall be determined by considering the different types of fire risks which are classified as follows, namely:-
- (1) “Class A fire” - Fire due to combustible materials such as wood textiles, paper, rubbish and the like.
    - (i.) “Light hazard” – Occupancies like offices, assembly halls, canteens, rest-room, ambulance room and the like;
    - (ii.) “Ordinary hazard” – Occupancies like saw mills, carpentry shops, small timber yards, book binding shops, engineering workshop and the like.
    - (iii.) “Extra hazards” – Occupancies like large timber yards, go downs storing fibrous materials flour mills, cotton mills, jute mills, large wood working factories and the like;
  - (2) “Class B Fire” – Fire in flammable liquids like oil, petroleum products, solvents, grease, paint, etc.,
  - (3) “Class C Fire” – Fire arising out of gaseous substances.
  - (4) “Class D Fire” – Fire from reactive chemicals, active metals and the like.
  - (5) “Class E Fire” – Fire involving electrical equipment and delicate machinery and the like.
- (c) The number and types of first-aid fire fighting equipments to be provided shall be as per the following scale:
- (1) **Class A fire-**
    - (i) **Light hazard-** One 9 litre water bucket for every 100 square metres of floor area or part thereof and one nine litre watery type (soda-acid or gas pressure or bucket pump) extinguisher shall be provided for each six buckets or part thereof with a minimum of one extinguisher and two buckets per compartment of the building. These equipment shall be so distributed over the entire floor areas that a person shall have to travel not more than 25 meters for any point to reach the nearest equipments.
    - (ii) **Ordinary hazard-** One 9 litre water bucket for every 100 square metres of floor area or part thereof and one nine litre water type (soda-acid or gas pressure or buckets pumps) extinguisher shall be provided for each six buckets or part thereof with a minimum of two extinguisher and four buckets per compartment of the building. These equipment shall be so distributed over the entire floor areas that a person shall have to travel not more than 15 meters from any point to reach the nearest equipments.
    - (iii) **Extra hazard-** The scale of equipment would be what is prescribed for ordinary hazard and, in addition such extra equipment as, in the opinion of the Inspector, are necessary, having regard to the special nature occupancy:
 

Provided that the special cases, the Inspector, after taking into consideration the circumstances, authorities that the buckets prescribed in this case may be dispensed with, if the number of the extinguishers provided is double that of what is prescribed.
  - (2) **Class B Fire-** There shall be at least one fire extinguisher either, foam type or carbon dioxide or dry powder type per 50 square meters of floor area and shall be so distributed that no person is required to travel more than 15 metres from any point to reach the nearest equipment. In addition to the requirements extinguishers specified here, requirements as laid down in clause (1) shall also be provided.
  - (3) **Class C Fire-** Carbon dioxide or dry chemical powder extinguishers shall be provided near each plant or groups of plants.

- (4) **Class D Fire-** Special dry powder (chloride based) type of extinguishers or sand buckets shall be provided on a large scale as laid down for class B fire. The Inspector may require a higher scale of portable equipment to be provided depending upon the risk involved.
- (5) **Class E Fire-** Carbon dioxide or dry powder type extinguishers shall be provided near each plants or group of plants depending upon the risk involved.
- (d) The first-aid fire fighting equipments shall conform to the relevant Indian Standards.
- (e) As far as possible the first-aid firefighting equipment shall all be similar in shape and appearance and shall have the same methods of operation.
- (f) All first-aid firefighting equipment shall be placed in a conspicuous position and shall be readily and easily accessible for immediate use. Generally, these equipments shall be placed as near as possible to the exits or stair landing or normal routs of escape.
- (g) All water buckets and bucket pump type extinguishers shall be filled with clean water. All sand buckets shall be filled with clean, dry and fine sand.
- (h) All other extinguishers shall be charged appropriately in accordance with the instructions of the manufacturer.
- (i) Each first-aid firefighting equipment shall be allotted a serial number by which it shall be referred to in the record. The following details shall be painted with the white paint on the body of each equipment namely :
- (1) serial number;
  - (2) date of last refilling; and
  - (3) date of last inspection.
- (j) First-aid firefighting equipment shall be placed on platforms or in cabinets in such a way that there bottom is 750mm. above the floor level. Fire bucket shall be placed on hooks attached to a suitable stand or wall in such a way that there bottom 750mm. above the floor level. Such equipment if placed outside the building shall be under sheds or covers.
- (k) All extinguishers shall be thoroughly cleaned and recharged immediately after discharge. Sufficient refill material shall be kept readily available for this purpose at all times.
- (l) All first-aid fire fighting equipments shall be subject to routine maintenance, inspection and testing to be carried out by properly trained person. Periodicity of the routine maintenance, inspection and the test shall conform to the relevant Indian Standards.
- (12) **Other fire fighting arrangements.-**

- (a) In every factory, adequate provision of water supply for firefighting shall be made and where the amount of water required in liters per minute, as calculated from the formula

$$\frac{A + B + C + D}{20} \geq 550$$

Power driven trailer pumps of adequate capacity to meet the requirements of water as calculated above shall be provided and maintained:

Provided that in areas where the fire risk does not require use of water, such areas under B, C or D may, for the purpose of calculation, be halved:

Provided further that where the areas under B, C or D are protected by permanent automatic fire fighting installation approved by any fire association or fire insurance company, such areas may, for the purpose of calculation, be halved:

Provided also that where the factory is situated at not more than 3 kilometers from an established city or town fire service, the pumping capacity based on the amount of water arrived at by the



formula above may be reduced by 25 percent ; but not account shall be taken for this reduction in calculating water supply required under clause (a).

**Note-** In the above formula in this clause-

A = the total area in square metres of all floors and galleries in all buildings of the factory;

B = the total area in square metres of all floors and galleries including open spaces in which combustible materials are handled or stored;

C = the total area in square metres of all floors over 15 metres above ground level; and

D = the total area in square metres of all floors of all buildings other than those of fire resisting construction.

- (b) Each trailer pump shall be provided with equipment as per Schedule appended to this rule. Such equipment, shall conform to the relevant Indian Standard.
  - (c) Trailer pumps shall be housed in a separate shed or sheds which shall be sited close to a principle source of water supplies in the vicinity of the main risk of the factory.
  - (d) In the factories where the area is such as cannot be reached by man hauling of trailer pumps within reasonable time vehicle with towing attachment shall be provided at the scale of one for every four trailer pumps with a minimum one such vehicle kept available at all times.
  - (e) Water supply shall be provided to give flow of water as required under clause (a) for at least 100 minutes. At least 50 per cent of water supply of 450,000 litres whichever is less, shall in the form of static tanks of adequate capacities (not less than 450,000 litres each) distributed round the factory with due regard to the potential fire risks in the factory. Where piped supply is provided, the size of the main shall not be less than 15cm. diameter and it shall be capable of supplying a minimum of 4500 litres per minute at a pressure of not less than 7 kg. per square centimeter.
  - (f) All trailer pumps including the equipment provided with them and the vehicles for towing them shall be maintained in good conditions and subjected to periodical inspections and testing as required.
- (13) **Personnel in charge of equipment and for fire fighting, for drills etc.,**
- (a) The first-aid and other firefighting equipment to be provided as required in sub-rules (11) and (12) shall be in charge of a trained responsible person.
  - (b) Sufficient number of person shall be trained in a proper handling of firefighting equipment as referred to in clause (a) and their use against the types of fire for which they are intended to insure adequate number of person are available for firefighting both by means of first-aid firefighting equipment and others. Wherever vehicles with towing attachment are to be provided as required in clause (d) of sub-rule (12) sufficient number of person shall be trained in driving those vehicles to ensure that trained persons are available for driving them whenever the need arises.
  - (c) Fire fighting drills shall be held at least once in every three months.
- (14) Automatic sprinklers and fire hydrants shall be in addition and not in substitution of the requirements in sub-rules (11) and (12)
- (15) If the Chief Inspector is satisfied in respect any factory or any part of the factory that owing to the exceptional circumstances such as inadequacy of water supply or infrequency of the manufacturing process or for any other reason, to be recorded in writing, all or any of the requirements of the rules are impracticable or not necessary for the protection of the workers, he may by order in

writing ( which he may at his discretion revoke) exempt such factory or part of the factory from all or any of the provisions of the rules subject to conditions as he may by such order prescribed.

**Schedule I**

**FIRST AID FIRE FIGHTING EQUIPMENTS**

(1) The different type of fires and First-Aid fighting equipments suitable for use on them are as under:

<i>Class of Fire</i>	<i>Suitable type of Appliances</i>
A Fires in ordinary combustibles (wood, vegetable fibres, paper & the like)	Chemical Extinguishers of soda, acid Gas/expelled water and antifreeze types and water buckets.
B Fires inflammable liquids, paints, Grease, solvents and the like	Chemical extinguishers of foam, carbon dioxide and dry power Types and sand buckets.
C Fires in gaseous substances	Chemical Extinguishers of carbon dioxide and dry powder types Under pressure
D Fires in Reactive Chemicals active metals and the like	Special type of dry powder extinguishers and sand buckets.
E Fires in electrical equipments and dry powder type and sand buckets	Chemical extinguishers of carbon Dioxide

(2) One 9 litre water buckets shall be provided for every 100 Sq.m of the floor area or part thereof and one 9 litre water type extinguishers shall be provided to six buckets or part thereof with a minimum of one extinguisher two buckets per compartment of the building. Buckets may be dispensed with provided supply of extinguishers is double this indicated above.

(3) Acceptable replacements for water buckets and water type extinguishers in occupancies where Class B fires are anticipated, are as under:

Acceptable Replacement	Buckets of water		Water type Extinguishers For each 9 litres (or 2 gallons) extinguishers
	For one bucket	For three buckets	
Dry sand	1 bucket	3 bucket	
Carbon dioxide Extinguishers	3kg	9kg (In not less than 2 Extinguishers)	9kg
Dry powder	2kg	5kg (In one or more Extinguishers)	5kg
Form extinguishers	9 ltrs	9 ltrs	9 ltrs

(4) The following provisions shall be complied with where Class fires are anticipated.

(a) For rooms containing electrical transformers, switch gear motors and/ or other electrical apparatus only, not less than two Kg. Dry powder or Carbon Dioxide type extinguishers shall be provided within 15m. of the apparatus.

- (b) Where motors and/or other electrical equipment are installed in rooms other than those containing such equipment only one 5 Kg. Dry powder or carbon dioxide extinguishers shall be installed within 15m. of such equipment in addition to the requirement mentioned at (3) and (4) above. For this purpose the same extinguisher may be deemed to afford protection to all apparatus within 15m thereof.
- (c) Where electrical motors are installed on platforms, one 2 Kg. Dry powder or Carbon dioxide type extinguisher shall be provided on or below each platform. In case of a long platform with a number of metres one extinguisher shall be acceptable as adequate for every 3 mtrs. on the common platform. The above requirements will be in addition to the requirements mentioned at item (3) and (4) above.
- (5) The first aid fire fighting equipments shall be so distributed over the entire floor area that a person has to travel not more than 15m to reach the nearest equipments.
- (6) Selection of sites for the installation of first aid fire fighting equipments –
  - (a) While selecting sites for first aid fire fighting equipments due consideration shall be given to the nature of the risk to be covered. The equipments shall be placed in conspicuous position and shall be readily accessible for immediate use in all parts of the occupancy. It should always be borne in mind while selecting sites that first aid fire fighting equipments are intended only for use on incipient fires and their value may be negligible if the fire is not extinguished or brought under control in the early stages.
  - (b) Buckets and extinguishers shall be placed at convenient and easily accessible locations either on hangers or on stands in such a way that their bottom is 750mm above the floor level.
- (7) The operating instructions of the extinguishers shall not be defaced or obliterated. In case the operating instructions are obliterated or have become eligible due to passage of time fresh transfers of the same shall be obtained from the manufacturers of the equipments and affixed to the extinguishers.

### **Schedule II**

#### **EQUIPMENTS TO BE PROVIDED WITH TRAILER PUMP**

##### **For light trailer pump of a capacity of 680litres/minute**

1. Armoured section hose of 9 metres length, with wrenches.
2. Metal suction strainer.
3. Basket strainer.
4. Two-way suction collecting-head
5. Suction adaptor.
6. Unlined or rubber lined 70mm. delivery hose of 25 metres length complete with quick-release coupling.
7. Dividing breaching-piece
8. Branch –piece with 15 mm. nozzles.
9. Diffuser nozzle.
10. Stand pipe with blank cap.
11. Hydrant key.
12. Collapsible canvas buckets
13. Fire hook (preventer) with cutting edge.
14. 25mm. manila rope of 30 metres length.
15. Extension ladder of 9 metres length (where necessary)

16. Heavy axe.
17. Spade.
18. Pick axe.
19. Crowbar.
20. Saw.
21. Hurricane lamp.
22. Electric torch.
23. Pair rubber gloves

**For large trailer pump of a capacity 1800 litres/minutes**

1. Armored suction hose of 9 metres length, with wrenches.
2. Metal strainer.
3. Basket strainer.
4. Three-way suction collecting head.
5. Suction adopter.
6. Unlined or rubber lined 70mm. delivery hose of 25 metres length complete with quick-release couplings.
7. Dividing breaching-piece
8. Collecting breaching-piece
9. Branch pipes with one 25mm. two 20mm and one diffuser nozzles.
10. Standpipe with blank caps.
11. Hydrant keys.
12. Collapsible canvas buckets.
13. Ceiling hooks (preventer) with cutting edge.
14. 50mm manila rope of 30 metres length.
15. Extension ladder of 9 metres length (where necessary)
16. Heavy axe.
17. Spade.
18. Pick axe
19. Crowbar
20. Saw.
21. Hurricane lamp.
22. Electric torch.
23. Pair rubber gloves.

Note:- If it appears to the Chief Inspector of Factories that in any factory the provision of breathing apparatus is necessary he may by order in writing require the occupier to provide suitable breathing apparatus in addition to the equipment for light trailer pump or large trailer pump as the case may be.

**Special rules for match factories**

**80. In match factories.**

- (i) The residue of the head composition shall not in any way be mixed with the residue of the friction composition;
- (ii) the rooms comprising the two mixing departments, namely (a) head composition, and (b) friction composition shall be entirely separated from each other and the drains from these two departments shall be kept entirely separate;

- (iii) rubbish containing the residues of the head composition and friction composition shall be kept and burnt separately;
- (iv) departments in which completed matches ( matches with heads on) are stored shall be separated from all other departments by means of fireproof walls and doors providing adequate means of escape in case of fire, provided that the Chief Inspector may, subject to such conditions, as he may deem necessary, exempt any factory in existence on 1st January 1951 from the provisions of this clause;
- (v) Splints, veneers, and other materials required in excess of the quantity required for the day's manufacture shall be kept in separate rooms of the factory where no manufacturing process is carried on. No manufactured materials shall be stored anywhere in the factory compound for more than five days after the manufacture except in the storage godowns;  
 Provided that nothing contained in this clause shall apply to splints and veneers in cases stored in peeling and box making departments; and
- (vi) Store rooms for matches shall be entirely separated by fire proof walls from the buildings used for manufacture.

### Rules under section 41

#### 81. Further safety precautions.

- (1) Without prejudice to the provisions of sub-section (1) of section 21 in regards to the fencing of machines, the further precautions specified in the Schedules annexure hereto shall apply to the machines noted in each Schedule.
- (2) This rule shall come into force, in respect of any class or description of factories, where machines noted in the said Schedules are in use on such dates as the State Government may, by notification in the Official Gazette, appoint in this behalf.

#### Schedule 1

#### TEXTILE MACHINERY EXCEPT MACHINERY USED IN JUTE MILLS

1. **Application.**- The requirements of this Schedule shall apply to machinery in factories engaged in the manufacture or processing of textiles other than jute textiles. The schedule shall not apply to machinery in the factories, engaged exclusively in the manufacture of synthetic fibres.
2. **Definitions.**- For the purpose of this Schedule-
  - (a) "Calender" means a set of heavy rollers mounted on vertical side frames and arranged to pass cloth between them. Calenders may have two to ten rollers, or bowls, some of which can be heated.
  - (b) "Embossing calendar" means a calendar with two or more rolls, one of which is engraved for producing figure effects of various kinds on a fabric.
  - (c) "Card" means a machine consisting of cylinders of various sizes- and in certain flats- covered with card clothing and set in relation to each other so that fibres in staple form may be separated into individual relationship. The speed of the cylinders and their direction of rotation varies. The finished product is delivered as a silver, Cards of different types are : the revolving flat cards, the roller and clearer card, etc.
  - (d) "Card clothing" means the material with which the surface of the cylinder, differ, flats etc., of a card are covered and consists of a thick foundation material made of , either textile fabrics through which are pressed may fine closely spaced, specially bent wires or mounted saw toothed wire.
  - (e) "Comber" means a machine for combing fibres of cotton, wool etc. The essential parts are device for feeding forward a fringe of fibres at regular intervals and an arrangement of combs or pins,

which at the right time, pass through the fringe. All tangled fibers, short fibers, and nips are removed and the long fibers are laid parallel.

- (f) “Combing machinery” means a general classification of machinery including combers, silver lap machines, ribbon lap machines and gills boxes, but excluding cards.
- (g) “Rotary staple cutter” means a machine consisting of one or more rotary blades used for the purpose of cutting textile fibers into staple lengths.
- (h) “Garnet machine” means any of the number of types of machines for opening hard twisted waste to wool, cotton, silk, etc. Essentially, such machines consist of a licker in, one or more cylinders each having a compliment worker and stripper rolls; and a fancy roll and doffer. The action of such machines is somewhat like that of wool card, but it is much more severe in that various rolls are covered with garnet wire instead of card clothing.
- (i) “Gill box” means a machine used in the worsted system of manufacturing yarns. Its function is to arrange fibers in parallel order. Essentially, it consist of a pair of feed roll and a series of followers where the followers move at a faster surface speed and perform a combing action.
- (j) “In-running rolls” means any pair of rolls or drums between which there is a “nip”.
- (k) “Interlocking arrangement” means a device that prevents the setting in motion of a dangerous part of a machine or the machine self while the guard, cover or door provided to safeguard against danger is open or unlocked, and which will also hold the guard, cover or door closed or locked while the machine or the dangerous part if in motion.
- (l) “Kier” means a large metal vat, usually a pressure type, in which fabrics may be boiled out, bleached, etc.
- (m) “Ribbon lapper” means a machine or a part of a machine used to prepare laps for feeding a cotton comb; its purpose is to provide a uniform lap in which the fibers have been straightened as much as possible.
- (n) “Silver lapper” means a machine or a part of machine in which a number of parallel card silvers are drafted slightly, laid side by side in a compact sheet and would into a cylindrical package.
- (o) “Loom” mans a machine for effecting the interlocking of two series of yarns crossing one another at right angles. The warp yarns are wound on a warp beam and pass through headless and reeds. The filling is shot across in a shuttle and settled in place by reeds and slay, the fabric is wound on a cloth beam.
- (p) “Starch mangle” means a mangle that is used specifically for starching cotton goods. It commonly consists of two large rolls and a shallow open vat with several immersion rolls. The vat contains the starch solution.
- (q) “Water mangle” means a calendar having two or more rolls used for squeezing water from fabrics before drying. Water mangles also may be used in other ways during the finishing of various fabrics.
- (r) “Mule” means a type of spinning frame having a head stock and carriage as its two main sections. The head stock is stationery. The carriage is movable and it carries the spindles which draft and spin the roving into yard. The carriage extends over the whole width of the machine and moves slowly toward and away from the head stock during the spinning operation.
- (s) “Nip” is the danger zone between two rolls or drums which by virtue of their positioning and movement create a nipping hazard.
- (t) “Openers and pickers” means a general classification of machinery which includes breaker pickers, intermediate pickers, finisher pickers, single process pickers, multiple process pickers, willow

machines, card and picker waste cleaners, thread extractors, shredding machines, roving waste openers, shoddy pickers, bale breakers, feeders vertical openers, lattice cleaners, horizontal cleaners, and any similar machinery quipped with either cylinders, screen section, calendar section, rolls, or beaters used for the preparation of stock for further processing.

- (u) “Paddler” means a trough for a solution and two or more squeeze rolls between which cloth passes after being passed through a mordant or dye bath.
- (v) “Plaiting machine” means a machine used to lay cloth into folds of regular length for convenience of subsequent process or use.
- (w) “Roller printing machine” means a machine consisting of a large central cylinder, or pressure bowl, around the lower part of the perimeter of which is placed a series of engraved colour rollers (each having a colour through) a furnished roller, doctor blades, etc. The machine is used for printing fabrics.
- (x) “Continuous bleaching range” means a machine for bleaching of cloth in rope or open-width form with the following arrangement. The cloth, after wetting out, pass through a squeeze roll into a saturator containing a solution of caustic soda and then to an enclosed J-box, A V-shaped arrangement is attached to the front part of the J-box for uniform and rapid saturation, of the cloth with steam before it is packed down in the J-box. The cloth, in a single strand rope form, passes over a guide roll down the first arm of the “V” and up the second, stem is injected into the “V” at the upper end of the second arm so that the cloth is rapidly saturated with steam at this point. The J-box capacity is such that cloth will remain hot for a sufficient time to complete the scouring action. It then passes a series of washers with a squeeze roll in between. The cloth then passes through a second set of saturator, J-box, and washer, where it is treated with the peroxide solution. By slight modification of the form of the unit, the same process can be applied to open width cloth.
- (y) “Mercerizing range” means a 3-bowl mange, a tender frame, and a number of boxes for washing and securing. The whole set up is in a straight line and all parts operate continuously. The combination is used to saturate the cloth with sodium hydroxide, stretch it while saturated, and washing out most of the caustic before releasing tension.
- (z) “Sanforizing machine” means a machine consisting of a large steam-heated cylinder, and endless, thick, woolen felt blanket which is in close contact with the cylinder for most of its perimeter, and an electrically heated shoe which presses the cloth against the blanket while the latter is in a stretched condition as it curves around feed in roll.
- (aa) “Shearing machine” means a machine used for shearing cloth. Cutting action is provided by a number of steel blades spirally mounted on a roller. The roller rotates in close contact with a fixed ledger blade. There may be from one to six rollers on a machine.
- (bb) “Singeing machine” means a machine which comprises of a heated roller, or an open gas flame. The cloth or yarn is rapidly passed over the roller or the plate or through the open gas flame to remove fuzz, or hairiness by burning.
- (cc) “Slasher” means a machine used for applying a size mixture to warp yarns. Essentially, it consists of a stand for holding section beams, a size box, one or more cylindrical dryers or an enclosed hot air dryer and a beaming end for winding the yarn or the loom beams.
- (dd) “Tenter frame” means a machine for drying cloth under tension. It essentially consists of a pair of endless traveling chains fitted with clips of fine pins and carried on tracks. The cloth is firmly held at the selvages by the two chains with diverge as they move forward so that the cloth is brought to the desired width.

- (ee) “Warper” means a machine for preparing and arranging the yarns intended for the warp of a fabric, specifically, a beam warper.

### 3. General safety requirements.-

- (1) Every textile machine shall be provided with individual mechanical or electrical means for starting and stopping such machines. Belt shifter of machines driven by belts and shafting should be provided with a belt shifter lock or an equivalent positive locking device.
- (2) Stopping and starting handles or other controls shall be of such design and so positioned as to prevent the operator’s hand or fingers from striking against any moving part of the machine.
- (3) All belts, pulleys, gears, chains, sprocket wheels, and other dangerous moving parts of machinery which either form part of the machinery or are used in association with it, shall be securely guarded.

### 4. Openers and pickers

- (1) In all opening or picker machinery, beaters and other dangerous parts shall be securely fenced by suitable guards so as to prevent contact with them. Such guards and doors or covers of openings giving access to any dangerous part of the machinery shall be provided with interlocking arrangement:

Provided that in the case of doors or covers of openings giving access to any dangerous part, other than beater covers, instead of the interlocking arrangement, such opening, may be so fenced by guards which prevent access to any such dangerous part and which is either kept positively locked in position or fixed such a manner that it cannot be removed without the use of hand tools.

- (2) The feed rolls on all opening and picking machinery shall be covered with a guard designed to prevent the operator from reaching the nip while the machinery is in operation.
- (3) The lap forming rollers shall be fitted with a guard or cover which shall prevent access to the nip at the intake of the lap roller and fluted roller as long as the weighted rack is down. The guard or cover shall be so locked that it cannot be raised until the machine is stopped, and the machine cannot be started until the cover or guard is closed:

Provided that the foregoing provision shall not apply to the machine equipped with automatic lap forming devices:

Provided further that any such machine equipped with an automatic lap forming device shall not be used unless the automatic lap forming device is in efficient working order.

### 5. Cotton cards.

- (1) All cylinder doors shall be secured by an interlocking arrangement which shall prevent the door being opened until the cylinder has ceased to revolve and shall render it impossible to restart the machine until the door has been closed.

Provided that the latter requirement in respect of the automatic locking device shall not apply while stripping or grinding operations are carried out:

Provided further that stripping or grinding operations shall be carried out only by specially trained adult workers wearing tight fitting clothing whose names have been recorded in the register prescribed in this behalf as required in sub-section (1) and (2)

- (2) The licker-in shall be guarded so as to prevent access to the dangerous parts.
- (3) Every card shall be equipped with an arrangement that would enable the card cylinder to be driven by power during stripping, grinding operations without having to either shift the main belt to the fast pulley of the machine or to dismantle the interlocking mechanism. Such an arrangement shall be used only for stripping or grinding operations.



**6. Garnett machines.**

- (1) Garnett lick-ers shall be enclosed.
- (2) Garnett fancy rolls shall be enclosed by guards. These shall be installed in a way that keeps worker rolls reasonably accessible for removal or adjustment.
- (3) The underside of the Garnett shall be guarded by a screen mesh or other form of enclosures to prevent access.

**7. Gill boxes.**

- (1) The feed end shall be guarded so as to prevent fingers being caught in the pins of the intersecting fallers.
- (2) All nips of in running rolls shall be guarded by suitable nip guards conforming to the following specifications; namely:-

Any opening which the guard may permit when fitted in position shall be restricted with respect to the distance of the opening from any nip point through that opening and in any circumstances, the maximum width of the opening shall not exceed the following:

<i>Distance of opening from nip point</i>	<i>Maximum width of opening</i>
0 to 38mm	6mm
39 to 63mm	10mm
64 to 88mm	13mm
89 to 140mm	15mm
141 to 165mm	19mm
166 to 190mm	22mm
191 to 215mm	32mm

8. **Silver and ribbon lappers (cotton).**- The calendar drums and the lap spool shall be provided with a guard to prevent access to the nip between the in running rolls.
9. **Speed frames.** - Jack box wheels at the head stock shall be guarded and the guard shall have interlocking arrangement.
10. **Spinning mules.**- Wheels on spinning mule carriages shall be provided with substantial wheel guards, extending to within 6mm of the rails.
11. **Warpers.**- Swiveled double-bar gates shall be installed on all warpers operating in excess of 410 metres/min. These gates shall have interlocking arrangement, except for the purpose of inching or jogging:  
Provided that the top and bottom bars of the gate shall be at least 1.05 and 0.53 metres high from the floor or working platform and the gate shall be located 38 mm. from the vertical tangement to the beam head.
12. **Slashers.**
  - (1) **Cylinder dryers.**-
    - (a) All open nips of in-running rolls shall be guarded by nip guards conforming to the requirements in paragraph 7.
    - (b) When slashers are operated by control levers, these levers shall be connected to a horizontal bar or treadle located not more than 170cm. above the floor to control the operation from any point.
    - (c) Slashers operated by push button control shall have stop start buttons located at each end of the machine, and additional buttons located on both sides of the machine at the size box and the delivery end. If calendar rolls are used, additional buttons shall be provided at both sides of the machine at points near the nips, except when slashers are equipped with an enclosed dryer as on paragraph (b).

- (2) **Enclosed hot air dryer.-**
- (a) All open nips of the top squeezing rollers shall be guarded by nip guards conforming to the requirements in paragraph 7 (2).
  - (b) When slashers are operated by control levers, these shall be connected to a horizontal bar or treadle located not more than 170cm. above the floor to control the operation from any point.
  - (c) Slashers operated by push-button control shall have stop and start buttons located at each end of the machine and additional stop and start buttons located on both sides of the machines at intervals spaced not more than 1.83 metres on centres.
13. **Looms.-** Each loom shall be equipped with suitable guards designed to minimize the danger from flying shuttles.
14. **Valves of kiers, tanks, and other containers.**
- (1) Each valve controlling the flow of steam, injurious gases or liquids into kier or any other tank or container into which a person is likely to enter in connection with a process, operation, maintenance or for any other purpose, shall be provided with a suitable locking arrangement to enable the said person to lock the valve securely in the close position and retain the key with him before entering the kier, tank or container.
  - (2) Wherever boiling tanks, caustic tanks and any other containers from which liquids which are hot, corrosive or toxic may overflow or splash are so located that the operator cannot see the contents from the floor or working area emergency shut off valves which can be controlled from a point not subject to danger of splash shall be provided to prevent danger.
15. **Shearing machines.-** All revolving blades on shearing machines shall be guarded so that the opening between the cloth surface and the bottom of the guard will not exceed 10mm.
16. **Continuous bleaching range (cotton and rayon)-** The nip of all in-running rolls on open-width bleaching machine rolls shall be protected with a guard to prevent the worker from being caught at the nip. The guard shall extend across the entire length of the nip.
17. **Mercerizing range (piece goods).**
- (1) A stopping device shall be provided at each end of the machine.
  - (2) A guard shall be provided at each end of the frame between the in-running chain and the clip opener.
  - (3) A nip guard shall be provided for the in-running rolls of the mangle and washers and the guard shall conform to the requirements in paragraph 7 (2).
18. **Tenter frames.**
- (1) A stopping device shall be provided at each end of the machine.
  - (2) A guard shall be provided at each end of the machine frame at the in-running chain and clip opener.
19. **Paddlers.-** Suitable nip guards conforming to the requirement in paragraph 7 (2) shall be provided to all dangerous in-running rolls.
20. **Centrifugal extractors**
- (1) Each extractor shall be provided with a guard for the basket, and the guard shall have interlocking arrangement.
  - (2) Each extractor shall be equipped with a mechanically or electrically operated brake to quickly stop the basket when the power driving the basket is shut off.

21. **Squeezer or wringer extractor, water mangle, starch mangle, back washer ( worsted yarn) crabbing machines, and decanting machines.**- All in-running rolls shall be guarded with nip guards conforming to the requirements in paragraph 7 (2).
22. **Sanforizing and palmer machine**
- (1) Nip guards shall be provided on all accessible in-running rolls and these shall conform to the requirements in paragraph 7(2).
  - (2) Access from the sides to the nips of in-running rolls should be fenced by suitable side guards.
  - (3) A safety trip rod, cable or wire centre cord shall be provided across the front back of all palmer cylinders extending the length of the face of the cylinder. It shall operate readily whether pushed or pulled. The safety trip shall not be more than 170cm. above the level at which the operator stands and shall be readily accessible.
23. **Rope washers**
- (1) Splash guards shall be installed on all rope washers unless the machine is so designed as to prevent the water or liquid from splashing the operator, the floor or working surface.
  - (2) A safety trip rode, cable or wire centre cord shall be provided across the front and back of all rope washers extending the length of the face of the washer. It shall operate readily whether pushed or pulled/. This safety trip shall be not more than 170cm. above the level on which the operator stands and shall be readily accessible.
24. **Laundry washer tumbler or shaker**
- (1) Each dyeing tumbler, each double cylinder shaker or clothes tumbler and each washing machine shall be equipped with an interlocking arrangement which will prevent the power operation of the inside cylinder when the outer door on the case or shell is open, and which will also prevent the outdoor on the case or shell from being opened without shutting off the power and the cylinder coming to a stop. This should not prevent the movement of the inner cylinder by means of a hand operated mechanism or an inching device.
  - (2) Each closed barrel shall also be equipped with adequate means for holding open the doors or covers of the inner and out cylinders or shells while it is being loaded or unloaded.
25. **Printing machine (roller type).**
- (1) All in-running rolls shall be guarded by nip guards conforming to the requirement in paragraph 7 (2)
  - (2) The engraved roller gears and the large crown wheel shall be guarded.
26. **Calenders.**- The nip at the in-running side of the rolls shall be provided with a guard extending across the entire length of the nip and arranged to prevent the fingers of the workers from being pulled in between the rolls or between the guards and the rolls, and so constructed that the cloth can be fed into the rolls safely.
27. **Rotary staple cutters.**- The cutter shall be protected by a guard to prevent hands reaching the cutting zone.
28. **Plaiting machines.**- Access to the tap between the knife and card bar shall be prevented by a guard.
29. **Hand bailing machine.**- An angle iron handle-stop guard shall be installed at right angle to the frame of the machine. The stop guard shall be so designed and so located that it will prevent the handle from traveling beyond the vertical position should the handle slip from the operator's hand when the pawl has been released from the teeth of the take up gear.
30. **Flat-work ironer.**- Each flat-work or collar ironer shall be equipped with a safety bar or other guard across the entire front of the feed or first pressure rolls, so arranged that the striking bar or guard by the

hand of the operator or other person will stop the machine. The guard shall be such that the operator or other person cannot reach into the rolls without removing the guard. This may be either a vertical guard on all sides or a complete cover. If a vertical guard is used, the distance from the floor or working platform to the top of guard shall be not less than 1.83 metres.

### Schedule II

#### COTTON GINNING

**Line shaft.-** The line shaft or second motion in cotton ginning factories when below floor level, shall be completely enclosed by a continuous wall or unclimbable fencing with only so many openings as are necessary for access to the shaft for removing cotton seed, cleaning and oiling and such opening shall be provided with gates or doors which shall be kept closed and locked.

### Schedule III

#### WOOD-WORKING MACHINERY

1. **Definitions.** – For the purpose of this schedule-
  - (a) ‘Wood-working machine’ means a circular saw, band saw, planing machine, chain mortising machine or vertical spindle moulding machine operating on wood or cork.
  - (b) ‘Circular saw’ means a circular saw working in bench (including a rack bench) but does not include a pendulum or similar saw which is moved towards the wood for the purpose of cutting operation.
  - (c) “Band saw” means a band saw, the cutting portion of which runs in a vertical direction but does not including a long saw or band re-sawing machine.
  - (d) “Planing machine” means a machine for overhand planing or for thicknessing or for both operations.
2. **Stopping and starting device.-** An efficient stopping and starting device shall be provided on every wood-working machine. The control of this device shall be of such a position as to be readily and conveniently operated by the person in charge of the machine.
3. **Space around machine.-** The space surrounding every wood-working machine in motion shall be kept free from obstruction.
4. **Floors.** The Floor surrounding every wood-working machine shall be maintained in good and level condition and shall not be allowed to become slippery, and as far as practicable shall be kept free from chips or other loose material.
5. **Training and Supervision.**
  - (i) No person shall be employed at a wood working machine unless he has been sufficiently trained to work that class of machine, or unless the works under the adequate supervision of a person who has a thorough knowledge of the working of the machine.
  - (ii) A person who is being trained to work-working machine be fully and carefully instructed as to the dangers of the machines and precautions to be observed to secure safe working of the machine.
6. **Circular saws.-** Every circular saw shall be fenced as follows:-
  - (a) Behind and in direct line with the saw there shall be a moving knife, which shall have a smooth surface, shall be strong rigid and easily adjustable and shall also conform to the following conditions:-
    - (i) The edge of the knife nearer the saw shall form, an arc of a circle having a radius not exceeding the radius of the largest saw used on the bench.

- (ii) The knife shall be maintained as close as practicable to the saw, having regard to the nature of the work being done at the time and the level of the bench table the distance between the front edge of the knife and the teeth of the saw shall not exceed half an inch.
  - (iii) For a saw of a diameter of less than 24 inches, the knife shall extend upwards from the bench table to within one inch of the top of the saw, and for a saw of a diameter of 24 inches or over shall extend upwards from the bench table to a height of at least nine inches.
- (b) The top of the saw shall be covered by a strong and easily adjustable guard, with flange at the side of the saw farthest from the fence. The guard shall be kept so adjusted that the said flange shall extend below the root of the teeth of the saw. The guard shall extend from the top of the riving knife to a point as low as practicable at the cutting edge of the saw.
  - (c) The part of the saw below the bench table shall be protected by two plates of metal or other suitable material one on each side of the saw such plates shall not be more than six inches apart and shall extend from the axis of the saw outwards to a distance of not less than two inches beyond the teeth of the saw. Metal plates, if not beaded, shall be of a thickness of at least 1/10 inch, or if beaded be of a thickness of at least 1/20 inch.
- 7. Push sticks.-** A push stick or other suitable appliance shall be provided for use at every circular saw and at every vertical spindle moulding machine to enable the work to be done without unnecessary risk.
- 8. Band saws.-** Every band saw shall be guarded as follows:-
- (a) Both sides of the bottom pulley shall be completely encased by sheet or expanded metal or other suitable material.
  - (b) The front of the top pulley shall be covered with sheet or expanded metal or other suitable material.
  - (c) All portions of the blade shall be enclosed or otherwise securely guarded except the portion of the table between the bench table and the top guide.
- 9. Planning machines.**
- (i) A planning machine (other than a planning machine which is mechanically fed) shall not be used for overhand planning unless it is fitted with a cylindrical cutter block.
  - (ii) Every planning machine used for overhand planning shall be provided with a 'bridge' guard capable of covering the full length and breadth of the cutting slot in the bench, and so constructed as to be easily adjusted both in a vertical and horizontal direction.
  - (iii) The feed roller of every planning machine used for thicknessing, except the combined machine for overhand planning and thicknessing shall be provided with an efficient guard.
- 10. Vertical spindle moulding machines.**
- (i) The cutter of every vertical spindle moulding machine shall be guarded by the most efficient guard having regard to the nature of the work being performed.
  - (ii) The wood being moulded at a vertical spindle moulding machine shall, if practicable, be held in a jig or holder of such construction as to reduce as far as possible the risk of accident to the worker.
- 11. Chain mortising machines.-** The chain of every chain mortising machine shall be provided with a guard which shall enclosed the cutters as far as practicable.
- 12. Adjustment and maintenance of guard.-** The guards and other appliances required under this schedule shall be-
- (a) maintained in an efficient state;
  - (b) constantly kept in position while the machinery is in motion; and
  - (c) so adjusted as to enable the work to be done without unnecessary risk.

**13. Exemption.-** Paragraphs 6,8,9 and 10 shall not apply to any wood-working machine in respect of which it can be proved that other safeguards are provided, maintained and used which render the machine as safe as it would be if guarded in the manner prescribed in this Schedule.

### Schedule IV RUBBER MILLS

**1. Installation of machines.-** Mills for breaking down, cracking, grating, mixing, refining and warming rubber compounds shall be so installed that the top of the front roll is not less than forty-six inches above the floor or working level. Provided that in existing installations where the top of the front roll is below this height a strong rigid distance bar guard shall be fitted across the front of the machines in such position that the operator cannot reach the nip of the rolls.

**2. Safety device**

(1) Rubber Mills should be equipped with-

- (a) hoppers so constructed or guarded that it is impossible for the operators to come into contact in any manner with the nip of the rolls;
- (b) Horizontal safety trip rods or tight wire cables across both front and rear, which will, when pushed or pulled, operate instantly to disconnect the power and apply the brakes, or to reserve the rolls.

(2) Safety-trip rod or tight wire cables on rubber mills shall extend across the entire length of the face of the rolls and shall be located more than sixty-nine inches above the floor or working level.

(3) Safety-trip rods and tight wire cables on all rubber mills shall be examined and tested daily in the presence of the Manager or other responsibility person and if and defect is disclosed by such examination and test the mill shall not be used until such defect has been remedied.

**81A. Building and structures.-** No building, wall, chimney, bridge, tunnel, road, gallery, stairway, ramp, floor, platform, staging, or other structure, whether of a permanent or temporary character, shall be constructed, situated or maintained in any factory in such a manner as to cause risk of bodily injury.

**81B. Machinery and plant.-** No machinery, plant or equipment shall be constructed, situated, operated or maintained in any factory in such a manner as to cause risk of bodily injury.

**81C. Method of work.-** No process or work shall be carried in any factory in such a manner as to cause risk of bodily injury.

**81D. Stacking and storing of materials, etc.-** No materials or equipment shall be stacked or stored in any factory in such a manner as to cause risk to bodily injury

**81E. Reaction Vessels and Kettles.**

(1) This rule applies to reaction vessels and kettles, hereinafter referred to as reaction vessels which normally work a pressure not above the atmospheric pressure but in which there is likelihood of pressure being created above the atmospheric pressure due to reaction getting out of control or any other circumstances.

(2) In the event of the vessel being heated by electrical means, a suitable thermostatic control device shall be provided to prevent the temperature exceeding the safe limit.

(3) Where steam is used for heating purpose in reaction vessel, it shall be supplied through a suitable pressure reducing valve or any other suitable automatic device to prevent the maximum permissible steam pressure being exceeded, unless the pressure of the steam in the supply line itself cannot exceed the said maximum permissible pressure.

- (4) A suitable safety valve or rupture disc of adequate size and capacity shall be provided to effectively prevent the pressure being built up in the reaction vessel beyond the safe limit. Effective arrangements shall be made to ensure that the released gases, fumes, vapours, liquids or dusts as the case may be are led away and disposed or through suitable pipes without causing any hazard. Where flammable gases or vapours are likely to be vented out from the vessel, the discharge and shall be provided with a flame arrester.
- (5) Every reaction vessel shall be provided with a pressure gauge having appropriate range.
- (6) In addition to the devices as mentioned in the foregoing provisions, means shall be provided for automatically stopping the feed into the vessel as soon as process conditions deviate from the normal limits to an extent which can be considered as dangerous.
- (7) Where necessary, an effective system for cooling, flooding or blanketing shall be provided; for the purpose of controlling the reaction and process conditions within the safe limits of temperature and pressure.
- (8) An automatic auditory and visual warning device shall be provided for clear warning whenever process conditions exceed the present limit. This advice wherever possible, shall be integrated with automatic process correction systems.
- (9) A notice pointing out the possible circumstances in which pressure above atmospheric pressure may be built up in the reaction vessel the dangers involved and the precautions to be taken by the operators shall be displayed at a conspicuous place near the vessel.

**81F. The Qualifications, conditions of service and duties of Safety Officers shall be as follows:-**

**(1) Qualifications.**

- (a) A person shall not be eligible for appointment as a Safety Officer unless he-
  - (i) possesses a recognized degree in any branch of engineering or technology and has had practical experience of working in a factory in a supervisory capacity of a period of not less than 2 years, or  
a recognized degree in Physics or Chemistry and has had practical experience of working in a factory in a supervisory capacity for a period of not less than 5 years, or  
a recognized diploma in any branch of engineering or technology and has had practical experience of working in a factory in a supervisory capacity for a period of not less than 5 years;
  - (ii) possesses a degree or diploma in industrial safety recognized by the State Government in this behalf; and
  - (iii) has adequate knowledge of the language spoken by majority of the working in the region in which the factory where he is to be appointed is situated.  
Provided that the provisions of this sub-clause shall not be applicable in the case of persons whose appointments are made on All India basis.
- (b) Notwithstanding the provisions contained in clause (a), any person who possesses-
  - a recognized degree or diploma in engineering or technology and has experience of not less than five years in a department of the Central or State Government which deals with the administration of the Factories Act, 1948 or the Indian Dock Laborers Act, 1934, or
  - a recognized degree or diploma in engineering or technology and has had experience of not less than five years, full time, on training, education, consultancy, or research in the field of accident prevention in industry or in any institution.

Shall also be eligible for appointment as Safety Officer:

Provided that the Chief Inspector may, subject to such conditions as he may specify, grant exemption from the requirements of this sub-rule, if in his opinion a suitable person possessing the necessary qualifications and experience is not available for appointment:

Provided further that, in the case of a person who has been working as a safety officer for a period not less than 3 years on the date of commencement of this rule, the Chief Inspector may, subject to such conditions as he may specify, relax all or any of the above said qualifications.

**(1) Conditions of service.**

- (a) Where the number of safety officers to be appointed in a factory as required by a notification in the Official Gazette exceeds one, one of them shall be designated as the Chief Safety Officer and shall have a status higher than that of the others. The Chief Safety Officer shall be in overall charge of the safety functions as envisaged in sub-rule (3), the other safety Officers working under this control.
  - (b) The Chief Safety Officer or the Safety (in the case of factories where only one Safety Officer is required to be appointed) as the case may be, shall be given the status of a Senior executive and he shall work directly under the control of the Chief Executive of the factory. All other Safety Officers shall be given appropriate status to enable them to discharge their functions effectively.
  - (c) The scale of pay and the allowance to be granted to the Safety Officer including the Chief Safety Officer, and the other condition of their service shall be the same as those of the officers of corresponding status in the factory.
  - (d)
    - (i) If the service of a Safety Officer is terminated otherwise than under the terms of contract, he shall have within 30 days of such termination, a right of appeal to the Chief Inspector of Factories. Provided that the Chief Inspector of Factories, may on sufficient cause being shown for the delay, extend the aforesaid time-limit to a period not exceeding six weeks.
    - (ii) On being satisfied that a Safety Officer intends to prefer an appeal under clause (i) of sub-rule (d), the Chief Inspector of Factories may stay the enforcement of the order of termination to be appealed against for such period and on such terms, if any, as he may think just and proper.
    - (iii) The Chief Inspector of Factories, shall, after giving both the parties a reasonable, opportunity of being heard, by an order for reasons to be recorded in writing, dispose of the appeal as early as possible. While disposing the appeal, the Chief Inspector of Factories, may confirm, modify or set aside the order appealed against.
    - (iv) The occupier or any Safety Officer, being aggrieved by the decision of the Chief Inspector of Factories may, within thirty days of the communication of such order to him, prefer a second appeal to the State Government; and the decision of the State Government thereon shall be final and binding on both the parties.
    - (v) On being satisfied that the Occupier or a Safety Officer intends to prefer an appeal under clause (iv) of sub-rule (d), the State Government may stay the enforcement of the decision of the Chief Inspector of Factories, for such period and on such terms and conditions, if any, as the State Government may think just and proper.
- (2) Duties of Safety Officer.-** The duties of a Safety Officer shall be to advise and assist the factory management in the fulfillment of its obligations, statutory or otherwise, concerning prevention of personal injuries and maintenance of a safe working environment. These duties shall include the following, namely:-
- (i) to advise the concerned departments in planning and organizing measures necessary for the effective control of personal injuries;



- (ii) to advise on safety aspects in all job studies, and to carry out detailed job safety studies of selected jobs;
  - (iii) to check and evaluate the effectiveness of the action taken or proposed to be taken to prevent personal injuries;
  - (iv) to advise the purchasing and stores departments in insuring high quality and availability of personal protective equipment;
  - (v) to advise on matter related to carrying out plant safety inspections;
  - (vi) to carry out plant safety inspections in order to observe the physical conditions of work and the work practices and procedures followed by workers and to render advice on measures to be adopted for removing the unsafe physical conditions and preventing unsafe actions by workers;
  - (vii) to render advice on matter related to reporting an investigation of industrial accidents and diseases;
  - (viii) to investigate selected accidents ;
  - (ix) to investigate the cases of industrial diseases contracted and dangerous occurrences reportable under Rule 123;
  - (x) to advise on the maintenance of such records as are necessary relating to accidents, dangerous occurrence and industrial diseases;
  - (xi) to promote setting up of safety committees and act as adviser and catalyst to such committees ;
  - (xii) to organize in association with the concerned departments, campaigns, competition, contests and other activities which will develop and maintain the interest of the workers in establishing and maintaining safe conditions of work and procedures ; and
  - (xiii) to design and conduct either independently or in collaboration with the training department, suitable training and educational programs for the prevention of personal injuries.
- (3) **Facilities to be provided to safety Officers.-** An occupier of the factory shall provide each Safety Officer with such facilities, equipment and information as are necessary to enable him to discharge his duties effectively.
- (4) **Prohibition of performance of other duties.-** No Safety Officer shall be required or permitted to do any work which is inconsistent with or detrimental to the performance of the duties prescribed in sub-rule (3)]

#### **81 G. Examination of eye sight of certain workers.**

- (1) No person shall be employed to operate a crane, locomotive or forklift Truck, or to give signals to a crane or locomotive operator unless his eye sight and colour vision have been examined and declared fit by a qualified ophthalmologist to work whether with or without the use of corrective glasses.
- (2) The eye sight and colour vision of the person employed as referred to sub-rule (1) shall be examined at least once in every 12 months up to the age of 45 years and once in every 6 months beyond that age.
- (3) Any fee payable for the examination of a person under sub-rule (2) shall be paid by the occupier shall not be recovered from that person.
- (4) The record of examination or re-examination carried out as required under sub-rule (1) shall be maintained in Form No. 43

#### **81 H. Railways in factories.**

- (1) This rule shall apply to railways in the precincts of a factory which are not subject to Indian Railways Act, 1890 (Central Act IX of 1890).

- (2) **Gateways.-** A gateway through which a railway track passes shall not be used for the general passage of workers into or out of a factory.
- (3) **Barriers and Turngates**
- (a) Where buildings or wall contains doors or gages which open to a railway track a barrier about one meter high shall be fixed parallel to and about beyond it at either end, so that any person passing out may become aware of an approaching train when his pace is checked at the barrier. If the traffic on the nearest track is all in one direction, the barrier shall be in the form of an “L” with the end of the short leg abutting on to the wall and the other end opening towards the approaching train.
  - (b) If the distance between wall and track cannot be made to accommodate such a barrier, the barrier of a turngate shall be placed at the inside of the opening.
  - (c) Where a footway passes close to a building or other obstruction as it approaches a railway track; a barrier or a turngate shall be fixed in such a manner that a person approaching the track is compelled to move away from the building or obstruction and thus obtain timely sight of an approaching locomotive or wagon.
- (4) **Crowds**
- (a) Worker’s pay-windows, first-aid stations and other points where a crowd may collect shall not be placed near a railway track.
  - (b) At any time of the day when workers are starting or ending work, all railway traffic shall cease for not less than five minutes.
- (5) **Locomotives**
- (a) No locomotive shall be used in shunting operations unless it is in good working order.
  - (b) Every locomotive and tender shall be provided with efficient brakes, all of which shall be maintained in good working order. Brake shoes shall be examined at suitable fixed intervals and those that are worn out replaced at once.
  - (c) Water-gauge glasses of every locomotive, whatever its boiler pressure, shall be protected with substantial glass or metal screens.
  - (d) Suitable steps and hand-holds shall be provided at the corners of the locomotive for the use of shunters.
  - (e) Every locomotive crane shall be provided with lifting and jacking pads at the four corners of the locomotive for assisting in re-railing operations.
  - (f) It shall be clearly indicated on every locomotive crane in English and in language understood by the majority of the workers in the Factory, for what weight of load and at what the crane is safe.
- (6) **Wagons.**
- (a) Every wagon (and passenger coach, if any), shall be provided either with self-acting brakes capable of being applied continuously or with efficient hand brakes which shall be maintained in good working order. The hand brake shall be capable of being applied by a person on the ground and fitted with a device for retaining them in the applied position.
  - (b) No wagon shall be kept standing within 3 meters of any authorized crossing.
  - (c) No wagon shall be moved with the help of crow bars or pinch bars.
- (7) **Ridding on locomotive, wagon or other rolling stock.-** No person shall be permitted to be upon (Whether inside or outside) any locomotive, wagon or after rolling stock except where secure foothold and handhold are provided.

(8) **Attention to brakes and doors.**

- (a) No locomotive, wagon or other rolling stock shall be kept standing unless its brakes are firmly applied and, where it is on a gradient, without sufficient number of properly constructed scotches placed firmly in position.
- (b) No train shall be set in motion until the shunting jamadar has satisfied himself that all wagon doors are securely fastened.

(9) **Projecting loads and cranes.**

- (a) If the load on a wagon projects beyond its length, a guard or dummy-track shall be used beneath the projection.
- (b) No loco-crane shall travel without load unless the job is completely lowered and positioned in line with the track.
- (c) When it is necessary for a loco-crane to travel with a load, the jib shall not be swung until the loco-crane has come to rest.

(10) **Loose-shunting.-** Loose-shunting shall be permitted only when it cannot be avoided. It shall never be performed on a wagon not accompanied by a man capable of applying and pinning down the brakes. A wagon not provided with the brakes in good working order and capable of being easily pinned down shall not be loose-shunted unless there is attached to it at least another wagon with such brakes. Loose-shunting shall not be performed with ; or against a wagon containing passengers, livestock or explosives.

(11) **Fly-shunting.-** Fly-shunting shall not be permitted on any factory railway.

(12) **The shunting Jamadar.**

- (a) Every locomotive or wagon in motion in a factory shall be in charge of a properly trained Jamadar.
- (b) Before authorizing a locomotive or wagon to be moved; the shunting jamadar shall satisfy himself that no person is under or in between or in front of the locomotive or wagon.

(13) **Hand Signals.-** The hand signals used by the shunting jamadar by day and night shall be those prescribed by the shunting rules of Railways, working under the Indian Railway Act, 1890 (Central Act IX of 1890.)

(14) **Night work and fog.**

- (a) In factories where person work at night, no movement of locomotive, wagon or other rolling stock otherwise than by hand shall be permitted between sunset and sunrise unless the tracks and their vicinity are lighted on a scale of not less than 10 lux as measured at the horizontal plane at the ground level.
- (b) In no circumstances shall any locomotive or train be moved between sunset and sunrise or at any time when there is fog, unless it carries a white head-light and a red rear-light.

(15) **Speed control**

- (a) A locomotive or train shall be not be permitted to move at a speed greater than seven kilometers per hour.
- (b) A train, locomotive, wagon or other rolling stock shall not be moved by mechanical or electrical power unless it is preceded at a distance of not less than 10 metres during the whole of its journey by a shunting jamadar. He shall be provided with signaling flags or lamp and whistle necessary for calling the attention of the driver.

**(16) Tracks**

- (a) The distance (i) between tracks and (ii) between tracks and buildings, blind walls or other structures and (iii) tracks and materials deposited on the ground shall be respectively not less than:-
- (1) from centre to centre of parallel tracks, the overall width of the widest wagon of that gauge plus twice the width of the door of such a wagon when opened directly outward plus 1 metre.
  - (2) from a building or structure other than a loading platform to the centre of the nearest track, half the overall width of the widest wagon of that gauge plus the width of its door when opened outward, plus 1.5 metres.
  - (3) from material stacked or deposited alongside the track, on the ground or on a loading platform, to the centre of the nearest track, half of the overall width of the widest wagon of that gauge plus half the widest of its door when opened directly outward, plus 1 metre.
- (b) Sleepers of a track shall be in level with the ground and at all crossings of the track with a road or walkway, the surface of the road or walk way shall be in level with the top of the rails.
- (c) All track ends shall be equipped with buffer stops of adequate strength.
- (d) Barriers of substantial construction shall be securely and permanently fixed across any door way or gateway in a building or in a wall which conceals an approaching train from view, between the building and the track as prescribed in clause (a) of sub-rule (3).
- (e) Where tracks are carried on a gantry or other elevation, a safe footway or footway with hand rails and toe boards shall be provided at all positions where persons work or pass on foot; and where there is an opening in the stage of an elevated track for the dropping of materials to a lower level the position shall be adequately fenced or the opening itself provided with a grill through which a person cannot fall.
- (f) All point levers shall have their movements parallel to, not across the direction of the track.
- (g) All loading platforms which are more than 60cm. above the level of the ground on which the track is laid and more than 15 metres in length shall be provided with stops at intervals not greater than 15 metres apart of enable the platform to be easily mounted from the track.
- (h) Turn tables on plant railways shall be provided with lacking devices which will prevent the tables from turning while locomotives or wagons are being run on or off the tables.
- (i) Workers shall be prohibited from passing under, between or above railway wagons.

**(17) Crossings**

- (a) At all crossing of track with a road or walkway, danger or crossing signs and wherever reasonably practicable, blinking lights or alarm light shall be provided. At all important crossings, gates or barriers manned by watchman shall be provided Swinging gates and barriers shall be secured against inadvertent opening or closing.
- (b) All crossings, warning signs, gates and barriers shall be illuminated during hours of darkness.

**(18) Duties of drives and shunters.-** It shall be the duty of every driver of a locomotive or a shunter including a shunting jamadar, to report without delay to their superior any defect in permanent way, locomotive or rolling stock.

**(19) Young persons not to be employed as drives of locomotive or as shunters.-** No person who is under 18 years of age and no person who is not sufficient competent and reliable shall be employed as a driver of locomotive or as a shunter.

**(20)** The Chief Inspector may be an order in writing exempt a factory or aprt of it from all or any of the provisions this rule to such extent and on such conditions as he deems necessary.

**81 I. Safety Committee.**

- (1) In every factory.-
  - (a) Where 250 or more workers are ordinarily employed; or
  - (b) which carries on any process or operation declared to be dangerous and Section 87 of the Act; or
  - (c) which carries on “Hazardous, Process” as defined under Section 2 (cb) of the Act; there shall be a “Safety Committee”
- (2) The representatives of the management on Safety Committee shall include –
  - (a) A senior official, who by his position in the organization can contribute effectively to the functioning of the committee, shall be the Chairman;
  - (b) A Safety Officer and a Factory Medical Officer wherever available and the Safety Officer in such a case shall be the Secretary of the Committee.
  - (c) A representative each from the production, maintenance and purchase departments.
- (3) The workers’ representatives on this Committee shall be elected by the workers.
- (4) The tenure of the Committee shall be two years.
- (5) Safety Committee shall meet as often as necessary but at least once in every quarter. The minutes of the meeting shall be recorded and produced to the Inspector on demand.
- (6) Safety Committee shall have the right to be adequately and suitably informed of,-
  - (a) Potential safety and health hazards to which the workers may be exposed at workplace.
  - (b) data on accidents as well as data resulting from surveillance of the working environment and of the health of workers exposed to hazardous substances so far as the factory is concerned, provided that the Committee undertakes to use the data on a confidential basis and solely to provide guidance and advice on measures to improve the working environment and the health and safety of the workers.
- (7) Function and duties of the Safety Committee shall include-
  - (a) assisting and co-operating with the management in achieving the aims and objectives outlined in the “Health and Safety Policy” of the occupier;
  - (b) dealing with all matters concerning health, safety and environment and to arrive at practicable solutions to problems encountered;
  - (c) creating safety awareness amongst all workers;
  - (d) undertaking educational, training and promotional activities;
  - (e) discussing reports on safety, environmental and occupational health surveys, safety audits, risk assessment, emergency and disaster management plans and implementation of the recommendations made in the reports;
  - (f) carrying out health and safety surveys and identifying causes of accidents;
  - (g) looking into any complaint made on the likelihood of an imminent danger to the safety and health of the workers and suggesting corrective measures ; and
  - (h) reviewing the implementation of the recommendations made by it.
- (8) Where owing to the size of the factory, or any other reasons, the functions referred to in sub-rule (7) cannot be effectively carried out by the Safety Committee; it may establish sub-committees as may be required to assist it.

**81J. Quality of Personal Protective Equipments** – All personal Protective Equipments provided to the worker as required under any of the provision of the Act or the Rules shall have certification by ISI.

**81K. Protective Equipments** – The Inspector may having regard to the nature of the hazards involved in work and process being carried out order the occupier or the manager in writing to supply to the workers exposed to particular hazard any personal protective equipment as may be found necessary.

**81L. Ovens and Driers**

- (1) **Application** – This rule shall apply to ovens and driers, except those used in laboratories or kitchen of any establishment and those which have a capacity below 325 litres.
- (2) **Definition** – For the purpose of this Rule, Oven or drier means enclosed structure, receptacle, compartment or box which is used for baking drying or otherwise processing of any article or substance at a temperature higher than the ambient temperature of the air in the room or space in which the oven or drier is situated, and in which a flammable or explosive mixture of air and a flammable substance is likely to be evolved within the enclosed structure, receptacle, compartment or box or part thereof on account of article or substance which is backed, dried or otherwise processed within in its.
- (3) **Separate electrical connection** – Electrical power supplied to every oven or drier shall be by means of a separate circuit provided with isolation switch.
- (4) **Design, Construction, examination and testing** –
  - (a) Every oven or drier shall be properly designed on sound engineering practice and be of good construction, sound materials and adequate strength, free from any patent defects and safe if properly used.
  - (b) No oven or drier shall be taken into use in a factory for other first time unless a Competent Person has thoroughly examined all its parts and carried out the tests as are required to establish that the necessary safe system and controls provided for safety in operation for the processes for which it is to be used and a certificate of such examination and tests signed by that Competent Person has been obtained and is kept available for inspection.
  - (c) All parts of an oven or drier which has undergone any alterations or repair which has the effect of modifying any of the design characteristics shall not be used unless a thorough examination and tests as have been mentioned in clause (b) has been carried out by a Competent Person and a certificate of such examination and tests signed by that Competent Person has been obtained and is kept available for Inspection.
- (5) **Safety ventilation**
  - (a) Every oven or drier shall be provided with a positive and effective safety ventilation system using one or more motor driven centrifugal fans so as to dilute any mixture of air and any flammable substance that may be formed within the oven or drier and maintain the concentration of the flammable substances in the air at a safe level of dilution.
  - (b) The safe level of dilution referred to in clause (a) shall be so as to achieve a concentration of the concerned flammable substance in air of not more than 25 per cent of its lower explosive limit: Provided that a level of concentration in air up to 50 per cent of the lower explosive limit of the concerned flammable substance may be permitted to exist subject to installation and maintenance of an automatic device which –
    - (i) Shows continuously the concentration of the flammable substances in air present in the oven or drier at any instant;
    - (ii) Sounds an alarm when the concentration of the flammable substance in air in any part of the oven or drier reaches a level of 30 percent of its lower explosive limit: and
    - (iii)Shuts down the heating system of the oven or drier automatically when the concentration in air of the flammable substance in any part of the oven or drier reaches a level of 60 percent of

its lower explosive limit, is provided to the oven or drier and maintained in efficient working condition.

- (c) No oven or drier shall be operated without its safety ventilation system working in an efficient manner
- (d) No oven or drier shall be operated with a level of dilution less than what is referred to in clause (b)
- (e) Exhaust ducts of safety ventilation systems should be so designed and placed that their ducts discharge the mixture of air and flammable substance away from the work-rooms and not near windows or doors and other opening from where the mixture could re-enter the work-rooms.
- (f) The fresh air admitted into the oven or drier by means of safety ventilation system shall be circulated adequately by means of circulating fan or fans through all parts of the oven or drier so as to ensure that there are no locations where the flammable substance can accumulate in the air or become packeted to any dangerous degree.
- (g) Throttling dampers in any safety ventilation system should be so designed by cutting away a portion of the damper or otherwise, that the system will handle at least the minimum ventilation rate required for safety when they are set in their maximum throttling position.

#### **(6) Explosion Panels**

- (a) Every oven or drier having an internal total space of not less than half cubic metre shall be provided with suitably designed explosion panels so as to allow release of the pressure of any possible explosion within the oven or drier through explosion vents. The area of openings to be provided by means of such vents together with the area of openings of any access doors which are provided with suitable arrangements for their release in case of an explosion, shall be not less than 2200 Square centimeter for every one cubic metre of volume of the oven or drier. The design of the explosion panels and doors as above said shall be such as to secure their complete release under an internal pressure of 0.25 kg. per square centimeter.
- (b) The explosion releasing panels, shall, as far as practicable be situated at the roof of the oven or drier or at those portion of the wall where persons do not remain in connection with operation of the oven or drier.

#### **(7) Inter-locking arrangements.**

- (a) In each oven or drier efficient inter-locking arrangements shall be provided and maintained to ensure that:-
  - (i) all ventilating fans and circulating fans whose failure would adversely affected the ventilation rate of flow pattern, are in operation before any mechanical conveyor that may be provided for feeding the articles or substances to be processed in the oven or drier is put into operation;
  - (ii) failure of any of the ventilating or circulating fans will automatically stop any conveyor as referred to in clause (i) as may be provided, as well as stop the fuel supply by closing the shut off valve of and shut off the ignition in the case of gas or oil fired ovens, and in the case of electrically heated ovens switch off the electrical supply to the heaters.
  - (iii) the above said mechanical conveyor is set in operation before the above said shut off valve can be energized; and
  - (iv) the failure of the above said conveyor will automatically close the above said shut off valve in the case of ovens and driers heated by gas, oil or steam and de-activate the ignition system, or cut off the electrical heaters in the case of electrically heated, ovens or furnaces.

- (8) **Automatic pre-ventilation.**- Every oven or drier heated by oil, gas, steam or electricity shall be provided with an efficient arrangement for automatic pre-ventilation consisting of at least 3 volume changes with fresh air by operation of safety ventilation fans and the circulating fans (if used) so as to effect purging of the oven or drier of any mixture of air and a flammable substance before the heating system can be activated and before the conveyor can be placed in position.
- (9) **Temperature control.**- Every oven or drier shall be provided with an automatic arrangement to ensure that the temperature within does not exceed a safe upper present limit to be decided in respect of the particular processing being carried on.
- (10) **Multistage Processes.**- Wherever materials are to be processed in ovens or driers in successive operations, suitable arrangement should be provided to ensure that the operating temperatures necessary for safe operation at each stage are maintained within the design limits.
- (11) **Combustible substances not to drip on electrical heater or burners flame.**- Effective arrangements shall be provided in every oven or drier to prevent dripping of combustible substances on electric heaters or burner flame used for eating.
- (12) **Periodic examination testing and maintenance.**
- (a) All parts of every oven and drier shall be properly maintained and thoroughly examined and the various controls as mentioned in these rule and the working if the oven or drier tested at frequent intervals to ensure its safe operation by a responsible person designed by the occupier or manager who by his experience and knowledge of necessary precaution against risks of explosion, is fit to undertake such work.
  - (b) A register shall be maintained in which the details of the various tests carried out from time to time under clause (a) shall be entered and every entry made shall be signed by the person making tests.
- (13) **Training of Operators.**- No person shall be assigned any tasks connected with operation of any oven or drier unless he has completed 18 years of age and he is properly trained.
- (14) **Polymerizing machines.**
- (a) Printed fabric shall be thoroughly dried by passing them over drying cans or through hot flue or other equally effective means, before the same is allowed to pass through the polymerizing machines.
  - (b) Infra-red ray heaters of polymerizing machines shall be out off while running the prints.

**81M. Thermic fluid heaters.**

- (1) All heater shall be of such construction that coils are removable for periodic cleaning, visual inspection and by hydraulic test.
- (2) Suitable arrangement shall be made for cooling the furnace effectively in case of power failure.
- (3) Before restarting the failure it shall be effectively purged.
- (4) Velocity of flow of the thermic fluid shall not be allowed to fail below the minimum recommended by the manufactures while the heater is in operations.
- (5) The thermic fluid shall be circulated in a closed circuit formation with an expansion-cum-de-aerator tank. This tank shall be located outside the shed where the heater is installed.
- (6) Every heater shall be provided with photo-register actuated audio-visual alarm to indicate flame failure and automatic burner cut-off.
- (7) The stack temperature monitor-cum-controller with audio-visual alarm shall be provided so as to warn the operator in case the outlet temperature exceeds the specified minimum.



- (8) Where, inspection doors are provided on the furnace they should be inter-locked with the burner itself so that they cannot be opened until burner is shut off and furnace is cooled sufficiently.
- (9) All heaters shall also be provided with the following safety devices;
  - (a) Level control in the expansion tank;
  - (b) Temperature control of thermic fluid;
  - (c) Differential pressure switch on the outlet line of the heater tubes and ;
  - (d) Temperature control device for the fuel oil supply to the burner.
- (10) All devices mentioned in paragraph 9 shall have enter-locking arrangement with burner so that in case of any predetermined limits being crossed the supply to fuel and air to burner shall automatically be cut-off.
- (11) All safety inter-locks when operated shall be indicated on the control panel of the heater by a suitable audio-visual alarm.
- (12) Every heater unit shall be provided, as standard accessory with an arrangement for sniffing with low pressure steam for nitrogen for putting out the fire.
- (13) Electric panel for the heater shall be located near the heater, but not so closed as to be exposed to spilling or leaking oil.
- (14) The heater shall be located in a place segregated from other manufacturing activities.
- (15) Explosion vent shall be so installed that release takes place at safe location.
- (16) The heater coil shall be subjected to pressure test by Competent Person once at least in every 12 months the test pressure shall not be less than twice the operation pressure.
- (17) If repairs are carried out to the coil, it shall be tested before taking it into.
- (18) The thermic fluid shall conform to the specifications prescribed by the manufactures and shall be tested by Competent Person for suitability at least once in every three months period. Such test shall include test for acidity, suspended matter, ash contents, viscosity and flash point.
- (19) Cleaning of the internal surface of the heater for soot and check up of refractory surface on the inside shall be carried out every month or as often as required depending upon working conditions. The coils shall be removed and surface of the coils cleaned thoroughly once at least in a period of six months. The burner, nozzles, oil filters and pumps shall be cleaned once a week during the period of use.
- (20) A separate register containing the following information shall be maintained:
  - (a) Weekly checks carried out confirming the effectiveness of the inter-lock.
  - (b) Weekly checks confirming that all accessories are in good state of repairs; and
  - (c) Information regarding fuel oil temperature, pressure thermic fluid inlet/outlet pressure and temperature, fuel gas temperature, recorded at 4 hourly intervals.
- (21) The heater when in operation shall always be kept in charge of trained operator.

### Rules under Sub-section (1) of Section 41 A

#### **81AA. Site Appraisal Committee.**

- (1) **Constitution.** – The following provision shall govern the functioning of the Site Appraisal Committee hereinafter be referred to as the “Committee” in these rules:-
  - (a) The State Government may constitute a “Site Appraisal Committee” and reconstitute the Committee as and when necessary;

- (b) The State Government may appoint a senior official of the Factories Inspectorate to be the Secretary of the Committee;
- (c) The State Government may appoint the following members in the committee;
  - (i) a representative of the Fire Service Organization of the State Government ;
  - (ii) a representative of the State Department of Industries;
  - (iii) a representative of the Director General of Factory Advice Service and Labour Institutes, Bombay.
- (2) No member, unless required to do so by a court of Law, shall disclose otherwise than in connection with the purpose of the Act, at any time any information relating to manufacturing or commercial business or any working process which may come to his knowledge during his tenure as a Member of this Committee.
- (3) Applications for appraisal of sites-
  - (a) Application for appraisal of sites in respect of the factories covered under section 2 (cb) of the act shall be submitted to the Chairman of the Site Appraisal Committee.
  - (b) The application for site appraisal along with 15 copies there of shall be submitted in the Form annexed to this Rule. The Committee may dispense with furnishing information on any particular item in the Application Form if it considers the same to be not relevant to the application under consideration.
- (4) Function of the Committee-
  - (a) The Secretary shall arrange to register the applications received for appraisal of site in a separate register and acknowledge the same within a period of 7 days.
  - (b) The secretary shall fix up meeting in such a manner that all the applications received and registered are referred to the Committee within a period of one month from the date of their receipt.
  - (c) The Committee may adopt a procedure for its working keeping in view the need for expeditious disposal of applications.
  - (d) The Committee shall examine the application for appraisal of a site with reference to the prohibitions and restrictions on the location of industry and the carrying on of processes and operations in different areas as per the provisions of Rule 5 of the Environment (Protection) Rules, 1986 framed under the Environment Protection Act, 1986.
  - (e) The Committee may call for documents, examine experts, inspect the site if necessary and take other steps for formulating its views in regard to the suitability of the site.
  - (f) Wherever the proposed site requires clearance by the Ministry of Industry or the Ministry of Environment and Forests, the application for site Appraisal will be considered by the Site Appraisal Committee only after such clearance has been received.

#### **FORMAT OF APPLICATION TO THE SITE APPRAISAL COMMITTEE**

1. **Name and address of the applicant.**
2. **Site Ownership Date**
  - 2.1 Revenue details of site such as Survey No. Plot No. etc.
  - 2.2 Whether the site is classified as forest and if so, whether approval of the Central Government under section 5 of the Indian Forests Act 1927 has been taken.
  - 2.3 Whether the proposed site attracts the provisions of Sections 3 (2) (v) of the E.P. Act, 1986, if so, the nature of the restrictions.

2.4 Local authority under whose jurisdiction the site is located.

### 3. **Site Plan**

3.1 Site Plan with clear identification of boundaries and total area proposed to be occupied and Showing the following details nearby the proposed site.

- (a) Historical monument, if any, in the vicinity.
- (b) Names and training institutions, petrol installations, storages of L.P.G and other hazardous substances in the vicinity and their distances from the proposed unit.
- (c) water sources (river, streams, canals, dams, water filtration plants. Etc.) in the vicinity.
- (d) Nearest hospitals, fire-stations, civil defense stations and police stations and their distances.
- (e) High tension electrical transmission lines, pipe lines for water, oil gas or sewerage; railway lines, roads, stations; jetties and other similar installations.

3.2 Details of soil conditions and depth at which had strata obtained.

3.3 Contour map of the area showing nearby hillocks and difference in levels.

3.4 Plot plan of the factory showing the entry and exit points, roads within water drains, etc.

### 4. **Project Report.**

4.1 A summary of the salient features of the Project.

4.2 Status of the organization (Government, Semi-Government, Public or Private etc.)

4.3 Maximum number of persons likely to be working in the factory.

4.4 Maximum amount of power and water requirements and source of their supply

4.5 Block diagram of the buildings and installations, proposed.

4.6 Details of housing colony, hospital, school and other infrastructural facilities proposed.

### 5. **Organization structure of the proposed manufacturing Unit factory.**

5.1 Organization diagrams of

- Proposed enterprise in general
- Health Safety and Environmental protection departments and their link age to operation and technical departments

5.2 Proposed Health and Safety Policy.

5.3 Area allocated for treatment of wastes and effluent.

5.4 Percentage outlay on safety, health and environment protection measures.

### 6. **Meteorological data relating to the site.**

6.1 Average, minimum and maximum of

- Temperature
- Humidity
- Wind velocities during the previous ten years.

6.2 Seasonal variations of wind direction.

6.3 Highest water level reached during the floods in the area recorded so far.

6.4 Lightening and seismic data of the area.

### 7. **Communication Links**

7.1 Availability of telephone/telex/wireless and other communication facilities for outside communication

7.2 Internal communication facilities proposed.

### 8. **Manufacturing Process Information**

8.1 Process flow diagram.

8.2 Brief write-up on process and technology.

- 8.3 Critical process parameters such as pressure build-up, temperature rise and run-away reactions.
- 8.4 Other external effect critical to the process having safety implications, such as ingress of moisture or water, contact with incompatible substances, sudden power failure.
- 8.5 Highlights of the build-in safety/pollution control device or measures/incorporated in the manufacturing technology.
9. **Information for Hazardous Materials.**
- 9.1 Raw materials, intermediates, products and by-products and their quantities. (Enclose Material Safety Data Sheet in respect of each hazardous substance).
- 9.2 Main and intermediate storages proposed for raw material/intermediates/products/by-products (maximum quantities to be stored at any time)
- 9.3 Transportation method to be used for materials inflow and outflow, their quantities and likely routes to be followed.
- 9.4 Safety measures proposed for:
- handling of materials;
  - Internal and external transportation; and
  - disposal (packing and forwarding of finished products).
10. **Information on Dispersal/Disposal of Wastes and Pollutants**
- 10.1 Major pollutants (gas, liquid, solid) their characteristics and quantities (average and at peak loads).
- 10.2 Quality and quantity of solid wastes generated, method of their treatment and disposal.
- 10.3 Air, water and soil pollution problems anticipated and the proposed measures to control the same, including treatment and disposal of effluents.
11. **Process Hazards Information**
- 11.1 Enclose a copy of the report on environmental impact assessment.
- 11.2 Enclose a copy of the report on Risk Assessment study.
- 11.3 Published (open or classified) reports, if any, on accident situations/ occupational health hazards in similar plants elsewhere (within or outside the country)
12. **Information of Proposed Safety and Occupational Health Measures.**
- 12.1 Details of fire fighting facilities and minimum quantity of water, CO<sub>2</sub> and or other fire fighting measures needed to meet the emergencies.
- 12.2 Details of in-house medical facilities proposed.
13. **Information of Emergency Preparedness**
- 13.1 On site emergency Plan.
- 13.2 Proposed arrangements, if any, mutual aid scheme with the group of neighboring factories.
14. **Any other relevant information.**

I certify that the information furnished above is correct to the best of my knowledge and nothing of importance has been concealed while furnishing it.

Name and Signature of the Applicant

### Rules under Section 7A (3), 41B (2) and 112

#### **81 AB. Health and Safety Policy.**

- (1) The occupier of every factory, except as provided for in sub-rule (2), shall prepare a written statement of his policy in respect of health and safety of workers at work.
- (2) All factories-
  - (a) Covered under section 2(m) (i) but employing less than 50 workers;
  - (b) Covered under section 2 (m) (ii) but employing less than 100 workers; are exempted from requirements of sub-rule (1);

Provided that they are not covered under the First Schedule under Section 2 (cb) or carrying on processes or operations declared to be dangerous under section 87 of the Act.
- (3) Notwithstanding anything contained in sub-rule (2), the Chief Inspector may require the occupier of any of the factories class or description of factories to comply with the requirements of sub-rule (1), if, in his opinion, it is expedient to do so.
- (4) The Health and Safety Policy should contain or deal with:
  - (a) declared intention and commitment of the top management to health, safety and environment and compliance with all the relevant statutory requirements;
  - (b) organizational set up to carry out the declared policy clearly assigning the responsibility at different levels ; and
  - (c) arrangements for making the policy effective.
- (5) In particular, the Policy should specify the following:
  - (a) arrangements for involving the works;
  - (b) intention of taking into account the health and safety performance of individuals at different levels while considering their career advancement;
  - (c) fixing the responsibility of the contractors, sub-contractors, transporters and other agencies entering the premises;
  - (d) Providing a resume of health and safety performance of the factory in its Annual Report ;
  - (e) relevant techniques and methods, such as safety audits and risk assessment for periodical assessment of the status on health, safety and environment and taking all the remedial measures;
  - (f) stating its intentions to integrate health and safety, in all decisions including those dealing with purchase of plant, equipment, machinery and material as well as selection and placement of personnel;
  - (g) Arrangement for informing, educating and training and re-training its own employees at different levels and the public, wherever required.
- (6) A copy of the declared Health and Safety Policy signed by the occupier shall be made available to the Inspector having jurisdiction over the factory and to the Chief Inspector.
- (7) The policy shall be made widely known by:-
  - (a) making copies available to all workers including contract workers, apprentices, transport workers, suppliers, etc.
  - (b) displaying copies of the policy at conspicuous places ; and
  - (c) any other means of communication; in a language understood by majority of workers.
- (8) The occupier shall revise the Safety Policy as often as may be appropriate, but it shall necessarily to revised under the following circumstances:-

- (a) whenever any expansion or modification having implications on safety and health of persons a work is made ; or
- (b) whenever new substance (s) or articles are introduced in the manufacturing process having implications on health and safety of person exposed to such substance.

### Rules under Section 41B Material Safety Data Sheet

#### **81AC. Collection, development and dissemination of information.**

- (1) The occupier of every factory carrying on a 'hazardous process' shall arrange to obtain or develop information in the form of Material Safety Data Sheet (MSDS) in respect of every hazardous substance or material handled in the manufacture, transportation and storage in the factory. It shall be accessible upon request to a worker for reference.
- (a) Every such Material Safety Data Sheet shall include the following information:-
- (i) The identity used on the label;
  - (ii) Hazardous ingredients of the substance;
  - (iii) Physical and chemical characteristics of the hazardous substance
  - (iv) The physical hazards of the hazardous substance; including the potential for fire, explosion and reactivity;
  - (v) The health hazards of the hazardous substance, including signs and symptoms of exposure, and any medical conditions which are generally recognized as being aggravated by exposure to the substance;
  - (vi) The primary route (s) of entry;
  - (vii) The permissible limits of exposure prescribed in the Second Schedule under section 41-F of the Act, and in respect of a chemical not covered by the said schedule, any exposure limit used or recommended by the manufacturer, importer or occupier;
  - (viii) Any generally applicable precautions for safe handling and use of the hazardous substance, which are known, including appropriate hygienic practices, protective measures during repairs and maintenance of contaminated equipment, procedures for clean-up of spills and leaks;
  - (ix) Any generally applicable control measures, such as appropriate engineering controls, work practices, or use of personal protective equipment;
  - (x) Emergency and first aid procedures'
  - (xi) The date of preparation of the Material Safety Data Sheet, or the last change to it ; and
  - (xii) The name, address and telephone number of the manufacturer, importer, occupier or other responsible party preparing or distributing the Material Safety Data Sheet, who can provide additional information on the hazardous substance and appropriate emergency procedures, if necessary.
- (b) The occupier while obtaining or developing a Material Safety Data Sheet in respect of a hazardous substance shall ensure that the information recorded accurately reflects the scientific evidence used in making the hazard determination. If he becomes newly aware of any significant information regarding the hazards of a substance, or ways to protect against the hazards, this new information shall be added to the Material Safety Data Sheet as soon as practicable.
- (c) An example of such Material Safety Data Sheet is given in the Schedule to this Rule.
- (2) **Labeling.-** Every container of a hazardous substance shall be clearly labeled or marked to identify:
- (a) the contents of the container ;
  - (b) the name and address of the manufacturer or importer of the hazardous substances;

- (c) the physical and health hazards ; and
- (d) the recommended person protective needed to work safety with the hazardous substance:

**Schedule**

**MATERIAL SAFETY DATA SHEET  
SAMPLE MODEL**

**Section 1- Material Identification and Use**

Material Name/Identifier

Manufacturer's Name	Supplier's Name
Street Address	Street Address
City State	City State
Postal Code Emergency Telephone No.	Postal Code Emergency Telephone No.
Chemical Name	Chemical Identity
Trade Name and Synonyms	Product Use

**Section II-Hazardous Ingredients of Material**

Hazardous Ingredients	Approximate Concentration%	C.A.S. or Un Numbers	L.D. 50 (Specify Species & Route)	LC 50 (Specify Species & Route)
-----------------------	----------------------------	----------------------	-----------------------------------	---------------------------------

**Section III-Physical Data for Material**

Physical State	Odour and Appearance	Odour Threshold (p.p.m.)	Specific Gravity
Gas—Liquid—Solid	Evaporation Rate	Boiling Point(°C)	Freezing (°C)
Vapour Pressure (mm)	Vapour density (Air-1)	Density (g/ml.)	Coefficient of Water/ oil distribution
Solubility in water (20°C)	PH		

**Section IV-Fire and Explosion Hazard of Material**

Flammability	Yes /No	If yes, under what conditions
Means of Extinction		
Special Procedures		
Flash Point (°C) and Method	Upper Explosion Limit (% by volume)	Lower Explosion Limit (% by volume)
Auto-ignition Temperature (°C)	TDG Flammability classification	Hazardous Combustion Products
Explosion Date- Sensitivity Chemical Impact		Sensitivity to Static Discharge

**Section V- Reactive Data**

Chemical Stability	Yes / No	If no, under what conditions
Incompatibility to other substances	Yes / No	If yes, which ones

Reactivity and under what condition  
 Hazardous Decomposition products  
 Material Name/Identifier

**Section VI- Toxicological Properties of Material**

Route of Entry

	Skin Contact	Skin Absorption	Eye contact
	Inhalation	Inhalation	Ingestion
	Acute	Chronic	

Effects of Acute Exposure of Material  
 Effects of Chronic Exposure to Material

	Exposure Limit (s)	Irritancy of Material
--	--------------------	-----------------------

Sensitization to Material  
 Synergistic Materials

	Carcinogenicity, Reproductive Effects, Teratogenicity, Mutagenicity
--	---

**Section VII – Preventive Measures**

Personal protective Equipment

Gloves (Specify)	Respiratory ( Specify)	Eye (specify)
Footwear (Specify)	Clothing (Specify)	Other (Specify)

Engineering Controls (e.g. ventilation, enclosed process etc.)  
 Please specify  
 Leak and Spill Procedures  
 Waste Disposal  
 Handling Procedures and Equipment  
 Storage Requirements  
 Special Shipping Information

**Section VIII- First Aid Measure**

First Aid Measure  
 Source used  
 Additional Information

**Section IX-Preparation date of M.S.D.S**

Prepared by (Group, Department, etc.)	Phone No	Date
---------------------------------------	----------	------

Notes:

1. CAs or UN Number - Chemical Abstract Service or United Nations (UN) Number.
2. LD 50-Lethal Doze - 50% (LD 50-Specify Species and route)
3. LG-50-Lethal Concentration - 50% (LC 50-Specify Species and route)
4. TDG Flammability - Transport of Dangerous Goods Flammability Classification by United Nations



**81AD. Disclosure of information to workers.**

- (1) The occupier of a factory carrying on a 'hazardous process' shall supply to all workers the following information in relation to handling of hazardous material or substances in the manufacture, transportation, storage and other processes:
  - (a) Requirements of Section 41B, 41C and 41H of the Act;
  - (b) A list of 'hazardous process' carried on in the factory'
  - (c) Location and availability of all Material Safety Data Sheets as per Rule 81 AC;
  - (d) Physical and health hazards arising from the exposure to or handling of substances;
  - (e) Measures taken by the occupier to ensure safety and control of physical and health hazards;
  - (f) Measures to be taken by the workers to ensure safe handling, storage and transportation of hazardous substances;
  - (g) Personal Protective Equipment required to be used by workers employed in 'hazardous process' or 'dangerous operations';
  - (h) Meaning of various labels and markings used on the containers of hazardous substances as provided under Rule 81 AC;
  - (i) Signs and symptoms likely to be manifested on exposure to hazardous substances and to whom to report;
  - (j) Measures to be taken by the workers in case of any spillage or leakage of a hazardous substance;
  - (k) Role of workers vis-a-vis the emergency plan of the factory, in particular the evacuation procedures;
  - (l) Any other information considered necessary by the occupier to ensure safety and health of workers.
- (2) The information required by sub-rule(1) shall be complied and made known to workers individually through supply of booklets or leaflets and display of cautionary notices at the work places.
- (3) The booklets, leaflets and the cautionary notice displayed in the factory shall be in the language understood by the majority of the workers, and also explain to them.
- (4) The Chief Inspector may direct the occupier to supply further information to the workers as deemed necessary.

**81AE. Disclosure of information to the Chief Inspector.**

- (1) The occupier of every factory carrying on 'hazardous process' shall furnish in writing to the local Inspector and the Chief Inspector a copy of all the information furnished to the workers.
- (2) A copy of compilation of Material Safety Data Sheets in respect of hazardous substances used, produced or stored in the factory shall be furnished to the Chief Inspector and the local Inspector.
- (3) The occupier shall also furnish any other information asked for by the Chief Inspector or the Inspector from time to time for the purpose of this Act and rules made there under.

**81AF. Information on Industrial wastes.**

- (1) The information furnished under Rules 81AD and 81AE shall include the quantity of the solid and liquid wastes generated per day, their characteristics and the method of treatment such as incineration of solid wastes, chemical and biological treatment of liquid waste and arrangements for their final disposal.
- (2) It shall also include information on the quality and quantity of gaseous waste discharged through the stacks or other opening, and arrangements such as provision of scrubbers, cyclone separators, electrostatic precipitators or similar arrangements made for controlling pollution of the environment.

(3) The occupier shall also furnish the information prescribed in the sub-rule (1) and (2) to the State Pollution Control Board.

**81AG. Review of the information furnished to workers etc.**

- (1) The occupier shall review in every calendar year and modify if necessary, the information furnished under Rule 81AD and 81AE to the workers, and the Chief Inspector.
- (2) In the event of any change in the process or operations or methods of work or when any new substance is introduced in the process or in the event of a serious accident taking place, the information so furnished shall be reviewed and modified to the extent necessary.

**81AH. Confidentiality of information.-** The occupier of a factory carrying on 'hazardous process' shall disclose all information needed for protecting safety and health of the workers and the general public in the neighborhood to-

- (a) his workers;
- (b) local Inspector of Factories and
- (c) Chief Inspector.

as required under Rules 81AD, and 81AE. If the occupier is of the opinion that the disclosure of details regarding the process and formulations will adversely affect his business interest, he may make a representation to the Chief Inspector stating the reasons for withholding such information. The Chief Inspector shall give an opportunity to the occupier of being heard and pass an order on the representation.

An occupier aggrieved by an order of Chief Inspector may prefer an appeal before the State Government within a period of 30 days. The State Government shall give an opportunity to the occupier of being heard and pass an order. The order of the State Government shall be final.

**Rules under Sections 41B, 41C – Specific Responsibility of the  
Occupier in Relation to Hazardous Process**

**81 AI. Medical Examination.**

- (1) Workers employed in a 'hazardous process' shall be medically examined by a qualified medical practitioner hereinafter to as Factory Medical Officer, in the following manner:-
  - (a) Once before employment, to ascertain physical fitness of the person to do the particular job;
  - (b) Once in a period of 6 months, to ascertain the health status of all the workers in respect of occupational health hazardous to which they are exposed; and in cases where in the opinion of the Factory medical Officer it is necessary to do so at a shorter interval in respect of any worker;
  - (c) The details or pre-employment and periodical medical examinations carried out as aforesaid shall be recorded in the Health Register in Form 17.
- (2) No person shall be employed in hazardous process for the first time without a Certificate of Fitness in Form 29 granted by the Factory Medical Officer. If the Factory Medical Officer declares a person unfit for being employed in any process covered under sub-rule(1) such a person, shall have the right to appeal to the Inspector who shall refer the matter to the Certifying Surgeon whose opinion shall be final in this regard. If the Inspector is also a Certifying Surgeon, he may dispose of the application himself.
- (3) Any findings of the Factory Medical Officer revealing any abnormality unsuitability of any person employed in the process shall immediately be reported to the Certifying Surgeon who shall in turn, examine the concerned worker and communicate his findings to the occupier within 30 days. If the Certifying Surgeon is of the opinion that the worker so examined is required to be taken away from the process for health protection, he will direct the occupier accordingly, who shall not employ the said worker in the same process. However, the worker so taken away shall be provided with alternate

placement unless he is in the opinion of the Certifying Surgeon, fully incapacitated in which case the worker affected shall be suitably rehabilitate

- (4) A certifying Surgeon on his own motion or on a reference from an Inspector may conduct medical examination of a worker to ascertain the suitability of his employment in a hazardous process or for ascertaining his health status. The opinion of the Certifying Surgeon in such a case shall be final. The fee required for this medical examination shall be as prescribed in Appendix II and it shall be paid by the Occupier by way of Treasury remittance.
- (5) The worker taken away from employment in any process under sub-rule (2) may be employed again in the same process only after obtaining the Fitness Certificate from the Certifying Surgeon and after making entries to that effect in the Health Register.
- (6) The worker required to undergo medical examination under these rules and for any medical survey conducted by on behalf of the Central or the State Government shall not refuse to undergo such medical examination.

### **81 AJ. Occupational Health Centres.**

- (1) In respect of any factory carrying on 'hazardous process', there shall be provided and maintained in good order an Occupational Health Centre with the services and facilities as per scale laid down hereunder:-
  - (a) For factories employing upto 50 workers-
    - (i) the services of a Factory Medical Officer on retainer-ship basis, in his clinic to be notified by the occupier. He will carry out the pre-employment and periodical medical examination as stipulated in rule 81AI and render medial assistance during emergency;
    - (ii) a minimum of 5 persons trained in first-aid procedures amongst whom atleast one shall always be available during the working period;
    - (iii) a fully equipped first-aid box.
  - (b) For factories employing 51 to 200 workers-
    - (i) An Occupational Health Centre having a room with a minimum floor area of 15sq.m. with floors and walls made of smooth an impervious surface and with adequate illumination and ventilation as well as equipment as per the schedule annexed to this Rule;
    - (ii) a part-time Factory Medical Officer shall be in over all charge of the Centre who shall visit the factory at least twice in a week and whose services shall be readily available during medical emergencies;
    - (iii) One qualified and trained dresser-cum-compounder on duty throughout the working period;
    - (iv) a fully equipped first aid box in all the departments.
  - (c) For factories employing above 200 workers-
    - (i) one full-time Factory Medical Officer for factories employing up to 500 workers and one more Medical Officer for every additional 1000 workers or part thereof;
    - (ii) an Occupational Health Centre having at least 2 rooms each with a minimum floor are of 15sq. metre with floors and walls made of smooth and impervious surface and adequate illumination and ventilation as well as equipment as per the schedule annexed to this Rule;
    - (iii) there shall be one nurse, one dresser-cum-compounder and one sweeper-cum-ward boy throughout the working period;
    - (iv) the Occupational Health Centre shall be suitably equipped to mange medical emergencies.
- (2) The factory Medical Officer required to be appointed under sub-rule (1) shall have qualifications included in Schedules to the Indian Medical Degree Act of 1916 or in the Schedules to the Indian

Medical Council Act, 1956 and possess a Certificate of Training in Industrial Health of minimum three months duration recognized by the State Government:

Provided that-

- (i) a person possessing a Diploma in Industrial Health or equivalent shall not be required to possess the certificate of training as aforesaid;
  - (ii) the Chief Inspector may, subject to such conditions as he may specify, grant exemption from the requirement of this sub-rule, if in this opinion a suitable person possessing the necessary qualification is not available for appointment;
  - (iii) in case of a person who has been working as a Factory Medical Officer for a period of not less than 3 years on the date of commencement of this rule, the Chief Inspector may, subject to the condition that the said person shall obtain the aforesaid certificate of training within a period of three years; relax the qualification.
- (3) The syllabus of the course leading to the above certificate, and the organizations conducting the Course shall be approved by the Direct General of Factory Advice service and Labour Institutes or the State Government in accordance with the guidelines issued by the DGFASLI.
- (4) Within one month of the appointment a Factory Medical Officer, the occupier of the Factory shall furnish to the Chief Inspector the following particulars-
- (a) Name and address of the Factory Medical Officer,
  - (b) Qualification;
  - (c) Experience, if any; and
  - (d) the rules under which appointed.

### **Schedule**

#### **Equipment for Occupational Health Centre in Factories**

1. A glazed sink with hot and cold water always available
2. A table with a smooth top at least 180cm X 105cm.
3. Means for sterilizing instruments
4. A couch
5. Two buckets or containers with close fitting lids
6. A kettle and spirit stove or other suitable means of boiling water.
7. One bottle of spirits ammoniac aromaticus (120ml)
8. Two medium size sponges
9. Two 'kidney' trays
10. Four cakes of toilet, preferably antiseptic soap
11. Two glass tumblers and two wine glasses
12. Two clinical thermometers
13. Two tea spoons
14. Two graduated (120ml) measuring glasses
15. One wash bottle (1000cc) for washing eyes
16. One bottle (one litre) carbolic lotion 1 in 20
17. Three chairs
18. One screen
19. One electric hand torch
20. An adequate supply of tetanus toxoid
21. Coramine liquid (60ml)

22. Tablets-antihistaminic, antispasmodic (25each)
23. Syringes with needles-2cc, 5cc and 10cc.
24. Two needle holders, big and small
25. Suturing needles and materials
26. One dissecting forceps
27. One dressing forceps
28. One scalpels
29. One stethoscope
30. Rubber bandage-pressure bandage
31. Oxygen cylinder with necessary attachments
32. One Blood Pressure apparatus
33. One Patellar Hammer
34. One peak-flow meter for lung function measurement
35. One stomach wash set
36. Any other equipment recommended by the Factory Medical Officer according to specific need relating to manufacturing process.
37. In addition-
  - (1) For factories employing 51 to 200 workers-
    1. Four plain wooden splints 900mm X 100mm X 6mm.
    2. Four plain wooden splints 350mm X 75mm X 6mm.
    3. Two plain wooden splints 250mm X 50mm X 12mm.
    4. One pair artery forceps
    5. Injections-mophia, pethidine, atropine, adrenaline, coramine, novacan (2 each)
    6. One surgical scissors
  - (2) For factories employing above 200 workers-
    1. Four plain wooden splints 900mm X 100mm X 6mm.
    2. Eight plain wooden splints 350mm X 75mm X 6mm.
    3. Four plain wooden splints 250mm X 50mm X 12mm.
    4. Two pairs artery forceps
    5. Injections-mophia, pethidine, atropine, adrenaline, coramine, novacan (4 each)
    6. Two surgical scissors

**81AK. Ambulance Van.**

- (1) In any factory carrying on 'hazardous process', there shall be provided and maintained in good condition, a suitably constructed ambulance van equipped with items as per sub-rule (2) and name by a full-time Driver-cum-Mechanic and a Helper trained in first-air, for the purposes of transportation of serious cases of accidents or sickness. The ambulance van shall not be used for any purpose other than the purpose stipulated herein and will normally be stationed at or near the Occupational Health Centre: Provided that a factory employing less than 200 workers, may make arrangements for procuring such facility at short notice from a nearby hospital or other places, to meet any emergency.
- (2) The Ambulance should have the following equipments:

**(a) General**

A wheeled stretched with folding and adjusting devices; with the head of the stretcher capable of being tilted upward; Fixed suction unit with equipment; Fixed oxygen supply with equipment; Pillow with case; Sheets; Blankets; Towels; Emesis bag; Bed pan; Urinal; Glass

**(b) Safety Equipment**

Flares with life of 30 minutes;- Flood lights; Flash lights;- Fire extinguisher dry power type; Insulated gauntlets

**(c) Emergency Care Equipments**

(i) Resuscitation

Portable suction unit; Portable oxygen units; Bag-valve-mask, hand operated artificial ventilation unit; Airways; Mouth gags: Tracheotomy adaptors; Short spine board I.V. Fluids with administration unit; B.P. Manometer; Stethoscope

(ii) immobilization

Long and short padded boards; Wire ladder splints; Triangular bandage;- Long and short spine boards

(iii) Dressings

Gauze pads-100mm X 100mm;- Universal dressing 250mm X 900mm  
Roll of aluminium foils; Soft roller bandages 150mm X 900mm  
Adhesive tape in 75mm roll; Safety pins;  
Bandage sheets; Burn Sheet.

(iv) Poisoning

Syrup of Ipecac; Activated Charcoal Pre-packeted in dozes; Snake bite kite; Drinking water

(v) Emergency medicines

As per requirements (under the advice of Medical Officer only.)

**81AL. Decontamination facilities.-** In every factory, ' carrying out hazardous process', the following provisions shall be made to meet emergency:-

- (a) fully equipped first aid box;
- (b) readily accessible means of water for washing by workers as well as for drenching the clothing of workers who have been contaminated with hazardous and corrosive substance; and such means shall be as per the scale shown in the table below :-

**TABLE**

<i>No. of persons employed at any time</i>	<i>No. of drenching showers</i>
(i) Upto 50 workers	2
(ii) Between 51 to 200 workers	2+1 for every additional 50 or part thereof
(iii) Between 201 to 500 workers	5+1 for every additional 100 or part thereof
(iii) 501 workers and above	8+1 for every additional 200 or part thereof

- (c) a sufficient number of eye wash bottles filled with distilled water or suitable liquid, kept in boxes or cupboards conveniently situated and clearly indicated by a distinctive signs which shall be visible at all time.

**81AM. Making available Health Records to workers.**

- (1) The occupier of every factory carrying out a 'hazardous process' shall make accessible the health records including the record of worker's exposure to hazardous process or, as the case may be, the medical records of any worker for his perusal under the following conditions:-
  - (a) Once in every six months or immediately after the medical examination whichever is earlier;
  - (b) If the Factory Medical Officer or the Certifying Surgeon as the case may be, is of the opinion that the worker has manifest designs and symptoms of any notifiable disease as specified in the Third Schedule of the Act;

- (c) If the worker leaves the employment;
  - (d) If any one of the following authorities so direct-
    - the Chief Inspector of Factories;
    - the Health Authority of the Central or State Government;
    - Commissioner of Workmen's Compensation;
    - the Director General, Employee's State Insurance Corporation.
    - the Director, Employees State Insurance Corporation(Medical Benefits); and
    - the Director General; Factory Advice Service and Labour Institutes.
- (2) A copy of the up-to-date health records including the record of worker's exposure to hazardous process or, as the case may, the medical records shall be supplied to the worker on receipt of an application from him. X-ray plates and other medical diagnostic reports may also be made available for reference to his medical practitioner.

### **81AN. Qualification, etc. of Supervisors.**

- (1) All persons who are required to supervise the handling of hazardous substances shall possess the following qualifications and experience:
- (a) (i) A degree in Chemistry or Diploma in Chemical Engineering or Technology with 5 years experience; or
  - (ii) A Master's Degree in Chemistry or Degree in Chemical Engineering or Technology with 2 years experience.
- The experience stipulated above shall be in process operation and maintenance in the Chemical Industry.
- (b) The Chief Inspector may require the supervisor to undergo training in Health and Safety.
- (2) The syllabus and duration of the above training and the organizations conducting the training shall be approved by the DGFASLI or the State Government on accordance with the guidelines issued by the DGFASLI.

**81AO. Issue of guidelines.-** For the purpose of compliance with the requirements of sub-section (1), (4) and (7) of Section 41-B or 41-C the Chief Inspector may, if deemed necessary, issue guidelines from time to time to the occupier of factories carrying on 'hazardous process'. Such guidelines may be based on National Standards, Codes of Practice, or recommendations of International Bodies such as ILO and WHO.

### **Special Rules for jute Mills**

#### **82. Site of feed tables and protective devices in Jute Mills.**

- (a) The feed table every softener machine shall as far as practicable be not less than 5 feet in length;
- (b) the feed table of such softener machine shall be provided with an automatic knocking of device with shall stop the machine in case the worker's hand is drawn in and prevent the hand from reaching the Specked rollers; and
- (c) the automatic device mentioned in clause (b) shall be maintained in an efficient state and be kept in position whenever the machinery working.

### **Special rule for Tea Factories**

**83. The roll table to be fenced and brushes for sweeping the roll table to be provided.-** In tea factories, the roll table shall be fenced to the satisfaction of the inspector and brushes shall be provided to the workers for the purpose of sweeping the roll table.

### Special rules for Brick and Tile works

**84. Finger guard to be provided at the feed end of every revolving press.-** In brick and tile works, a finger guard shall be fitted at the feed end of the full length of the mould of every revolving press.

### Special rules on ship building and ship repairing

**84A. 1. Application.-** The provisions contained in this rule shall apply as respect of the work carried out in any of the operations of ship building and ship repairing.

**2. Definitions.-** For the purpose of this rule-

- (1) "Certificate of entry" means a certificate which is given by a person who is a competent analyst and who is competent to give such certificates and includes certificates to the effect that he has in an adequate and suitable manner tested the atmosphere in the oil-tank or oil-tanks specified in the certificate and found that having regard to all the circumstances of the case, including the likelihood or otherwise of the atmosphere being or becoming dangerous, entry to the oil-tank or oil-tanks without wearing breathing apparatus may in his opinion to be permitted.
- (2) Competent analyst means- An officer of the controller of Explosive Department, Government of India duly empowered under Rule 38(c) of the Petroleum Rules, 1937.
- (3) "hot work" means any work which involves-
  - (a) Welding, burning, soldering, brazing, sand blasting or chipping by spark producing tools; or
  - (b) Use of non-flame proof electrical equipments or equipment with internal combustion engines and includes any other work which is likely to produce sufficient heat capable of igniting flammable gases or vapours.
- (4) 'naked light certificate' means a certificate which is given by a person who is a competent analyst and who is competent to give such certificates and includes certificate to the effect that he has in an adequate and suitable manner tested for the presence of field in the certificate and found it to be free from there from and that having regard to all the circumstances of the case including the likelihood or otherwise of the atmosphere becoming inflammable the use of naked lights, fire, lamps or heated rivets or any hot work to be carried out may in his opinion be permitted in the oil-tank, compartment, space or other part of the vessel specified in the certificate;
- (5) "oil" means any liquid which has flash point below 132<sup>0</sup>C (270<sup>0</sup>F) and also includes lubricating oil, liquid methane liquid butane and liquid propane and oils of any description.  
**Explanation.-** Flash point wherever it occurs in these rules shall be flash point as determined by Abel Closed Cup or Pensky-Marten Closed Cup procedures as described in I.S. 1448-1960.
- (6) "oil-tank" means any tank or compartment in which oil is, or has been carried'
- (7) "the operations" means-
  - (a) construction, reconstruction, or braking up of any ship or vessel, repairing, refitting, painting and finishing.
  - (b) the sealing, surfing or cleaning of its boilers ( including combustion chambers or smoke boxes), and
  - (c) the cleaning of its bilges or oil-fuel tanks or any of its tank last used for carrying oil;
- (8) "ship and vessel" have the same meanings as in the Merchant Shipping Act 1958;
- (9) "shipyard" means any yard or dry dock ( including the precincts thereof) in which ships or vessels are constructed, reconstructed, repaired, refitted or finished;



- (10) “stage” means any temporary platform on or from which persons employed perform work in connection with the operations, but does not include a boatswain’s chair;
- (11) “staging” includes any stage, and any upright, thwarts’ thwart pin, wedge, distance piece, belt or other appliance or material, not being part of the structure of the vessel, which is used in connection with the support of any state, and any guard-tails connected with a stage;
- (12) “tanker” means a vessel constructed or adopted for carrying a cargo of oil in bulk.

### Access and Staging

3. **General access to vessels in a shipyard.** All main gangways giving general access to a vessel in a shipyard, whether from the ground or from a wharf or quay, and all cross gangways leading from such a main gangway on to the vessel, shall-
  - (a) be at least 0 cm. wide,
  - (b) be securely protected on each side to a height of at least 90cm. by strongly constructed upper and lower hand-rails and by a secure too-board projecting at least 15cm. above the floor;
  - (c) be of good construction, sound material and adequate strength;
  - (d) be stable and, wherever, practicable, of permanent construction;
  - (e) be kept in position as long as required; and
  - (f) maintained in good repairs.
4. **Access to dry dock.**
  - (1) Every flight of steps giving access from ground level either to an alter or to the bottom of a dry dock shall be provided throughout on each side with a substantial hand-rail. In the case of an open side, secure fencing to a height of at least 90cm. shall be provided by means of upper and lower rails, taut ropes or chain, or by other equally safe means. For the purposes of this sub-rule a flight of steps which is divided into two by a chute for materials, with no space between either side of the chute and the steps, shall be deemed to be one flight of steps.
  - (2) Such hand-rails and fencings as aforesaid shall be kept in position save when and to the extent to which their absence is necessary (whether or not for the purpose of the operations) for the access of persons, or for the movement of materials or vessels or for traffic or working, or for repair, but hand-rails or fencing removed for any of those purpose shall be kept readily available and shall be replaced as soon as practicable.
5. **Access to vessels in dry dock**
  - (1) If a ship is lying in a dry dock for the purpose of undergoing any of the operations, there shall be provided means of access for the use of workers at such times as they have to pass, to, or from, the ship or dry dock-
    - (a) where reasonably practicable one or more ship’s accommodation ladders, or
    - (b) one or more soundly constructed gangways or similar constructions.
  - (2) The means so provided shall be not less than 55cm. wide properly secured and fenced throughout on each side to a clear height of 90cm. by means of upper and lower rails, taut ropes or chains or by any other safe means, except that in the case of the ship’s accommodation ladder, such fencing shall be necessary on one side only provided where the other side is properly protected by the ship’s side.

- (3) Where at any dry dock, there is a gangway giving access from an altar of the dock to a vessel which in the dock for the purpose of undergoing any of the operations, and the edge of the alter is unfenced, adequate hand holds shall be available for any length of the alter which workers commonly use when passing between the gangway, and the nearest flight of steps which gives access to ground level.
6. **Access to and from bulwarks.**-Where there is a gangway leading on to a bulwark of a vessel there shall be provided.
- (a) Wherever practicable, a platform at the in-board end of the gangway with safe means of access there from to the decks; or
- (b) Where such a platform is not practicable, a second gangway or stairway leading from a bulwark on to the deck which are either attached to the first mentioned gangway or place contiguous to it, in which case means of access securely protected by fencing shall be provided from the one to the other.
7. **Access to staging, etc.**
- (1) Where outside staging is erected in a shipyard, there shall be provided sufficient ladders giving direct access to the stages having regard to the extent of the staging and to the work to be done.
- (2) Where a vessel is under construction or reconstruction and workers are liable to go forward or aft or athwart ship across or along uncovered deck-beams, or across or along floors, sufficient planks shall be provided on these deck-beams or on these floors for the purpose of access to or from places of work, sufficient and suitable portable-ladders shall be provided so as to give access either from the ground or outer bottom plating to the top of the floor.
- (3) Without prejudice to any other provision in these Rules, requiring a greater width, no footway or passageway constructed of planks shall be less than 45cm. wide.
8. **Ladders.**
- (1) Subject to sub-rule(2) and (3) of this rule, every Ladder which affords a means of access, communication or support to a person shall-
- (a) be soundly constructed and properly maintained; and
- (b) be of adequate strength for the purpose for which it is used; and
- (c) be securely fixed either-
- (i) as near its upper resting place as possible, or
- (ii) Where this is impracticable at its base, or where such fixing is impracticable a person shall be stationed at the base of the ladder when in use to prevent it from slipping; and
- (d) Unless there is other adequate hand-hold, extend to a height of at least 75cm. above the place of landing or the height highest rung to be reached by the foot of any person working on the ladder, as the case may be or, if this is impracticable, to the greatest practicable height.
- (2) Requirements (c) and (d) of the Proceeding sub-rule of this Rule shall not apply to fixed ladders of a ship or to rope ladders. Effective measures by means of roping off or other similar means shall be taken to prevent the use of fixed ladders of a ship which do not comply with requirements (a) and (b) of that sub-rule.
- (3) Any worker who removes any ladder and sets it up in a new position shall, as regards that ladder, comply with requirements (c) of sub-rule (1) of this Rule.
- (4) Rope ladders shall provide foothold of a depth including any space behind the ladder of not less than 12cm. and, so far as it reasonably practicable, suitable provision shall be made for preventing such ladders from twisting.

**9. Lashing of ladders.**

- (1) A fibre rope, or a rope made with stands consisting of wire ropes covered with fibre, shall not be used to secure a ladder used for the purpose of the operations.
- (2) A wire rope shall not be used to secure any such ladder unless its ends are feruled, but this provision shall not apply in the case of an end which is so situated or protected that a person using ladder is not liable to come into contact with it so as to suffer injury.

**10. Material for staging.**

- (1) A sufficient supply of sound and substantial material and appliances shall be available in convenient place or places for the construction of staging.
- (2) All planks and other materials and appliances intended to be used or re-used for staging shall be carefully examined before being taken into use or re-use in any staging. Every examination required by this sub-rule shall be carried out by a person competent for the purpose.

**11. Staging, dry dock altars and shoring sills.**

- (1) All staging and every part thereof shall be of good construction, of suitable and sound material and of adequate strength for the purpose for which it is used and shall be properly maintained, and every upright and the thwart shall be kept so fixed, secured or placed in position as to prevent, so far as is reasonably practicable, accidental displacement.
- (2) All planks forming stages shall be securely fastened to prevent them from slipping unless extend 45cm. or more beyond the inside edge of the thwart or support on which they rest.
- (3) All staging used in connection with the operations shall be inspected before use, and thereafter at regular and frequent intervals, by a responsible person.
- (4) All dry dock altars and shoring sills on or from which persons perform work in connection with the operations shall be of sound construction and properly maintained.
- (5) All parts of stages, all parts of footways or passageways constructed of planks and all parts of dry dock altars or shoring sills, being parts on or from which person perform work in connection with the operations, shall so far as is reasonably practicable, be kept clear of all substances likely to make foothold or hand-hold insecure.

**12. Upright used for hoisting block.**

- (1) If any upright forming part of staging is used as a fixing for a pulley block for hoisting materials-
  - (a) it shall be properly housed in the ground or shall otherwise be adequately secured so as to prevent it from rising; and
  - (b) it shall be suitably protected against damage by the action of the chain or wire or other means of securing the pulley block to the upright.
- (2) No upright forming part of staging shall be used as an anchorage for a load pulley block, unless the upright is not likely to be displaced by such use.

**13. Support of stages on planks.-** Planks supported on the rungs of ladders shall not be used to support stages.**14. Suspended stages.**

- (1) Stages suspended by ropes or chains shall be secured as far as possible so as to prevent them from swinging.
- (2) A fibre rope, or a rope made of stands consisting of wire cores covered with fibre, shall not be used for suspending a stage except that fibre ropes may be used in the case of a stage of which the suspension ropes are received through blocks.

- (3) Chains, ropes, blocks and other gear used for the suspension of stages shall be of sound materials, adequate strength and suitably quality, and in good condition.
- (4) Appropriate steps shall be taken to prevent ropes or chains used for supporting a stage from coming into contact with sharp edges of any part of a vessel.

**15. Boatswains' chains**

- (1) Boatswains' chains and chains, ropes or other gear used for their suspension shall be of sound material, adequate strength and suitable quality and the chains, ropes or other gear shall be securely attached.
- (2) Suitable measures shall be taken to prevent where possible the spinning of a boatswains' chain, to prevent the tipping of a boatswain's chair and to prevent any occupant falling there from.

**16. Rising stages.-** All planks forming a rising stage at the bow end of a vessel shall be securely fastened to prevent them from slipping.

**17. Width of staging.-** Without prejudice to the other provisions of these Rules, all stages shall be of sufficient width as is reasonable in all the circumstances of the case to secure the safety of the person working thereon.

**18. Stages from which a person is liable to fall more than 2m. or into water.**

- (1) This Rules applies to stages from which a person is liable to fall a distance or more than 2m. or into water in which there is a risk of drowning.
- (2) Every stage of which this Rule applies-
  - (a) shall so far as is reasonably practicable be closed boarded, planked or plated;
  - (b) shall be so constructed or placed that a person is not liable to fall as aforesaid through a gap in the staging not being a gap necessary and no larger than necessary having regard to the nature of the work being carried on;
  - (c) shall be at least 45cm. wide.
- (3) Every side of a stage to which this rule applies shall-
  - (a) if it is not a side immediately adjacent to any part of vessel, be fenced (subject to the provisions of sub-rule(4) to (7) of this rule) with a guard rail or guard rails to a height of at least. 1 m. above the stage, which rail or rails shall be so placed as to prevent so far as practicable the fall or persons from the stage or from any standing raised sanding place on the stage; or
  - (b) if it is a side immediately adjacent to any part of a vessel, be placed as near as practicable to that part having regard to the nature of the work being carried on and to the nature of the structure of the vessel.
- (4) In the case of stages which are suspended by ropes or chains, and which are used solely for painting, the fencing required by clause (a) of the preceding sub-rule may be provided by means of taut guard rope or taut guard ropes.
- (5) No side of a stage or , as the case may be, no part of the side of a stage need be fenced in pursuance of sub-rule (3) (a) of this rule in cases where, and so long as, the nature of the work being carried on makes the fencing of that side or, as the case may be, that part impracticable.
- (6) Guard rails provided in pursuance of sub-rule (3) (a) of this rule may be removed for the time and to the extent necessary for the access of persons or for the movement of materials; but guard rails removed for either of these purposes shall be replaced as soon as practicable.

- (7) Where it is not reasonably practicable to comply with the provisions of sub-rule (3) (a) of this rule, workers, shall be provided with suitable safety belts equipped with life lines which are secured with a minimum amount of slacks to a fixed structure.

### **Further precautions against fall of Persons, Materials and Articles**

#### **19. Fencing of dry docks**

- (1) Fencing shall be provided at or near the edges of a dry dock at ground level, including edges above flights of steps and chutes for materials. The height of such fencing shall at no point be less than 1 m.
- (2) Such fencing as aforesaid shall be kept in position save then and to the extent to which its absence is necessary (whether or not, for the purposes) shall be kept readily available and shall be replaced as soon as practicable.

#### **20. Protection of openings.**

- (1) Every side or edge of an opening in a deck or tank top of a vessel, being a side or edge which may be a source of danger to workers shall, except where and while the opening is securely covered or where the side or edge is protected to fencing to a height of not less than 75cm. by a earning or other part of the vessel, be provided with fencing to a height of not less than 90cm. above the edge or side and such fencing shall be kept in position save when and to the extent to which its absence is necessary (whether or not for the purposes of the operations) for the access of persons, or for the movement or materials, or for traffic or working, or for repair, but fencing removed for any of those purpose shall be kept readily available and shall be replaced as soon as practicable.
- (2) Sub-rule (1) of these rules shall not apply-
- (a) to that part of an opening in a deck or tank top which is at the head of a stairway or ladder-way intended to be used while the operations are being carried on; or
  - (b) to parts of a deck or tank top which are intended to be plated, except such parts where the plating has necessarily to be delayed so that the opening may be used for the purpose of the operations.

- 21. Fall of articles from stages.-** Where workers are at work outside a vessel on a stage adjacent to part of the structure of the vessel and other workers are at work directly beneath that stage, the planks of the stage shall be in such a position that no article liable to cause injury to the workers can fall between the planks, and the inside plank of the state shall be placed as near as practicable to the structure of the vessel having regard to the nature of the work being carried on.

#### **22. Boxes for rivets, etc.**

- (1) Boxes or other suitable receptacles for rivets, nuts, bolts and welding rods shall be provided for the use of workers.
- (2) It shall be the duty of the workers to use, so far as practicable, the boxes or other suitable receptacles so provided.

#### **23. Throwing down materials and Articles**

- (1) Subject to the provisions of sub-rule(2) of these rules, parts of staging, tools and other articles and materials shall not be thrown down from a height where they are liable to cause injury to workers, but shall be properly lowered.
- (2) When the work to be done necessarily involves the throwing down from a height of articles or materials conspicuous notice shall be posted to warn persons from working or passing

underneath the place from which articles or materials may fall, or the work shall be done under the direct supervision of a competent person in authority.

(3) No person shall throw down any articles or materials from a height except in accordance with the requirement of this rule.

24. **Loose articles or materials.-** So far as practicable, steps shall be taken to minimize the risk arising from loose articles or materials being left laying about in any place from which they may fall on workers or persons passing underneath.

### Raising and Lowering

25. **Secureness to loads.**

(1) Loads shall be securely suspended or supported whilst being raised or lowered, and all reasonable precautions shall be taken to prevent danger from slipping or displacement.

(2) Where by reason of the nature or position of the operations load is liable, whilst being moved by a lifting machine or lifting tackle, to come into contact with any object so that the object may become displaced, special measures shall be adopted to prevent the danger so far as reasonably practicable.

26. **Support of lifting machines and lifting tackle.-** Every lifting machine and all lifting tackle shall be adequately and suitably supported or suspended having regard to the purpose for which it is used.

27. **Wire ropes with broken wires.-** No wire rope shall be used if in any length of ten diameters the total number of visible broken wires exceeds five per cent of the total number of wires, or if the rope shown signs of excessive wear or corrosion or other serious defect.

28. **Splices in wire ropes.** A thimble or loop splice made in any wire rope shall have at least three tucks with a whole strand of the rope and two tucks with one half of the wires cut out of each strand. All tucks shall be against the lay of the rope:

Provided that this Rule shall not operate to prevent the use of another form of splice which can be shown to be as efficient as the form of splice specified in this Rule.

29. **Knotted chains, etc.**

(1) No chain or wire rope shall be used when there is a knot tied in any part thereof.

(2) No chain which is shortened or joined to another chain by means of bolts and nuts shall be used;

Provided that this does not exclude the use of a chain bolted or joined to another chain by an approved and properly constructed attachment.

30. **Precautions against damage to chains and ropes.-** Appropriate steps shall be taken to prevent, so far as practicable, the use of chains or ropes for raising or lowering in circumstances in which they are in or liable to come into contact with sharp edges of plant, materials or loads, or with sharp edges of any part of the vessel on which work is being carried out.

31. **Loads on lifting appliances.-** No load shall be left suspended from a lifting appliance other than a self-sustaining, manually operated lifting appliance unless there is a competent person in charge of the appliance while the load is so left.

32. **Heavy loads.-** Where there is reason to believe that a load being lifted or lowered on a lifting appliance weighs more than 20 tonnes its weight shall be ascertained by means of an accurate weighting machine or by the estimation of a person competent for the purpose, and shall be clearly marked on the load.

Provided that this Rule shall not apply to any load “lifted or lowered by a crane which has either a fixed or a derricking jib and which is fitted with adequate overload protection device to the satisfaction of the competent person or an approved type of indicator in good working order which-

- (a) indicates clearly to the driver or person operating the crane when the load being carried approaches the safe working load of the crane for the radius of the jib at which the load is carried; and
- (b) gives an efficient sound signal when the load moved is in excess of the safe working load of the crane at that radius.

### **Precautions against asphyxiation, injurious fumes or explosions**

**33. Certification for entry into confined spaces likely to contain dangerous fumes.-** A space shall not be certified under section 36 (3) (a) of the Act unless-

- (a) effective steps have been taken to prevent any ingress of dangerous fumes.
- (b) any sludge or other deposit liable to give off dangerous has been removed and the space contains no other material liable to give off dangerous fumes; and
- (c) the space has been adequately ventilated and tested for dangerous fumes and has a supply of air adequate for respiration;  
but no account shall be taken for the purposes of sub-paragraph (b) of this paragraph of this Rule of any deposit or other materials liable to give off dangerous fumes in insignificant quantities only.

**34. Precautions against shortage of oxygen.-** No person shall enter or remain in any confined space in a vessel, being a confined space in which there is reasons to apprehend that the proportion of oxygen in the air is so low as to involve risk of persons being overcome, unless either.

- (a) the space has been and remains adequately ventilated and a responsible person has tested it and certified that it is safe for entry without breathing apparatus, or
- (b) he is wearing a suitable breathing apparatus and a safety belt securely attached to a rope, the free end of which is held by a person standing outside the confined space.

**35. Rivet fires.**

- (1) Rivet fires shall not be taken into or used in or remain in any confined space on board or in a vessel unless there is adequate ventilation to prevent the accumulation of fumes.
- (2) No person employed shall move a rivet fire into any confined space on board or in a vessel unless he has been authorized by his employer to move the fire into the space.

**36. Gas cylinders and acetylene generators.**

- (1) No cylinder which containing or has contained oxygen or any flammable gas or vapour at a pressure above atmospheric pressure and no acetylene generating plant, shall be installed or placed within 5m of any substantial source of heat ( including any boiler or furnace when alight) other than the burner or blow-pipe operated from the cylinder or plant.
- (2) No such cylinder and no such plant shall be taken below the weather dock in the case of a vessel undergoing repair, or below the topmost completed deck in the case of a vessel under construction unless it is installed or placed in a part of the vessel which is adequately ventilated to prevent any dangerous concentration of gas or fumes.

**37. Further provision as to acetylene generators**

- (1) The following provisions shall be observed as respects any acetylene generating plant-

- (a) no such plant shall be installed or placed in any confined space unless effective and suitable provision is made for securing and maintaining the adequate ventilation of that space so as to prevent so far as practicable, any dangerous accumulation of gas;
  - (b) any person attending or operating any such plant shall have been fully instructed in its working and a copy of the maker's instructions for that type of plant shall be constantly available for his use;
  - (c) the charging and cleaning of such plant shall so far as practicable be done during daylight;
  - (d) partly spent calcium carbide shall not be recharged into an acetylene generator.
- (2) No person shall smoke or strike a light or take a naked light or a lamp in or into any acetylene generator house or shed or into dangerous proximity to any acetylene generating plant in the open air or in board a vessel;
- Provided that this sub-rule shall not apply as respects a generator in the open air or on board a vessel which, since it was last charged, has been thoroughly cleaned and freed from any calcium carbide and acetylene gas.
- (3) A prominent notice prohibiting smoking, naked lights and lamps shall be exhibited on or near every acetylene generating plant while it is charged or is being charged or is being cleaned.

**38. Construction of plant for cutting, welding or heating metal.**

- (1) Pipes or hoses for the supply of oxygen or any flammable gas or vapour to any apparatus for cutting, welding or heating metal shall be of good construction and sound material and be properly maintained.
- (2) Such pipes or hoses shall be securely attached to the apparatus and other connections by means of suitable clips or other equally effective appliances.
- (3) Efficient reducing and regulating valves for reducing the pressure of the gases shall be provided and maintained in connection with all cylinders containing oxygen or any flammable gas or vapour at a pressure above atmospheric pressure while the gases or vapours from such cylinders are being used in any process of cutting, welding or heating metal.
- (4) Where acetylene gas is used for cutting, welding or heating metal-
  - (a) a properly constructed and efficient backpressure valve and flame arrestor shall be provided and maintained in the acetylene supply pipe between each burner or blow-pipe and the acetylene generator, cylinder or container from which it is supplied and shall be placed as near as practicable to the burner or blow-pipe, except that those requirements shall not apply where an acetylene cylinder serves only one burner or blowpipe; and
  - (b) any hydraulic valve provided in pursuance of the preceding clause shall be inspected on each day by every person who uses the burner or blow-pipe on that day and it shall be the duty of every worker who used the burner or blow-pipe to inspect the hydraulic valve accordingly.
- (5) The operating valves of burners or blow-pipes to which oxygen or any flammable gas or vapour is supplied for the purpose of cutting, welding or heating metal shall be so constructed, or the operating mechanism shall be so protected, that the valves cannot be opened accidentally.

**39. Precautions after use of apparatus for cutting, welding or heating metal.**

- (1) In the case of apparatus on board a vessel and used for cutting, welding or heating metal with the aid of oxygen or any flammable gas or vapour supplied at a pressure above atmospheric when such use cases for the day or for a substantial period and the apparatus is to be left on



board, but need not be taken when such use is discontinued merely during short interruptions of work. The requirements in sub-rule (3) and (4) of this Rule shall not apply during a meal interval, provided that a responsible person is placed in charge of the plant and equipment referred to therein.

- (2) Supply valves of cylinders, generators and gas mains shall be securely closed and the valve key shall be kept in the custody of a responsible person.
- (3) Movable pipes or hoses used for conveying oxygen or flammable gas or vapour and the welding and cutting torches shall, in the case of a vessel undergoing constructions, brought to the topmost, completed dock, or in the case of a vessel undergoing repair, to be weather dock, or in either case to some other place of safety which is adequately ventilated to prevent any dangerous concentration of gas or fumes;

Provided that where, owing to a nature of the work, it is impracticable to comply with the foregoing requirements of this sub-rule the pipes or hoses shall be disconnected from cylinders, generator or gas mains as the case may be.

- (4) When cylinders or acetylene generating plant have been taken below dock as permitted by sub-rule (2) of Rule 36 such cylinders or acetylene generating plant shall be brought to a weather dock or in the case of a vessel undergoing construction, to the top most completed dock.

#### 40. **Naked lights and hot work on oil-carrying vessels.**

- (1) Subject to the provisions of sub-rule(2) of this Rule and to the provisions of Rule 48, and without prejudice to the provisions of Rule 46 and 47 no naked light, fire or lamp (other than a safety lamp of a type approved for the purpose of this Rule)-

- (a) shall be permitted to be applied to, or to be in or any hot work permitted to be carried out in any part of a tanker, unless, since oil was last carried in that tanker, a naked light certificate has been obtained and is in force in respect of these parts of the tanker for which, in the opinion of competent analyst, a naked light certificate is necessary;

Provided that a naked light, fire or lamp of kind specified in writing by a competent analyst may be applied to, or be in, or any hot work of a type specified by him carried on, any part of the tanker so specified

- (b) shall be permitted-
  - (i) to be in any oil-tank on board or in a vessel in which oil-tank the oil last carried was oil having a flash point of less than 23<sup>0</sup>C. (73<sup>0</sup>F.) or was liquid methane, liquid propane or liquid butane, or any hot work permitted to be carried out in any such oil-tank or vessel, unless a naked light certificate has previously been obtained on the same day and is in force in respect of that oil-tank and of any oil-tank, compartment or space adjacent thereto;
  - (ii) to be applied to the outer surface of any oil-tanker on board or in a vessel in which oil-tanks the oil last carried was such oil as aforesaid or any work of such a nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapours permitted to be carried out on the outer surface of such oil-tank or vessel, unless a naked light certificate has previously been obtained on the same day and is in force in respect of that oil-tank;
  - (iii) to be applied to the outer surface of, or to be in any compartment or space adjacent to an oil-tank on board or in a vessel in which oil-tank the oil last carried was such oil as aforesaid, or any hot work permitted to be carried out in such such compartment or

space as aforesaid, or any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapours, permitted to be carried out on the outer surface of such compartment or space, unless a naked light certificate has previously been obtained on the same day and is in force in respect of that compartment or space:

Provided that where in any such case referred to in clause (i) or (ii) of this sub-rule a competent analyst has certified that daily naked light certificates are unnecessary or are necessary only to a specified extent, such daily certificate need not be obtained or, as the case may be, need only be obtained to the specified extent;

- (c) shall be permitted to be applied to the outer surface of, or to be, in any oil-tank on board or in a vessel or any hot work permitted to be carried out in any such oil-tank or vessel, or any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapours, permitted to be carried out on the outer surface of the oil-tank or vessel, unless since oil was last carried in that oil-tank, a naked light certificate has been obtained and is in force in respect of that oil-tank.
  - (d) shall be permitted to be applied to the outer surface of, or to be in, any compartment or space adjacent to an oil tank on board or in a vessel or any hot work permitted to be carried out in any such compartment or space, or any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapours permitted to be carried out on the outer surface of any such compartment or space, unless since oil was last carried as cargo in that oil-tank a naked light certificate has been obtained and is in force in respect of that compartment or space.
- (2) Notwithstanding anything in sub-rule (4) of this Rule, heated rivets may be permitted in any place without naked light certificate being in force in respect of that place if expressly so authorized by a competent analyst who certifies that after adequate and suitable testing, he is satisfied having regard to all the circumstances of the atmosphere becoming case, including the likelihood or otherwise of the atmosphere becoming flammable, that the place is sufficiently free from flammable vapour; but such heated rivets shall, where practicable, be passed through tubes.
  - (3) No person shall introduce, have or apply naked light, fire or lamp other than safety lamp of a type approved for the purpose of this Rule into, in or to any place where they are prohibited by this Rule.
  - (4) No person shall carry out hot work or any work of such nature which is likely to produce sufficient heat capable of igniting inflammable gases or vapors, in any place or any surface where they are prohibited by this Rule.
  - (5) In this Rule the expression 'competent analyst' means an analyst who is competent to give a naked light certificate.

#### 41. Entering oil-tanks.

- (1) No persons (other than an analyst entering with a view to issuing a certificate of entry) shall, unless he is wearing a breathing apparatus of a type approved for the purpose of this Rule, enter or remain in an oil-tank on board or in a vessel, unless since the oil-tank last contained oil, a certificate of entry has been obtained and is in force in respect of the tank.
- (2) Without prejudice to sub-rule (1) of this Rule, no person (other than an analyst entering as aforesaid) shall be allowed or required to enter or remain in an oil-tank on board or in a vessel

in which oil-tank the oil last carried was oil having a flash point of less than 23<sup>0</sup>C, (73<sup>0</sup>F) unless, since the oil-tank last contained oil, an analyst has certified that the atmosphere is sufficiently free from inflammable mixture.

(3) The provisions of this Rule are without prejudice to the requirements of Rule 34.

**42. Duration of Certificates.-** Any naked light certificate or certificate of entry may be issued subject to a condition that it shall not remain in force after a time specified in this certificate.

**43. Posting of certificates.-** Every occupier for whom a naked light certificate or certificate of entry is obtained shall ensure that the certificate or a duplicate thereof is posted as soon as may be and remains posted in a position where it may be conveniently read by all persons concerned.

**44. Maintaining safe atmosphere**

(1) When conditions in an oil-tank or such in respect of which a naked light certificate has been issued that there is a possibility of oil vapour being released from residues or other sources, test shall be carried out by a competent analyst at such intervals as may be required so as to ensure that the conditions in the tank are maintained safe.

(2) Whenever hot work is carried on or a naked light fire or lamp is allowed to be on the weather dock over spaces, in respect of which a naked light certificate has not been issued, all covers of manholes and openings on dock and all valves (except those which are connected to high vent pipes) connecting the weather dock with the said spaces, shall be closed.

(3) A record of all the tests carried out for the purpose of rules 34, 40 and 41 shall be maintained in a register which should furnish the date, time location and results of the tests.

**45. Cleaning of oil-tanks**

(1) Subject to the provisions of Rule 48 before a test for flammable vapour is carried out with a view to the issue of a naked light certificate for the purposes of Rule 40 in respect of an oil-tank on board or in a vessel, that oil-tank, shall, since oil was last introduced into the tank be cleaned and ventilated in accordance with sub-rule (2) of this Rule.

(2) The said cleaning and ventilation shall be carried out by the following methods;-

(a) the oil-tank shall be treated in such manner and for such period as will ensure the vaporization of all volatile oil;

(b) all residual oil and any sludge or other deposit in the oil-tank shall be removed there from;

(c) after the oil-tank has been so cleaned-

(i) all covers of manholes and other openings therein shall be removed and it shall be thoroughly ventilated by mechanical or other efficient means with a view to the removal of all oil vapour; and then

(ii) the interior surfaces, if any deposit remains thereon, shall be washed or scraped down.

**46. Invalidation of certificates**

(1) If during the course of work in, or to the outer surface of, any part of a tanker or aircraft carrier, any pipe or tank joint is opened or broken or any other event occurs so that there is a risk of oil vapor entering or arising in the part of the tanker or aircraft carrier, that work shall be suspended and thereafter any certificate of entry previously issued in respect of any oil-tank in

that part and any naked light certificate previously issued in respect of that part shall be no longer in force.

- (2) If (in the case of a vessel other than a tanker or aircraft carrier) during the course of work in any oil-tank or in any compartment or space adjacent thereto, any pipe or tank joint is opened or broken or any other event occurs so that there is a risk of oil vapour entering or arising in the oil-tank or in any compartment or space adjacent thereto shall be suspended and thereafter any certificate of entry previously issued in respect of the oil-tank and any naked light certificate previously issued in respect of the oil-tank or any compartment or space adjacent thereto shall be no longer in force.

**47. Provisions as to work in other compartment or spaces**

- (1) Without prejudice to the other provisions of these Rules, if the presence of oil in such quantity and in such position as to be likely to give rise to fire or explosion is detected in any part of vessel, being a part to which this Rule applies and in which repairs of the following kind are to be or are being undertaken, that is to say, repairs involving the use of a naked light, fire or lamp (other than a safety lamp of a type approved for the purpose of Rule 40) or involving hot work, such repairs shall not be started or continued until a naked light certificate has been issued or, as the case may be reissued in respect of that part of the vessel.

- (2) This rule shall apply to bilges, shaft tunnels, pump rooms, lamp rooms, and to compartment and spaces other than those to which sub-rule (1) (d) of Rules 40 applies.

- 48. Exemptions.-** If the Chief Inspector is satisfied, by reasons of the nature of the work and the circumstances in which it is carried out, that any provisions of the rules 33 to 45 or part thereof can be suspended or relaxed without danger to the health or safety of any person, he may grant suspension or relaxation in writing specifying such conditions as he may consider fit. Any such suspension or relaxation may be revoked at any time.

**Precautions in use of Electrical Energy**

- 49. Earthing.-** Electric energy other than that generated by an independent generating unit on board shall not be taken for use, or used in, or in connection with any of the operations unless the body of the ship is securely earthed in such a manner as to ensure an immediate and safe discharge of energy to the earth. A ship or vessel shall not be considered as securely earthed for the purpose of this rule only on account of it being partly submerged in water.

**50. Arc Welding.**

- (1) Electric arc welding shall not be carried on in connection with any of the operations unless separate and fully insulated welding return conductor or conductors as the case may be, of adequate electrical capacity are provided for return of the current to the transformer or generator of the welding set.

- (2) The return end of the source of the welding current shall not be earthed.

- (3) All work on which welding is carried on shall be securely earthed independently to an earth electrode by means of conductor or conductors and the case may be, of adequate capacity, unless all such works are connected to any structure of the ship or vessel in such a manner as to ensure adequate connection to earth as aforesaid.

- 51. Cutting of energy in certain cases.-** Electrical energy shall be cut off from all portable electric tools and manual electrode holders within any tank, compartment or space referred to in rules 34

and 40 or in any other confined space during all times when such tools or holder are not in operation;

Provided that determining whether any such portable electric tool or electrode holder is not in operation, no account shall be taken of brief interruptions of work occurring during normal working.

Provided further that energy may not be cut off from any such equipment if a responsible person is left in charge of it in such tank, compartment or space concerned:

Provided further that cutting of all electrical energy by operation of any switch or control provided on the portable tool or electrodes holder itself should not be taken as fulfilling the requirements of this rule.

### Miscellaneous Safety Provisions

52. **Lighting.**- All parts of a vessel and all other places where the operations are being carried on, and all approaches to such parts and to places to which a worker may be required to proceed in the course of his employment, shall be sufficiently and suitably lighted. In providing such lighting, due regard shall be given to avoidance to glare and formation of shadows, to the safety of the vessel and cargo, of the navigation of other vessels, and to any local statutory requirements as to the lighting of the harbor or duck.
53. **Work in boilers, etc.**
- (1) No work shall be permitted in any boiler, boiler-furnace or boiler-flue until it has been sufficiently cooled to make work safe for the workers.
  - (2) Before any worker enters any steam boiler which is one of a range or two or more steam boilers-
    - (a) all inlets through which steam or hot water might otherwise enter the boiler from any other part of the range shall be disconnected from that part, or
    - (b) all valves or taps controlling such entry shall be closed and securely locked.
  - (3) While workers remain in any steam boiler to which sub-rule (2) of this rule applies all such inlets as are referred to in that sub-rule shall remain disconnected or all such valves or taps as are therein referred to shall remain closed and securely locked.
  - (4) No worker shall be allowed or required to enter or remain in, and no person shall enter or remain, in any steam boiler to which sub-rule (2) of this rule applies unless the provision of that sub-rule are being complied with.
54. **Hatch beams.**- The hatch beams of any hatch in use for the operations, shall, if not removed, be adequately secured to prevent their displacement.
55. **Jumped up bolts.**- Bolt which have been jumped-up and re-screwed shall not be used for securing plates on the sides of vessels, and no worker shall use such bolts for this purpose.
56. **Work in or on life boats.**
- (1) Before workers are permitted to work in or any life boat, either stowed or in suspended position, precautions shall be taken to prevent the boat from falling due to accidental tripping of the releasing gear or movement of the davits, and capsizing of the boat if in chocks.
  - (2) Workers shall not be permitted to remain in life boats while the life boats are being hoisted into final stowed position.

### Protective Wear

57. **Hand Protection.**- Adequate protection for the hands shall be available for all workers when using cutting or welding apparatus to which oxygen or any flammable gas or vapour is supplied at a pressure greater than atmospheric pressure or when engaged in machine caulking or machine riveting or in transporting or stacking plates or in handling plates at machines.
58. **Protection in connection with cutting or welding**
- (1) Suitable goggles fitted with tinted eye- piece shall be provided and maintained for all persons employed when using cutting or welding apparatus to which oxygen or any flammable gas or vapour is supplied at a pressure above atmospheric pressure.
  - (2) There shall be provided and maintained for the use of all persons employed when engaged in the process of electric welding-
    - (a) Suitable helmets or suitable head-shields or suitable hand shields to protect the eyes and face from hot metal and from rays likely to be injurious, and
    - (b) Suitable gauntlets to protect the hands and forearms from hot metal and from rays likely to be injurious.
  - (3) When electric welding is in progress at any place and persons other than those engaged in that process are employed in a position where the rays are likely to be injurious to their eyes, screens shall, where practicable, be provided at that place for the protection of those persons. Where it is not practicable to provide effective protection of those persons by screening, suitable goggles shall be provided for their use.
59. **Eye protection for other processes.**- Suitable goggles or effective screens shall be provided to protect the eyes of all workers in any of the following processes:-
  - (a) The cutting out or cutting off or cold rivets bolts from boilers or other plant or from ships;
  - (b) The chipping, sealing or scurffing of boiler or ships' plates;
  - (c) drilling by means of portable machine tools;
  - (d) Dry grinding of metals
60. **Head protection.**- When workers are employed in area where there is danger of falling objects they shall be provided with suitable safety helmets.
61. **Safety belts and life lines**
- (1) Whenever any worker is engaged on work at a place from which he is liable to fall more than 2m, he shall be provided with safety belts equipped with life lines which are secured with a minimum of slack, to a fixed structure unless any other effective means such as provision of guard rails or ropes are taken to prevent his falling.
  - (2) All safety belts and life lines shall be examined at frequent intervals by a competent person to ensure that no belt or life which is not in good condition is used.

### Health and Welfare

62. **Prohibition of employment of young persons in certain processes.**- No young person shall be employed in-
  - (a) The application of asbestos by means of a spray; or
  - (b) The breaking down for removal of asbestos lagging ; or
  - (c) The cleaning sacks or other containers which have contained asbestos ; or
  - (d) The cutting of material containing asbestos by means of portable power drive saws ; or

- (e) The scaling, scurfing or cleaning of boilers' combustion chambers or smoke boxes, where his work exposes him to dust of such a character and to such an extent as to be likely to be injurious or offensive to persons employed in such work.

**63. Lead processes.**

- (1) Lead paint shall not be applied in the form of a spray in the interior painting of any part of a ship or vessel.
- (2) Wherever lead sheathing work is carried on for making cold storage chamber in the ships, efficient exhaust draughts with portable extractors should be provided to remove the lead fumes from the confined spaces.

**64. Stretchers, ambulance and ambulance rooms, etc**

- (1) In every shipyard there shall be provided and kept readily available-
  - (a) Sufficient number of suitably constructed sling stretcher or other similar appliances for raising injured persons; and
  - (b) A sufficient number of carrying or wheel stretchers; and
  - (c) A sufficient supply of suitable reviving apparatus and oxygen and the stretchers, appliances and apparatus so provided shall be properly maintained.
- (2) In every shipyard there shall always be readily available during working hours a responsible person or responsible persons whose duty it is to summon an ambulance or other means of transport it needed in cases of accident or illness. Legible copies of a notice indicating that person or, as the case may be these person shall be affixed in prominent position in every shipyard.
- (3) In every shipyard other than a dry dock available for hire-
  - (a) In which the number of persons employed normally exceeds five hundred ; or
  - (b) In which the number of persons employed normally exceeds one hundred and which is more than ten miles from a hospital; there shall be provided and maintained in good order and in clean condition a properly constructed ambulance room containing at least the equipment prescribed in the Rules framed under section 45 of the Act. The room shall be used only for the purpose of treatment and rest and shall in the charge of a suitable qualified person who shall always be readily available during working hours, and record shall be kept of all cases of accident or sickness treated at the room.

### Training and Supervision

**65. Young Persons**

- (1) No young person shall, until he has been employed in a shipyard or shipyards for at least six months, be employed in connection with the operations in a shipyard on a stage from which, or in any part of a ship where, he is liable to fall a distance of more than 2m to into water in which there is a risk of drowning.
- (2) Any young person under the age of sixteen shall, when employed in the operations in shipyard, be placed under the charge of an experienced workman.

- 66. Safety supervision.-** In the case of every shipyard other than a dry dock available for hire being shipyard where the number of workers regularly or from time to time exceeds five hundred, a person experience in the work of such yards shall be appointed and employed exclusively to

exercise general supervision of the observance of these Rules and to promote the safe conduct of the work generally.

### Special rule for decorticating factories

**85. The beater arms and feed mouth of decorticator to be guarded.-** In decorticating factories the beater arms and the feed mouth of the decorticator shall, as far as practicable, be guarded as follows;

A grating of  $\frac{3}{4}$  inch diameter wrought iron rods spaced  $2\frac{1}{2}$  inches apart and supported by iron stiffeners 2 inches x  $\frac{1}{4}$  inch thick shall be fixed at a height of 6 inches above the tip of the beater arms. A strong wooden plank  $1\frac{1}{2}$  inches thick and iron plated on the underside shall be clamped with bolts and nuts over this grating leaving a space of 8 inches wide for the feeding of groundnuts. A grating of one inch diameter wrought iron rod spaced  $1\frac{1}{2}$  inches apart shall be fixed at a height of 5 inches just above the feed mouth and another wooden plank 9 inches wide shall be fixed over the full length of the decorticator platform.

### Printing Presses

**86. Guards to platen and guillotine machine.-** In printing works every platen machine driven by power shall be fitted with an efficient finger guard and every guillotine machine, driven by power, with an efficient knife guard.

### Special rule relating to Electric Fittings

**87. Protective measures against danger from electrical shock.**

- (1) All electrical conductors shall either be covered with adequate insulating material and otherwise effectively protected to prevent danger or be so placed and guarded as effectively to prevent danger.
- (2) All electrical apparatus, machines and fittings shall be-
  - (a) so placed or effectively guarded as to prevent danger; and
  - (b) provided with efficient handles or other means of working insulated from the electrical system and so arranged that, the worker cannot accidentally touch live metal.
- (3) The fencing of motors and other electrical apparatus shall as far as practicable, be so arranged that the switches and other controlling appliances can be operated from outside the fencing.
- (4) Only specially trained and experience person shall be allowed to operate, adjust or repair any electrical apparatus.
- (5) Instructions, both in English and Malayalam or Tamil, for the restoration of persons suffering from electric shock shall be affixed in a conspicuous place in every factory using electrical energy for lighting or power purposes.

**87 A.** The occupier of every factory, where welding process is carried on, shall supply free of cost one pair of suitable shoes, as approved by the Inspector of Factories to every welder engaged for welding, once in every twenty-four months, for providing adequate protection to his feet.



- 87B. Protective measures relating to Fragile Roofs.**- In any factory, no worker shall be required to stand or Passover or work on or near any roof or ceiling covered with fragile material through which he is liable to fall, in case it breaks or gives way, a height of more than three meters, unless:-
- (a) Suitable and sufficient ladders, duck ladders or crawling boards, which shall be securely supported, are provided and used; and
  - (b) a permit to work on the fragile roof is issued to him each time he is required to work thereon by a responsible person of the factory concerned.

## CHAPTER V WELFARE

### Rules under sub-section (2) of section 42

#### 88. Washing facilities.

- (1) This rule shall come into force, in respect of any class or description of factories, on such dates as the State Government may, by notification in the Official Gazette, appoint in this behalf.
- (2) There shall be provided and maintained in every factory for the use of employed persons adequate and suitable facilities for washing which shall include soap and nail brushes or other suitable means of cleaning and the facilities shall be conveniently accessible and shall be kept in a clean and orderly condition.
- (3) Without prejudice to the generality of the foregoing provision the washing facilities shall include-
  - (a) a trough with taps or jets at intervals of not less than two feet or
  - (b) wash basins with taps attached thereto, or
  - (c) taps on stand-pipes, or
  - (d) showers controlled by taps, or
  - (e) circular troughs of the fountain types, provided that the Inspector may having regard to the needs and habits of the workers, fix the proportion in which the aforesaid mentioned types of facilities shall be installed.
- (4) (a) Every trough and basin shall have a smooth, impervious surface, and shall be fitted with a waste pipe and plug.  
 (b) The floor or ground under and in the immediate vicinity of every trough, tap, jet, wash basin, stand pipe and shower shall be so laid or finished as to provide a smooth impervious surface and shall be adequately drained.
- (5) For persons whose work involves contact with any injurious or noxious substance there shall be at least one tap for every fifteen persons and for persons whose work does not involve such contact the number of taps shall be as follows:-
 

No. of workers	No. of taps
Up to 20	1
21 to 35	2
36 to 50	3
51 to 150	4
151 to 200	5
Exceeding 200 but not exceeding 500	5 plus one tap for every 50 or fraction of 50
Exceeding 500	11 plus one tap for every 100 or fraction of 100
- (6) If female workers are employed, separate washing facilities shall be provided and so enclosed or screened that the interiors are not visible from any place where persons of the other sex work or pass. The entrance to such facilities shall bear conspicuous notice in the language understood by the majority of the workers "For Women Only" and shall also be indicated pictorially.
- (7) The water supply to the washing facilities shall be capable on yielding at least six gallons a day for each person employed in the factory and shall be from a source approved in writing by the Health Officer. Provided that where the Chief Inspector is satisfied that such an yield is not

practicable he may by certificate in writing permit supply of a smaller quantity not being less than gallon per day for every person employed in the factory.

### Rules under section 43

**88-A. Facilities for storing and drying clothing.-** All classes of factories mentioned in the schedule annexed hereto shall provide facilities for keeping clothing not worn during working hours and for the drying or wet clothing. Such facilities shall include the provision of arrangements approved by the Chief Inspector of Factories.

#### Schedule

Glass works  
Engineering Workshops  
Iron and Steel Works  
Oil Mills  
Chemical Works  
Automobile Workshops  
Dyeing Works  
Coir Industry  
Cashew Industry  
Textile Industry

### Rules under sub-section (1) of section 45

**89. First aid appliance.-** The first aid boxes or cupboards shall be distinctively marked with a red cross on white background and shall contain the following equipment:-

A. For Factories in which the number of persons employed does not exceed ten, or (in the case of factories in which mechanical power is not used) does not exceed fifty persons-Each first aid box or cupboard shall contain the following equipment:-

- (i) Six small size sterilized dressings.
- (ii) Three medium size sterilized dressings.
- (iii) Three large size sterilized dressings
- (iv) Three large size sterilized burn dressings.
- (v) One (60 ml.) bottle of cetrimide solution (1%) or a suitable antiseptic solution.
- (vi) One (60 ml.) bottle of mercurochrome solutin (2%) in water
- (vii) One (30 ml.) bottle containing sal-volatile having the dose and mode of administration indicated on the label.
- (viii) One pair scissors.
- (ix) One roll of adhesive plaster (2cms. x 1 meter)
- (x) Six pieces of sterilized eye pads in separate sealed packets.
- (xi) A bottle containing 100 tablets (each of 5 grains) of aspirin or any other analgesic.
- (xii) Polythene Wash bottle ( $\frac{1}{2}$  litre, i.e. 500c.c.) for washing eyes.
- (xiii) A snake-bite lancet.
- (xiv) One (30ml) bottle containing Potassium Permanganate crystals.

- (xv) One copy of first-aid leaflet mentioned in Appendix II to the Kerala Factories Rules, 1957 issued by the Directorate General of Factory Advice Service and Labour Institutes, Government of India, Bombay.
- B. For factories in which mechanical power is used and in which the number of persons employed exceeds ten but does not exceed fifty-Each First aid box or cupboard shall contain the following equipment:-
- (i) Twelve small size sterilized dressings.
  - (ii) Six medium size sterilized dressings.
  - (iii) Six large size sterilized dressings.
  - (iv) Six large size sterilized burn dressings.
  - (v) Six (15 gm) packets of sterilized cotton wool.
  - (vi) One (120ml.) bottle of certrimide solution (1%) or a suitable antiseptic solution.
  - (vii) One (120 ml.) bottle of mercurochrome solution (2% in water)
  - (viii) One (60ml) bottle containing sal-volatile having the dose and mode of administration indicated on the label.
  - (ix) One pair scissors.
  - (x) Two rolls of adhesive plaster (2cm. X 1 meter)
  - (xi) Eight pieces of sterilized eye pads in separate sealed packets
  - (xii) One tourniquet.
  - (xiii) One dozen safety pins
  - (xiv) A bottle containing 100 tablets (each of 5 grains) of aspirin or any other analgesic.
  - (xv) One polythene wash bottle ( $\frac{1}{2}$  litre i.e. 500c.c.) for washing eyes.
  - (xvi) A snake-bite lancet.
  - (xvii) One (30ml) bottle containing Potassium Permanganate crystals
  - (xviii) One copy of the first-aid leaflet mentioned in Appendix II to the Kerala Factories Rules, 1957 issue by the Directorate General of Factories Advice Service and Labour Institutes, Government of India, Bombay.
- C. For factories employing more than fifty persons-Each first-aid box or cupboard shall contain the following equipments:-
- (i) Twenty four small sterilized dressings.
  - (ii) Twelve medium size sterilized dressings.
  - (iii) Twelve large size sterilized dressings.
  - (iv) Twelve large size sterilized burn dressings.
  - (v) Twelve (15gm) packets of sterilized cotton wool.
  - (vi) One (200ml) bottle of cetricimide solution (1 percent) or suitable antiseptic solution.
  - (vii) One (200ml) bottle mercurochrome (2 percent) solution in water.
  - (viii) One (120ml) bottle of sal volatile having the dose and mode of administration indicated on the label.
  - (ix) One pair scissors.
  - (x) One roll of adhesive plaster (6cms. x 1 meter)
  - (xi) Two rolls of adhesive plaster (2cms x 2 meter)
  - (xii) Twelve pieces of sterilized eye pads in separate sealed packets.
  - (xiii) A bottle containing 100 tablets (each of 5 grains) of aspirin or any other analgesic.

- (xiv) One polythene wash bottle (500c.c) for washing eyes.
- (xv) Twelve roller bandages 10cms. Wide
- (xvi) Twelve roller bandages 5cms wide
- (xvii) Six triangular bandages.
- (xviii) One tourniquet.
- (xix) A supply of suitable splints
- (xx) Tow packets of safety pins
- (xxi) Kidney tray
- (xxii) A snake-bite lancet
- (xxiii) One (30ml) bottle containing potassium permanganate crystals.
- (xxiv) One copy of the first aid leaflet mentioned in Appendix II to the Kerala Factories Rules, 1957 issued by the Directorate General of Factory Advice Service and Labour Institutes, Bombay.

Provided that items (xiv) to (xxi) inclusive need not be included in the standard first aid box or cupboard

- (a) where there is a properly equipped ambulance room, or
- (b) if at least one box containing such items and placed and maintained in accordance with the requirements of section 45 separately provided.
- (c) In lieu of the dressings required under items (i) and (ii), there may be substituted adhesive wound dressings approved by the Chief Inspector of Factories and other equipments or medicines that may be considered essential and recommended by the Chief Inspector of Factories from time to time.

Provided that if a hospital, ambulance room or dispensary is maintained at or near the factory and such arrangements are made as to ensure the immediate treatment of all injuries to workers occurring within the factory, the Chief Inspector of Factories may by an order in writing, exempt the factory from the requirements of this rule, subject to such conditions as he may specify in that order.

**89A. Notice regarding first aid.-** A notice containing the names of the persons working within the precincts of the factory who are trained in first aid treatment and who are in charge of the first aid boxes or cupboards shall be posted in every factory at a conspicuous place and near each such box or cupboard. The notice shall also indicate work-room where the said persons shall be available. The name of the nearest hospital and its telephone number shall also be mentioned prominently in the said notice.

**90. Ambulance room.**

- (1) Every ambulance room shall be under the charge of at least one whole-time qualified medical practitioner (hereinafter referred to as medical officer) assisted by at least one qualified nurse or dresser-cum-compounder and one nursing attendant in each shift:

Provided that where a factory works in more than one shift, the Chief Inspector, if he satisfied that on account of the size of the factory, nature of hazards or frequency of accidents, it is not necessary to employ a whole time medical officer for each shift separately, may, with the previous approval of the State Government, grant exemption from the provision of this sub-rule

and permit employment of only one whole-time medical officer for more than one or all shifts, subject to the conditions that-

- (a) there shall be no relaxation in respect of nursing staff; and
  - (b) the medical officer is readily available on call during the working hours of the factory.
- (2) There shall be displayed in the ambulance room a notice giving the name, address and telephone number of the Medical Practitioner in charge. The name of the nearest hospital and its telephone number shall also be mentioned prominently in the said notice.
- (2A) No medical officer shall be required or permitted to do any work which is inconsistent with or detrimental to his responsibilities under this rule.
- (3) The ambulance room shall be separate from the rest of the factory and shall be used only for the purpose of first-aid treatment and rest. It shall have a floor area of at least 24sq. meters and smooth hard and impervious walls and floors shall be adequately ventilated and lighted by both natural and artificial means. There shall be at least one latrine and urinal of sanitary type attached to the ambulance room. Adequate supply of wholesome drinking water shall be laid on and the room shall contain at least:-
1. A glazed sink with hot and cold water always available
  2. A table with a smooth top at least 180cm. x 105cms.
  3. Means for sterilizing instruments.
  4. A couch.
  5. Two stretchers.
  6. Two buckets or containers with close fitting lids.
  7. Two rubber hot water bags.
  8. A kettle and spirit-stove or other suitable means of boiling water.
  9. Twelve plain wooden splints 900mm. X 100mm. X 6mm.
  10. Twelve plain wooden splints 350mm. X 75mm. 6mm.
  11. Six plain wooden splints 250mm. x 50mm. x 12mm.
  12. Six woolen blankets.
  13. Three pairs artery forceps.
  14. One bottle of spiritus Ammonia Aromatics (120ml)
  15. Smelling salts (60gms.)
  16. Two medium size spongers.
  17. Six hand-towels.
  18. Four "Kidney" trays.
  19. Four cakes of toilet, preferably antiseptic soap.
  20. Two glass tumblers and two wine-glasses.
  21. Two clinical thermometers.
  22. Tea-spoons-Two.
  23. Graduated (120ml.) measuring glass-Two.
  24. Minim measuring-glass-Two.
  25. One wash bottle (1000 cc.) for washing eyes.
  26. One bottle (one litre) carbolic lotion 1 in 20.
  27. Three chairs.
  28. One screen.
  29. One electric hand torch.

30. Four first-aid boxes or cup-boards stocked to the standards prescribed under C of rule 63.
  31. An adequate supply of anti-tetanus toxoid
  32. Injections-Morphia, Pethidine, Atropin, Adrenaline, Coramine Novacom-Six each.
  33. Coramine liquid (6 ml.)
  34. Tablets-Antilistaminic, Antispasmodic (25 each.)
  35. Syringes with needle-2cc., 5cc., 10c.c., 50 cc.
  36. Surgical scissors-three
  37. Needle holder.
  38. Suturing needles and materials.
  39. Dissecting forceps-Three.
  40. Dressing forceps-Three.
  41. Scalpels-Three.
  42. Stethoscope-One.
  43. Rubber bandage-Pressure bandages.
  44. Oxygen cylinder with necessary attachments.
- (4) The occupier of every factory to which these Rules apply shall for the purpose of removing serious cases of accident or sickness, provide in the premises and maintain in good condition a suitable conveyance unless he has made arrangements for obtaining such a conveyance from a hospital.
- (5) The Chief Inspector of Factories may, by an order in writing exempt any factory from the requirements of this rule, subject to such condition as he may specify in that order, if a hospital, ambulance room or dispensary is maintained at or near the factory and such arrangements are made as to ensure the immediate treatment of all injuries to workers occurring within the factory and for providing rest to the injured workers.

**Explanation.-** For the purpose of this rule “qualified medical practitioner” means a person holding a qualification-Granted by an authority specified in the Schedule to the Indian Medical Degree Act, 1916, or in the Schedules to the Indian Medical Council Act, 1956.

## APPENDIX II

(See Rule 89)

### Instructions for handling emergencies

#### **Shock:**

1. Lay the patient on his back.
2. Stop bleeding-if any
3. Relieve pain by supporting injured part.
4. Keep the patient comfortable, but not hot. Do not cause Sweating:
5. Fluids may given in small amount unless the patient is nauseated, unconscious, likely to be operated on, or has an abdominal wound.
6. Reassure and cheer up the patient.

#### **Wounds:**

1. Stop the bleeding by any one of the following methods :
  - (a) Direct pressure ;
  - (b) Direct finger pressure into the wound in cases of large bleeding wounds;
  - (c) Tourniquet (seldom needed)-use only as last resort.

2. Avoid touching the wound with hands or unsterile material.
3. Clear the wound with running water and surrounding are with soap or spirit with clean gauze washing away from the wound. Apply ready-made adhesive gauze bandage or sterile gauze and roller bandage as needed.
4. Keep the patient quiet; raising the extremity if it is the bleeding part, Give no stimulants.
5. Never apply antiseptic ointment, lotion or iodine or germicide to the wound.

**Abdominal wounds:**

1. No time must be lost in sending the patient to the hospital
2. Keep the patient flat.
3. Give nothing by mouth
4. Maintain warmth
5. If intestines protrude from the wound do not attempt to touch or replace them.
6. Apply sterile dressing and binder as for wounds
7. Provide careful, immediate transportation to the hospital

**Eye wounds:**

1. Removal may be attempted if foreign body is not embedded.
2. Do not apply oil or ointment.
3. If there is a foreign body embedded in the eye ball, send the workers immediately to the doctor after applying pad and loose bandage.

**Chemical burns of the eyes:**

1. Immediate washing of the eye at least for fifteen minutes is of great importance.
2. Apply sterile bandage and send the worker immediately to the doctor.
3. Neutralizing agents or ointments should not be used.

**Suffocation:**

1. Remove the patient from the source of danger.
2. Make a rapid examination to ensure that the air passages are free, and to clean them if necessary.
3. Restore natural breathing by artificial respiration, if breathing has ceased.

**Electric shock:**

1. Remove the patient from the source of danger.
2. Make a rapid examination to ensure that the air passages are free, and to clean them if necessary.
3. Restore natural breathing by artificial respiration, if breathing has ceased.

**Insensibility:**

1. Send for a doctor if possible; pending his arrival
2. Where the patient's face is pale, lay him flat and face downwards his head turned to one side. If his face is flushed or blue, raise and support the head and shoulders.
3. Control any serious bleeding.
4. Loosen any tight clothing and let him have plenty of air.
5. Do not give anything by mouth.
6. If doctor is not available send the casualty to hospital

**Back-bone (Special) Fracture:**

1. Transport on a rigid frame. This frame may be improvised by using available boards or a door
2. The rigid frame may be placed on a stretcher for transportation.
3. If a firm frame cannot be improvised, transport patient on abdomen on a stretcher made for canvas or blanket.



4. In neck fracture cases it is much better to get a doctor to the scene for danger to life is great.

**Bruises:**

1. Cold applications at first 24-48 hours.
2. Later heat-after 24-48 hours.

**Burns:**

1. Act quickly
2. Put the affected part in cold water
3. Pour the water over burns that cannot be immersed (Cold water relieves pain, reduces fluid loss).
4. Cover with a sterilized dressing

**Snake-bite:**

Claim and reassure the patient. Immobilize the bitten limb by splinting it. Wash and cool and wound with soap and water Don not cut, rub or suck the bite. Take to a doctor. Press hard over wound for up 15 minutes. Do not remove cloth if it has been placed.

*Issued by:*

The Directorate General of Factories Advice Service and Labour Institutes, Ministry of Labour, Employment and Rehabilitation Bombay

**Rules 91 to 97 under section 46****91. Canteen**

- (1) Rules 91 to 97 shall come into force in respect of any class or description of factories on such dates as the State Government may by notification in the official gazette appoint in this behalf.
- (2) The occupier of every factory notified by the State Government and wherein more than two hundred and fifty workers are ordinarily employed shall provide in or near the factory an adequate canteen according to the standards prescribed in these rules.
- (3) The Manager of a factory shall submit for the approval of the Chief Inspector plans and site plan, in triplicate of the building to be constructed or adapted for use as a canteen.
- (4) The canteen building shall be situated not less than fifty feet from any latrine, urinal, boiler house, coal stacks, ash dumps and any other source of dust, smoke or obnoxious fumes:  
Provided that the Chief Inspector may in any particular factory relax the provisions of this sub-rule to such extent as may be reasonable in the circumstances and may require measures to be adopted to secure the essential purpose of this sub-rule.
- (5) The canteen building shall be constructed in accordance with the plans approved by the Chief Inspector and shall accommodate at least a dining hall, kitchen, store room, pantry and washing places separately for workers and for utensils.
- (6) In a canteen the floor and inside walls up to a height of 4 feet from the floor shall be made of smooth and impervious material; the remaining portion of the inside wall shall be made smooth by cement plaster or in any other manner approved by the Chief Inspector.
- (7) The doors and windows of a canteen building shall be of fly proof construction and shall allow adequate ventilation.
- (8) The canteen shall be sufficiently lighted at all times when person have access to it.
- (9) (a) In every canteen-
  - (i) All inside walls of rooms and ceilings and passage and stair-cases shall be lime-washed or colour-washed at least once in each year or painted once in three years dating from the period when last lime-washed, or painted as the case may be;

(ii) All wood work shall be varnished or painted once in three years dating from the period when last varnished or painted;

(iii) All internal structural iron or steel work shall be varnished or painted once in three years dating from the period when last varnished or painted:

Provided that inside walls of the kitchen shall be lime-washed once in every four months.

(b) Records of dates on which lime-washing, colour-washing, varnishing or painting is carried out shall be maintained in the prescribed Register in Form No. 7.

(10) The precincts of the canteen shall be maintained in a clean sanitary condition. Waste water shall be carried away in suitable covered drains and shall not be allowed to accumulate so as to cause a nuisance.

Suitable arrangements shall be made for the collection and disposal of garbage.

### **92. Dining hall.**

(1) The dining hall shall accommodate at a time at least 30 percent of the workers working at a time at a time: Provided that in any particular factory or in any particular class of factories, the Chief Inspector of Factories may, by an order in writing in this behalf] alter the percentage of workers to be accommodated.

(2) The floor area of the dining hall, excluding the area occupied by the service counter and any furniture except tables and chairs, shall be not less than 10 square feet per dinner to be accommodated as prescribed in sub-rule (1).

(3) A portion of the dining hall and service counter shall be partitioned off and reserved for women workers in proportion to their number. Washing places for women shall be separated and screened to secure privacy.

(4) Sufficient tables, chairs or benches shall be available for the number of diners to be accommodated as prescribed in sub-rule (1);

Provided that where the Chief Inspector is satisfied that satisfactory alternate arrangements are made, he may exempt any particular factory or class of factories from the provisions of this sub-rule.

(5) Soaps and towels should be provided at the washing places in the canteen for the use of the workers.

### **93. Equipment.**

(1) There shall be provided and maintained sufficient utensils, crockery, cutlery, furniture and any other equipment necessary for the efficient running of the canteen. Suitable clean clothes for the employees serving in the canteen shall also be provided and maintained.

(2) The furniture, utensils and other equipment shall be maintained in a clean and hygienic condition. A service counter, if provided, shall have a top of the smooth and impervious material. Suitable facilities including an adequate supply of hot water shall be provided for the cleaning utensils and equipments.

(3) Food and food materials should be stored in fly-proof safes and handled with the help of wooden ladles or suitable metal forceps whichever is convenient. Vessels once used should be scalded before being used again.

### **94. Prices to be charged**

(1) Food, drinks and other items served in the canteen shall be served on a non-profit basis and the prices charged shall be subject to the approval of the Canteen Managing Committee. In the event of the committee not approving the price list should be sent to the Chief Inspector for approval:

Provided that where the canteen is managed by a Co-operative Society registered as such, such society may be allowed to include in the charges to be made for the foodstuffs served, as profit up to 5 per cent on its working capital employed in running the canteen.

- (2) In computing the prices referred to in sub-rule(1), the following items of expenditure shall not be taken in to consideration, but will be borne by the Occupier:-
- (a) the rent for the land and building;
  - (b) the depreciation and maintenance charge of the building and equipment provided for the canteen;
  - (c) the cost of purchase, repairs and replacement of equipment, including furniture, crockery, cutlery, and utensils;
  - (d) the water charges and expenses for providing lighting and ventilation;
  - (e) the cost of fuel required for cooking or heating foodstuffs or water; and
  - (f) the wages of the employees serving in the canteen and the cost of uniforms, if any, provided to them.
- (3) The charge per portion of foodstuff, beverages and any other item served in the canteen shall be conspicuously displayed in the canteen.

**94A. Supply of balanced diet in the canteen.**

- (1) The management shall ensure that the foodstuffs provided in the Canteen are based on a balanced diet taking into account the requirements of nutrition for an average worker.
- (2) The foodstuffs to be served in the Canteen should be approved by the Canteen Managing Committee in accordance with the requirements of a balanced diet.
- (3) Where there is no Canteen Managing Committee the foodstuffs to be served shall be got approved by the Director of Factories and Boilers.
- (4) Where a Canteen Managing Committee is not able to agree on a balanced diet, the matter should be referred to the Director of Factories and Boilers and his decision thereon shall be final.

**95. Account**

- (1) All books of accounts, registers and any other documents used in connection with the running of the canteen shall be produced on demand to an Inspector of Factories.
- (2) The accounts pertaining to the canteen shall be audited once in every twelve months by registered accountants and auditors. The balance sheet prepared by the said auditors shall be submitted to the canteen Managing Committee not later than two months after the closing of the audited accounts. Provided that the accounts pertaining to the canteen in a Government Factory having its own Accounts Department may be audited in such department.

Provided further that where the canteen is managed by a Co-operative Society registered as such, the accounts pertaining to such canteen may be audited in accordance with the provisions of the Co-operative Societies Act for the time being in force.

**96. Managing Committees.**

- (1) The Manager shall appoint a Canteen Managing Committee which shall be consulted from time to time as to:-
  - (a) The quality and quantity of foodstuffs to be served in the Canteen;
  - (b) The arrangement of the menu;
  - (c) Time of meals in the canteen; and
  - (d) Any other matter as may be directed by the committee:

Provided that where the canteen is managed by a Co-operative Society registered as such, it shall not be necessary to appoint a Canteen Managing Committee.

- (2) The Canteen Managing Committee shall consist of an equal number of persons nominated by the occupier and elected by the workers. The number of elected workers shall be in the proportion of one for every 1,000 workers employed in the factory, provided that in no case shall there be more than five or less than two workers on the Committee and in cases where the workers refuse to elect their representative the occupier shall himself nominate the workers representatives.
- (3) The occupier shall appoint from among the persons nominated him, a Chairman of the Canteen Managing Committee.
- (4) The Manager shall determine and supervise procedure for elections to the Canteen Managing Committee.
- (5) A Canteen Managing Committee shall be dissolved by the Manager, two years after the last election, no account being taken of a bye-election or its constitution, as the case may be.
- (6) Where the workers of a factory in which a canteen has been provided by the occupier in accordance with rules 91 to 93 for the use of the workers, desire to run the canteen by themselves on a co-operative basis with share capital contributed by themselves, the management may permit them to run the canteen in accordance with the byelaws of the co-operative canteen, subject to such conditions the Chief Inspector may, in consultation with the Register of Co-operative Society, impose.

**96A. Medical inspection of canteen staff.** – Annual medical examination for fitness of each member of the canteen staff who handles food stuffs shall be carried out by the factory medical officer or the certifying surgeons which should include the following:

- (i) Routine blood examination
- (ii) Routine and bacteriological testing of faces and urine for germs of dysentery and typhoid fever
- (iii) Any other examination including chest X-ray that may be considered necessary by the factory medical officer or the certifying surgeons.

Any person who in the opinion of the factory medical officer or the certifying surgeon is unsuitable for employment on account of possible risk to the health of others shall not be employed as canteen staff.

Workers who have any skin sores must not be allowed to work.

**97. Relaxation of rule in the case of centralized cooking.**– The provisions of rules 91 to 96 may be relaxed by the Chief Inspector, subject to such conditions as he may deem fit, in the case of factories belonging to the same business groups or amalgamation where centralized cooking in an approved industrial canteen is arranged for. Adequate arrangements to the satisfaction of the Chief Inspector shall, however, be made in such cases for the conveyance and proper distribution of the food so cooked to the workers concerned as if separate canteen had actually be provided at site, in the factories covered by this relaxation.

#### **Rules under Section 47**

**98. Shelters, rest rooms and lunch rooms.**

- (1) This rule shall come in to force in respect of any class or description of factories on such date as the State Government may be notification in the Official Gazette appoint in this behalf.
- (2) The shelters, or rest rooms and lunch rooms shall conform to the following standards and the manager of a factory shall submit for the approval of the Chief Inspector a site plan in triplicate of the building to be constructed or adapted.-

- (a) The building shall be soundly constructed and all the walls and roof shall be of suitable heat resisting materials and shall be water proof. The floor and walls to a height of 3 feet shall be so laid or finished as to provide a smooth, hard and impervious surface.
- (b) The height of every room in the building shall be not less than 12 feet from floor level to the lowest part of the roof and there shall be at least 12 square feet of floor area for every person employed:  
 Provided that (i) workers who habitually go home for their meals during the rest period may be excluded in calculating the number of workers to be accommodated and (ii) in the case of factories in existence at the date of commencement of the Act, where it is impracticable owing to lack of space or other difficulties, provide 12 square feet of floor area for each person, or to provide a minimum height of 12 feet such reduced floor area per person or reduced height shall be provided as may be approved in writing by the Chief Inspector.
- (c) Effective and suitable provision shall be made in every room for securing and maintaining adequate ventilation by the circulation of fresh air and there shall also be provided and maintained sufficient and suitable natural or artificial lighting.
- (d) Every room shall be adequately furnished with chairs or benches with back rests.
- (e) Sweepers shall be employed whose primary duty is to keep the rooms, building and precincts thereof in a clean and tidy condition.
- (f) The Chief Inspector may, for reasons to be recorded in writing, relax the provisions of this rule subject to such conditions as he may deem fit to impose, in respect of factories in existence on the 1<sup>st</sup> April 1949.

(3) The lunch rooms shall.-

- (a) Comply with the requirements laid down in clauses (a) to (f) of sub-rule (2); and
- (b) Be provided with adequate number of tables with impervious tops for the use of workers for taking food.

**Rule 98 :** By Notification dated 6-6-1958 in Kerala Gazette dated 24-6-1958 the Rule came into force at once in respect to Cashew Factories, Match Factories, Paper Mills, Cotton Spinning Hosiery Works and Cotton Weaving Factories, Coir-mats and Matting Factories, and Yarn Bailing Factories, Factories manufacturing splints, Veneers or Plywood, Saw Mills and Wood Works, Soap Factories, Coffee Works, Tile factories, Engineering Works, Chemical Factories, Rayon Factories, Cement Factories, Sugar Factories, Aluminium Factories, Rubber Factories, Printing Presses and Glass Factories.

**Rules 99 to 102 under sub-section (3) of Section 48**

**99. Creches.**

- (1) Rules 99 to 102 shall come into force, in respect of any class or description of factories, on such dates as the State Government may, by notification in the Official Gazette appoint in this behalf.
- (2) The crèche shall be conveniently accessible to the mothers of the children accommodated therein and so far as is reasonably practicable it shall not be situated in close proximity to any part of the factory where obnoxious fumes, dust or odours are given off or in which excessively noisy processes are carried on.
- (3) The building in which the crèche is situated shall be soundly of constructed and all the walls and roof shall be of suitable heat resisting materials and shall be water proof. The floor and internal walls of the crèche shall be so laid or finished as to provide smooth impervious surface.

- (4) The height of the rooms in the building shall be not less than 12 feet from the floor to the lowest part of the roof and there shall be not less than 20 square feet of floor area for each child to be accommodated:

Provided that in the case of a room having sloping roofs, the Chief Inspector may reduce the above minimum height if he is satisfied that the room will be sufficiently cool.

- (5) Effective and suitable provision shall be made in every part of the crèche for securing and maintaining adequate ventilation by the circulation of fresh air.
- (6) The crèche shall be adequately furnished and equipped and in particular there shall be one suitable cot or cradle with the necessary bedding for each child: (provided that for children over two years of age it will be sufficient if suitable bedding is made available) at least one chair or equivalent seating accommodation for the use of each mother while she is feeding or attending to her child, and a sufficient supply of suitable toys for the older children.
- (7) A suitably fenced and shady open air play ground shall be provided for the older children:  
Provided that the Chief Inspector may by order in writing exempt any factory from compliance with this sub-rule if he is satisfied that there is not sufficient space available for the provision of such a play ground.
- (8) Where the number of children and infants accommodated in any crèche exceeds twenty-five, one woman, experienced in the care of children and infants, shall be appointed for every additional twenty-five or less number of children and infants accommodated, to assist the woman-in-charge of the crèche.

**100. Wash room.**

- (1) There shall be in or adjoining the crèche a suitable wash room for the washing of the children and their clothing. The wash room shall conform to the following standards:-
- (a) The floor and internal walls of the room to a height of 3 feet shall be so laid or finished as to provide a smooth impervious surface. The room shall be adequately lighted and ventilated and the floor shall be effectively drained and maintained in a clean and tidy condition.-
- (b) There shall be at least one basin or similar vessel for every four children accommodated in the crèche at any one time together with a supply of water provided if practicable, through tap from a source approved by the Health Officer. Such source shall be capable of yielding for each child a supply of at least five gallons of water a day.
- (c) An adequate supply of clean clothes, soap and clean towels shall be made available for each child while it is in the crèche.
- (2) **Latrine in the crèche.**- Adjoining the washing room referred to above, a latrine shall be provided for the sole use of the children in the crèche. The design of the latrine and the scale of accommodations to be provided shall either be approved by the Public Health Authorities, or, where there is no such Public Health Authority, by the Chief Inspector of Factories.

- 101. Supply of milk and refreshment.**- At least half a pint of clean pure milk shall be available for each child, on every day it is accommodated in the crèche and the mother of such a child shall be allowed in the course of her daily work. 2 intervals of at least 15 minute each to feed the child. For children above two years of age there shall be provided in addition an adequate supply of wholesome refreshment.

- 102. Clothes for crèche staff.**- The crèche staff shall be provided suitable clean clothes for use while on duty in the crèche.

**102A. Exemption from the provision of crèche**

- (1) In factories where the number of married women or widows employed does not exceed 15 or where the factory works for less than 180 days in a calendar year, or where number of children kept in the crèche was less than 5 in the preceding year, the Chief Inspector may exempt such factories from the provisions of Section 48 and the rules 99 to 102 made there under, if he is satisfied that alternate arrangements as stipulated under sub-rule (2) are provided by the factory.
- (2) (a) The alternate arrangements required in sub-rule(1) shall include a crèche building which has a minimum accommodation at the rate of 1.86sq.m per child and constructed in accordance with the plans approved by the Chief Inspector.  
(b) The crèche building shall have,
  - (i) A suitable wash room for washing of the children and their clothing.
  - (ii) Adequate supply of soap and clean clothes and towels; and
  - (iii) Adequate number of female attendants who are provided with suitable clean clothes for use while on duty to look after the children in the crèche.
- (3) The exemption granted under sub-rule (1) may at any time be withdrawn by the Chief Inspector if he finds after such enquiry as he may deem fit, that the Factory has committed a breach of this rule.

## CHAPTER VI WORKING HOURS OF ADULTS

### Rule under sub-section (2) of Section 53

#### 103. Compensatory Holidays.

- (1) Except in the case of workers engaged in any work which for technical reasons must be carried on continuously throughout the day, the compensatory holidays to be allowed under sub-section (1) of Section 52 of the Act shall be so spaced that not more than two holidays are given in one week.
- (2) The Manager of the factory shall display, on or before the end of the month in which holidays are lost a notice in respect of workers allowed compensatory holidays during the following month and of the dates thereof at the place at which the Notice of Periods of Work prescribed under Section 61 is displayed. Any subsequent change in the notice in respect of any compensatory holiday shall be made not less than three days in advance of the date of that holiday.
- (3) Any compensatory holiday or holidays to which a worker is entitled shall be given to him before he is discharge or dismissed and shall not be reckoned as part of any period of notice required to be given before discharge or dismissal.
- (4) (a) The Manager shall maintain a Register in Form No.9  
Provided that, if the Chief Inspector of Factories is of the opinion that any Muster Roll or Register maintained as part of the routine of the factory or return made by the Manager, gives in respect of any or all of the workers in the factory the particulars required for the enforcement of Section 52, he may, by order in writing, direct that such muster roll or register or return shall, to the corresponding extent, be maintained in place of and be treated as the register or return required under the rule for that factory.  
(b) The register maintained under Clause (a) shall be preserved for a period of three years after the last entry in it and shall be produced before the Inspector on demand.

### Rules under Section 59

#### 104. Muster roll for exempted factories.

- (1) The Manager of every factory in which workers are exempted under Section 64 or 65 from the provisions of Section 51 or 54 shall keep a muster roll in Form No. 10 showing the normal piece work rate of pay or the rate of pay per hour, of all exempted employees. In this muster roll, shall be correctly entered the overtime hours of work and payments therefore of all exempted workers. The muster roll in Form No.10 shall always be available for inspection.
- (2) The cash equivalent of the advantage accruing through the concessional sale to a worker of food grains and other articles shall be computed at the end of every wage period fixed under the provisions of the Payment of Wages Act, 1936.
- (3) For the purposes of computing cash equivalent of the advantage accruing through the concessional sale to a worker of food grains and other articles, the difference between the value of food grains and other articles at the average rates in the nearest market prevailing during the wage period in which overtime was worked and value of food grains and other articles supplied at concessional rates shall be calculated and allowed for the number of overtime hours worked.



- (4) Period of overtime worked shall be entered in overtime slips in duplicate, a copy of which duly signed by the Manager or by a person duly authorized by him shall be given to the worker immediately after completion of the overtime work.

Sub-rules (2) and (3) shall not apply to any Federal Railway Factory whose alternative method of computation has been approved by the State Government.

Provided that if the Inspector is of opinion that any muster roll or register maintained as part of the routine of a factory gives in respect of any or all the workers in the factory, the particulars required in the form prescribed under this rule, he may by order in writing direct that such muster roll or register shall to the corresponding extent, be maintained in place of an treated as, the overtime muster roll for exempted workers in the factory.

**105. Restriction of double employment.-** An adult worker may be employed in more than one factory on the same day, with the previous approval of the Inspector, subject to the following conditions:-

- (1) He shall not be employed for more than nine hours in all on any one day.
- (2) He shall receive a weekly holiday in accordance with the provisions of Section 52.
- (3) Every worker who is required to work in another factory on the same day shall carry with him a card in which the following particulars shall be entered by the manager of the first factory:-
  - (a) His normal periods of work as in the notice of periods of work, for the day.
  - (b) The period or periods he was worked in the first factory for the day.

The Manager of the second factory in which he is to work for the rest of the day shall enter in the card the period or periods he has worked for the day in his factory. The manager of both the factories in which the worker has worked for the day on the same day shall send to the Inspector an extract of the card mentioned above not later than three days from the date on which the worker has so worked in the two factories on the same day.

**Notice under sub-section (8) of section 61**

**106. Notice of periods of work for adults.-** The notice of period of work for adult workers shall be in Form No.11

**Register under sub-section (2) of Section 62**

**107. Register of adult workers.-** The Register of adult workers shall be in Form No.12

**Rules 108 to 110 prescribed under Section 64**

**108. Persons who hold position of supervision or management or are engaged in confidential position in a factory.-**

- (1) The following persons shall be deemed to hold positions of supervision or management, namely:-
1. Managers
  2. Assistant Managers
  3. Departmental Heads and Assistants
  4. Engineers
  5. Foreman
  6. Chargemen or Head Maistries in Engineering Workshops
  7. Weaving Master and spinning Master in Textile Mills

8. Head Electricians/Electrical Supervisors
9. Head Tea Makers
10. Head Rubber Makers
11. Assistant Head Tea Makers
12. Assistant Head Rubber Makers
13. Moopans in Oil Mills
14. Moopans, Yard Superintendents, Yard supervisors, Assistant Yard Superintendents and Assistant Yard-Supervisors in Coir Factories.
15. Labour or welfare Officers
16. Security Officers
17. Assistant Security Officers including Security Inspectors
18. Guards
19. Shifts in charge
20. Industrial Relations Managers
21. Supervisors
22. Safety Officers

(2) Persons defined to hold confidential position.

- (i) All Time keepers employed in a factory within the meaning of clause (1) of section 2 shall be deemed to be employed in a confidential position in the factory;
- (ii) Stenographers and Personal Clerks of Managers or Managing Directors of factories;
- (iii) Any other person, declared in writing by the Government as holding a confidential position in the Factory and is declared so, in writing, by Government on application by the manager of the factory under conditions as may be imposed by the Government;

**109. List to be maintained of persons holding confidential position or position of supervision or management.-** A list showing the names and designations of all persons to whom the provision of sub-section (1) of section 64 have been applied, shall be maintained in every factory.

**110. Exemption of certain adult workers.-**Adult workers engaged in factories specified in column(2) of the Schedule below for the work specified in column (3) of the said schedule shall be exempted from the provisions of the sections specified in column (4) subject to the conditions if any, specified in column (5) of the said schedule.

**Schedule**

Section of the Act empowering grant of exemption	Class of factory	Nature of exempted work	Extent of exemption	Remarks
(1)	(2)	(3)	(4)	(5)
64 (2) (a) and 64 (3)	All factories	Urgent repairs	Sections 51, 52, 54, 55, 56 and 61	(1) No worker shall be employed on such repairs for more than 15 hours on any one day, 39 hours during any three consecutive days or 66 hour during each period of seven consecutive days commencing from his first employment on such repairs (2) Within 24 hours of the commencement of the work,

				notice shall be sent to the Inspector describing the nature of the urgent repairs and the period probably required for their completion. (3) Exemption from the provisions of section 54 shall apply only in case of adult male workers.
64 (2) (b) and 64 (3)		(1) Work in the machine shop, the smithy or the foundry or in connection with the mill gearing the electric driving of lighting apparatus, the mechanical or electrical lifts or the steam or water pipes or pumps of a factory (2) Work of examination or repairing any machinery or other part of the plant which is necessary for carrying on the work in the factory. (3) Work in boiler houses and engine rooms, such as lighting fires, in order to raise steam or generate gas preparatory to the commencement of regular work in the factory	Section 51, 54 55, 65 & 61	The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of section 64.
64 (2) (c) and 64 (3)	All factories	Work performed by drivers, on lighting, ventilating and humidifying apparatus work performed by fire pump men.	Sections 51, 54, 55, 56 and 61	The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of section 64
64 (2) (c)	Rice mills	Work of persons employed for filling and sewing bags of rice for delivery to customers	Sections 51, 54, 55 and 56	do
Do	News paper presses	Work of persons employed in the rotary machines, stereo, binding and process department	Sections 51, 54, 55 and 56	do
Do	Railway Creosoting Plant	Treatment of wooden sleepers required for railway work	Sections 51, 54, 55 and 56	do
Do	Coir Factories	Workers engaged in drying coir yarns	Section 55	Nil
Do	Beedi Factories	Work of all persons	Sections 55 and 61	Exemption from the provisions of section 61 will apply in so far as it relates to a specification of the periods of rest intervals in the notice of work periods for adults.
64 (2) (c), 64 (2) (e) and 64(3)	Fertilizer mixing Factories	Worker engaged in mixing of fertilizers	Sections 51, 52, 54, 55, 56 and 61	The limits of work inclusive of overtime shall not exceed those mentioned in sub section (4) of section 64.

64 (2) (d)	Enamel Works	Work in furnace and annealing room	Section 55 and 61	Exemption from the provisions of section 61 will apply in so far as it relates to a specification of the periods of rest intervals in the notice of work periods for adults.
Do.	Plywood Manufacture	Work of cutting, gumming, pressing and drying of Plywood	Sections 55 and 61	do.
Do.	Cashew Factories	Work in the processing of Cashew nut for oil	Section 52	Nil
Do.	Tanneries	Country and Chrome tanning, all process from the receiving of skins to the completion of the tanning process finishing process being excluded	Sections 51, 54 and 55	(1) The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64. (2) The total number of hours worked in a week inclusive of overtime shall not exceed 56.
64 (2) (d)	Textile dyeing factories (non power)	Workers employed in the dyeing, bleaching and finishing sections	Section 51, 54, 55, 56 and 61	(1) The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of section 64. (2) The exemption from the provision of Section 61 will apply in so far as it relates to a specification of the periods of rest intervals in the notice of work periods for adults. (3) Total number of hours worked in a week inclusive of overtime shall not exceed fifty six.
64 (2) (d)	Chicory factories	Work of persons engaged in the process of drying chicory	Sections 55 and 61	Exemptions from the provisions of Section 61 will apply in so far as it relates to a specification of the periods of rest intervals in the notice of work periods for adults.
64 (2) (d)	Electrical Battery charging works	All works	Section 55	Nil
64 (2) (d) and 64 (3)	Oil tank installations	Works performed by workers in connection with pumping operations	Sections 51, 52, 54, 55, 56 and 61	(1) The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 (2) The total number of hours worked in a week inclusive of overtime shall not exceed fifty-six

Do.	Fish curing or canning or freezing factories	All adult workers engaged in fish curing or fish canning or fish freezing	do	
64 (2) (d) and 64 (4)	Chemical factories	All workers engaged in continuous process work.	Sections 51, 52, 54, 55 and 56	<p>(1) The Limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of section 64</p> <p>(2) When any shift worker in the continuous process has to work the whole or part of a subsequent shift in the absence of worker who has failed to report for duty, exemption shall be deemed to have been granted to such workers from the restrictions imposed by Sections 51, 54 d clauses (i) and (ii) of Section 64(4) subject to the following conditions :-</p> <p>(a) The next shift of the shift worker shall not commence before a period of eight hours has elapsed.</p> <p>But if the same shift worker is again employed for two consecutive shifts on the following day also, his next shift on the succeeding day shall not commence before a period of sixteen hours has elapsed.</p> <p>(b) Within twenty-four hours of the commencement of the subsequent shift notice shall be sent to the Inspector, describing the circumstances under which the worker is required to work in subsequent shift.</p> <p>(c) The exemption will be restricted to only male adult workers.</p> <p>(3) The total number of hours worked in a week inclusive of overtime shall not exceed fifty-six</p> <p>This conditions shall not apply to the exemption shall not apply to the exemption granted under Section 64 (4).</p>
64 (2) (d), 64 (3) and 64 (4)	Petroleum refineries	All workers engaged in continuous process work	Sections 51, 52, 54, 55, 56 and 61	do

Do.	Machine Tool Factory	Workers in the foundry, electrical and final assembly painting, maintenance, heat treatment and rectification work in planning, milling grinding and turning.	Sections 51, 52, 54, 55, 56 and 61	do
Do.	Bakeries	All workers engaged on continuous process work	Sections 51, 52, 54, 55, 56 and 61	do
64 (2) (d) and 64 (4)	Electrical generating and distribution station	Operation and maintenance of prime movers and auxiliaries, transformers and switches. The work of engine drivers and assistants, generator attendants, boilers attendants and greasers, switch board operators and pumpmen.	Sections 52, 54, and 55	(1) The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64 (2) When any shift worker in the continuous process has to work, the whole or part of a subsequent shift in the absence of a worker who has failed to report for duty, exemption shall be deemed to have been granted to such workers from the restrictions imposed by Sections 51, 54 and Clauses (i) and (ii) of Section 64 (4) subject to the following conditions:- (a) The next shift of the shift workers shall not commence before a period of sixteen hours has elapsed. b) Within twenty-four hours for the commencement of the subsequent shift notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift. c) The exemption will be restricted to only male adult workers.
64 (2) (d) and 64 (4)	Electrical transforming factories	The work viz., operation and maintenance of the transforming plant, switches and synchronous condensers.	Sections 52, 54 and 55	do
64 (2) (d) and 64 (4)	Distilleries	Work on the extraction of sugar from various bases fermentation of sugar juice and distillation of fermented wash.	do	do
Do	Sugar factories	Extraction of the juice from the cane, clarification, evaporation and boiling of the juice, curing of the massecuite and bagging.	do	do

Do	Municipal and public water and sewage pumping station	All workers engaged in continuous process work	do	do
Do.	Vegetable oil hydrogenation factories	The work, namely refining bleaching filtering generation of hydrogen hydrogenating and deodorizing processes up to the end of filling up the finished refined or hydrogenated product. Also compression of oxygen and the cylinder filling and work in the electrical power plant	Sections 51, 52, 54, 55 and 56	<p>1) The limits of works inclusive of overtime shall not exceed those mentioned in sub-section (4) of section 64.</p> <p>2) When any shift worker in the continuous process has to work the whole or part of a subsequent shift in the absence of a worker who has failed to report for duty, exemption shall be deemed to have been granted to such worker from the restrictions imposed by section 51, 54 and clauses (i) and (ii) of section 64(4) subject to the following conditions:-</p> <p>(a) The next shift of the shift worker shall not commence before a period of sixteen hours has elapsed.</p> <p>(b) Within twenty-four hours of the commencement of the subsequent shift notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift.</p> <p>c) The exemption shall be restricted to only male adult workers</p> <p>3) The total number of hours worked in a week, inclusive of overtime, shall not exceed fifty-six.</p> <p>This condition shall not apply to the exemption granted under Section 64(4)</p>
64 (2) (d) and 64 (4)	Ice Factories	Work of the engine and compressor drivers and assistants and oilers	Sections 52, 54 and 55	<p>1) The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64.</p> <p>2) When any shift worker in the continuous process has to work the whole or part of a subsequent shift in the absence of a worker who has failed to report for duty, exemption shall be deemed to have been granted to such workers from the restrictions imposed by Sections 51 and 54 and Clauses (i)</p>

				and (ii) of Section 64(4) subject to the following conditions:- a) The next shift of the shift worker shall not commence before a period of sixteen hours has elapsed. b) Within twenty-four hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift. c) The exemption will be restricted to only male adult workers.
Do	Glass factories	Work in attending to furnace. All work and processes from mixing to removal of the manufactured glassware from the lears.	Section 52	do
Do	Paper factories	All work on paper making machinery and on the generation and supply of power connected, therewith. Work on choppers, digesters kneeders, strainers, and washers, beaters paper making machines pumping plant, reelers, cutters and power plant.	Sections 52, 54 and 55	do
Do	Rubber tyre factories and Tyre Re-treading factories	All work	Sections 51, 52, 54 and 55	do
64 (2) (d) and 64 (4)	Hardboard factories	All workers on chipper and Sorters. Digesters, Defibractors, Holandors, Mixers and Strainers, Beaters, Board forming Machines, Hardening and tempering chambers, Humidifiers pumping Plants and Trimmers	Section 55	When any shift worker in the continuous process has to work the whole or part of subsequent shift in the absence of worker who has failed to report for duty, exemption shall be deemed to have been granted to such workers from the restrictions imposed by sections 51, 54 and clauses (i) and (ii) of section 64(4) subject to the following conditions:- a) The next shift of the shift worker shall not commence before a period of sixteen hours has elapsed. b) Within 24 hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the



				subsequent shift. c) The exemption will be restricted to only male adult workers.
Do	Iron and Steel Factories	All work on steel furnaces	Sections 51, 52, 54, 55 and 56	<p>(1) The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of Section 64</p> <p>(2) When any-shift worker in the continuous process has to work the whole or part of a subsequent shift in the absence of a worker who has failed to report for duty, exemption shall be deemed to have been granted to such worker from the restrictions imposed by Section 51, 54 and Clauses (i) and (ii) of Section 64 (4) subject to the following conditions:-</p> <p>(a) The next shift of the shift worker shall not commence before a period of sixteen hours has elapsed.</p> <p>(b) Within twenty-four hours of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift.</p> <p>(c) The exemption shall be restricted to only male adult workers.</p> <p>(3) The total number of hours worked in a week inclusive of overtime shall not exceed 56. This condition shall not apply to the exemption granted under Section 64 (4).</p>
64 (2) (d) and 64 (4)	Factories engaged in the manufacture of bricks, tile and pottery	Work in Kiln burners and work of firing the producer, loading and unloading of trucks and driving the engine, propelling the trucks in the continuous kiln section of potteries only	Sections 52, 55 and 61	<p>When any shift worker in the continuous process has to work the whole or part of a subsequent shift in the absence of a worker who has failed to report for duty exemption shall be deemed to have been granted to such workers from the restrictions imposed by Sections 51, 54 and Clauses (i) and (ii) of Section 64 (4) subject to the following conditions;-</p> <p>(a) The next shift of the worker shall not commence before a period of sixteen hours has elapsed.</p>

				<p>(b) Within twenty-four hour of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift.</p> <p>(c) The exemption shall be restricted to only male adult workers.</p>
Do	Aluminium Factories	All works	Sections 51, 52, 54, 55, 56 and 61	<p>(1) The limits of work inclusive of over time shall not exceed those mentioned in sub-section (4) of Section 64</p> <p>(2) When any shift worker in the continuous process has to work the whole or part of a subsequent shift in the absence of a worker who has failed to report for duty exemption shall be deemed to have been granted to such workers from the restrictions imposed by Sections 51, 54 and Clauses (i) and (ii) of Section 64 (4) subject to the following conditions;-</p> <p>(a) The next shift of the worker shall not commence before a period of sixteen hours has elapsed.</p> <p>(b) Within twenty-four hour of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift.</p> <p>(c) The exemption shall be restricted to only male adult workers.</p> <p>3) The total number of hours worked in a week, inclusive of overtime, shall not exceed 56. This condition shall not apply to the exemption granted under Section 64 (4).</p>
64 (2) (d) and 64 (4)	Aluminium Conductor Factories	All works	Sections 51, 52, 54, 55 and 56	<p>(1) The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of section 64.</p> <p>(2) When any shift worker in the continuous process has to work the whole or part of a subsequent shift in the absence of a worker</p>

				<p>who has failed to report for duty exemption shall be deemed to have been granted to such workers from the restrictions imposed by Sections 51, 54 and Clauses (i) and (ii) of Section 64 (4) subject to the following conditions;-</p> <p>(a) The next shift of the worker shall not commence before a period of eight hours has elapsed. But if the same shift worker is again employed for consecutive shifts of the following day also, his next shift of the succeeding day shall not commence before a period of 16 hours has elapsed.</p> <p>(b) Within 24 hour of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift.</p> <p>(c) The exemption shall be restricted to only male adult workers.</p> <p>3) The total number of hours worked in a week, inclusive of overtime, shall not exceed 56. This condition shall not apply to the exemption granted under Section 64 (4).</p>
64 (2) (d) and 64 (4)	Copper Conductor Factories	All works	Sections 51, 52, 54, 55 and 56	<p>(1) The limits of work inclusive of over time shall not exceed those mentioned in sub-section (4) of Section 64.</p> <p>(2) When any shift worker in the continuous process has to work the whole or part of a subsequent shift in the absence of a worker who has failed to report for duty exemption shall be deemed to have been granted to such workers from the restrictions imposed by Sections 51, 54 and Clauses (i) and (ii) of Section 64 (4) subject to the following conditions;-</p> <p>(a) The next shift of the worker shall not commence before a period of eight hours has elapsed. But if the same shift worker is again employed for consecutive shifts of the following day also, his next shift of the succeeding</p>

				<p>day shall not commence before a period of 16 hours has elapsed.</p> <p>(b) Within twenty-four hour of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift.</p> <p>(c) The exemption will be restricted to only male adult workers.</p> <p>3) The total number of hours worked in a week, inclusive of overtime, shall not exceed 56. This condition shall not apply to the exemption granted under Section 64 (4).</p>
64 (2) (d) and 64 (4)	High Tensile Galvanised Steel Wire Plant and Steel Wire Rope Factories	All works	Sections 51, 52, 54, 55 and 56	<p>(1) The limits of work inclusive of over time shall not exceed those mentioned in sub-section (4) of Section 64.</p> <p>(2) When any shift worker in the continuous process has to work the whole or part of a subsequent shift in the absence of a worker who has failed to report for duty exemption shall be deemed to have been granted to such workers from the restrictions imposed by Sections 51, 54 and Clauses (i) and (ii) of Section 64 (4) subject to the following conditions;-</p> <p>(a) The next shift of the worker shall not commence before a period of eight hours has elapsed. But if the same shift worker is again employed for consecutive shifts of the following day also, his next shift of the succeeding day shall not commence before a period of 16 hours has elapsed.</p> <p>(b) Within twenty-four hour of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift.</p> <p>(c) The exemption shall be restricted to only male adult workers.</p> <p>3) The total number of hours worked in a week, inclusive of</p>

				overtime, shall not exceed 56. These conditions shall not apply to the exemption granted under Section 64 (4).
64 (2) (d) and 64 (4)	Rayon Factories	All works	Sections 55	<p>(1) The limits of work inclusive of over time shall not exceed those mentioned in sub-section (4) of Section 64.</p> <p>(2) When any shift worker in the continuous process has to work the whole or part of a subsequent shift in the absence of a worker who has failed to report for duty exemption shall be deemed to have been granted to such worker from the restrictions imposed by Sections 51, 54 and Clauses (i) and (ii) of Section 64 (4) subject to the following conditions;-</p> <p>(a) The next shift of the shift worker shall not commence before a period of sixteen hours has elapsed.</p> <p>(b) Within twenty-four hour of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift.</p> <p>(c) The exemption shall be restricted to only male adult workers.</p>
64 (2) (d) and 64 (4)	Soap factories	<p>(1) Work of person from the stage of handling and mixing of raw materials to the stamping and packing of soap tablets of bars both inclusive</p> <p>(2) Glycerine recovery and distillation plant-Complete working of the plant</p> <p>(3) Soap powder (spray plant) complete working of the plant.</p>	Sections 51, 52, 54, 55 and 56	<p>(1) The limits of work inclusive of over time shall not exceed those mentioned in sub-section (4) of Section 64.</p> <p>(2) When any shift worker in the continuous process has to work the whole or part of a subsequent shift in the absence of a worker who has failed to report for duty exemption shall be deemed to have been granted to such worker from the restrictions imposed by Sections 51, 54 and Clauses (i) and (ii) of Section 64 (4) subject to the following conditions;-</p> <p>(a) The next shift of the shift worker shall not commence before a period of sixteen hours has elapsed.</p> <p>(b) Within twenty-four hour of the</p>

				<p>commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift.</p> <p>(c) The exemption shall be restricted to only male adult workers.</p>
Do	Cement Factories	All workers engaged on continuous process work.	Section 55	<p>When any shift worker in the continuous process has to work the whole or part of a subsequent shift in the absence of a worker who has failed to report for duty exemption shall be deemed to have been granted to such worker from the restrictions imposed by Sections 51, 54 and Clauses (i) and (ii) of Section 64 (4) subject to the following conditions;-</p> <p>(a) The next shift of the worker shall not commence before a period of sixteen hours has elapsed.</p> <p>(b) Within twenty-four hour of the commencement of the subsequent shift, notice shall be sent to the Inspector describing the circumstances under which the worker is required to work in the subsequent shift.</p> <p>(c) The exemption shall be restricted to only male adult workers.</p>
64 (2) (e) and 64 (3)	Naval establishments dealing with stores	All workers	Sections 52 and 61	The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of section 64.
64 (2) (f) and 64 (3)	Establishments dealing in the Export of Pepper, Ginger and Spices and other hill products	All workers	Sections 52 and 61	The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of section 64.
64 (2) (g) and 64 (3)	Factories in Tea and Rubber Plantations	Work of persons engaged in any manufacturing process in a factory situated in and used solely for the purpose of Tea and Rubber Plantations	Sections 52, 55 and 61	Do

Do	Salt factories	All works	do	do
Do	Oil Mills	Workers employed in the yard.	do	do
Do	Flour Mills	Workers employed in the yard.	do	do
Do	Rice Mills	Work of persons employed in drying, lifting and storing of paddy	do	do
Do	Cashew factories	Work of person employed in receiving, drying, lifting and storing unpeeled or unshelled cashew nuts	do	do
Do	Wood working factories	Work of person engaged in drying of splints or veneers	do	Do
64 (2) (i)	Newspaper printing factories	Teleprinter Services	sections 51, 54 and 56	Do
64 (2) (i) and 64 (3)	All factories	Workers engaged in the loading or unloading of railway wagons, lorries or trucks	sections 51, 52, 54, 55, 56 and 61	(1) the total number of hours worked in a week inclusive of overtime shall not exceed 60. (2) the limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of section 64.
64 (2) (d) and 64 (3)	All factories	Works on automatic equipment engaged in galvanizing, anodizing and enameling	Sections 51, 52, 54, 55, 56 and 58	(1) The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of section 64. (2) The exemption shall be granted only in respect of adult male workers.
64 (2)	Any factory or class or description, of factories as may be notified by the State Government in the Official Gazette	Work of national importance as may be notified by the State Government in the Official Gazette	Sections 51, 52, 54, 55, 56 and 58	(1) The limits of work inclusive of overtime shall not exceed those mentioned in sub-section (4) of section 64. (2) The exemption shall be limited to adult male workers.

**Explanation:-**

(1) The following shall be considered to be urgent repairs:-

- a) Repairs to any part of the machinery, plant or structure of a factory which are of such a nature that delay in their execution would involve danger to human life or safety or the stoppage of manufacturing process.
- b) Breakdown repairs to the motive power, transmission or other essential plant of other factories, collieries, railways, dockyards, harbors, tramways, motor transport, gas electrical generating and transmission, pumping or similar essential

of public utility services carried out in general engineering works and foundries and which are necessary to enable such concern to maintain their main manufacturing process, production of services or service during normal working hours.

- c) Repairs to deep-sea ships and repairs to commercial air-craft done in a factory which are essential to enable such ship or air-craft to leave port at proper time or continue their normal operation in a sea or air worthy condition, as the case may be.
  - d) Repairs in connection with a change of motive power, for example from steam to electricity or vice versa, when such work cannot possibly be done without stoppage of the normal manufacturing process.
- (2) Periodical cleaning is not included in the term 'examining or 'repairing.

**111. Exemption to women working in fish curing and fish canning or fish freezing factories.-** All women working in fish curing fish canning or fish freezing factories shall be exempted from the provisions of sub-section (1) of section 66 subject to the following condition :-

- (1) No women shall be employed before 6.a.m. or after 7p.m. for more than three days in any weeks. The number of days on which a woman may be so employed shall not exceed ninety in a year.
- (2) Woman may be employed after 4p.m. only if the occupier of the factory provides free transport facilities to the women workers to return to their homes after night work.
- (3) A period of uninterrupted rest of at least nine hours shall intervene between the cessation of a period of work after 7 p.m. on any day and the beginning of a fresh period of work on the following day.



**CHAPTER VII  
EMPLOYMENT OF YOUNG PERSONS**

**Notice under sub-section (3) of section 72**

**112. Notice of period of work for children.** – The notice of periods of work for child workers shall be in Form No.13

**Register under Sub-section (2) of section 73**

**113. Register of child workers-** The register of child workers shall be in Form No.14

**CHAPTER VIII  
LEAVE WITH WAGES**

**Rules 114 to 121 under sections 83 and 112**

**114. Leave with wages register.**

(1) The Manager shall keep a Register in Form No. 15 (hereinafter called the Leave With Wages Register):

Provided that if the Chief Inspector is of the opinion that any muster roll or register maintained as part of the routine of the factory, or return made by the Manager gives in respect of any or all of the workers in the factory, the particulars required for the enforcement of Chapter VIII of the Act, he may, by order in writing, direct that such muster roll or register or return shall, to the corresponding extent, be maintained in place of and be treated as the register or return required under this rule in respect of that factory.

(2) The Leave with wages register shall be preserved for a period of three years after the last entry in it and shall be produced before the Inspector on demand.

**115. Leave book and attendance card**

(1) The Manager shall provide each worker who has become entitled to leave during a calendar year, with a book in Form No.16 (hereinafter called the Leave Book) not later than the 31<sup>st</sup> January of the following calendar year. The Leave Book shall be the property of the worker and the Manager or his agent shall not demand it except to make entries of the dates of holidays or interruptions in service, and shall not keep in for more than a week at a time:

Provided that in the case of a worker who is discharged or dismissed from service during the course of the year i.e., who comes under sub-section (3) of section 79 of the Factories Act, 1948, the Manager shall issue an abstract from the “Register of Leave with Wages” (Form No.15) within a week from the date of discharge or dismissal as the case may be].

(2) If a worker loses his Leave Book, the Manager shall provide him with another copy on the payment of fifteen paise, and shall complete in from his record.

(3) The Manager shall give an attendance card in Form No.28, free of cost, to every person employed in his factory. A fresh card shall be given to each worker on the first day of every calendar month. The Time-keeper or the Manager should mark his initials or affix any stamp mark specially make for the purpose on each of the date columns in the card for each day of presence of the person, every day and shall return the card to the person before he leaves the factory for the day. The card to be collected again every day when the person reports for work. The card shall be finally returned to the person within 10 days after the close of the month to which the card pertains.

If a person loses or destroys a card, the Manager may issue a new card and realize the value of the card provided the amount thus realized does not exceed five paise per card. No person shall be employed without the attendance card. The Chief Inspector may exempt any factory with such conditions as he may deem necessary, from complying with this rule if he is satisfied that the registers maintained in the factory are correct and up to date.

- 116. Medical Certificate-** If any worker is absent from work due to his illness and he wants to avail himself of the leave with wages due to him to cover the whole or part of the period of his illness under the provisions of clause (7) of section 79 of Chapter VIII as revised by the Factories (Amendment) Act, 1954 he shall, if required by the Manager, produce a medical certificate signed by a registered medical practitioner or by a registered or recognized vaid or hakim stating the cause of the absence and the period for which the worker is, in the opinion of the medical practitioner, vaid or hakim, unable to attend to his work, or other reliable evidence to prove that he was actually sick during the period for which the leave is to be availed of.
- 117. Notice by workers-** Before or at the end of every calendar year, a worker, who may be required to avail of leave in accordance with subsection (8) of section 79 of the Factories Act, 1948, may give notice to the Manager of his intention not to avail himself of the leave with wages falling due during the following calendar year. The Manager shall make an entry to that effect in the Leave With Wages Register and in the Leave Book of the worker concerned.
- 118. Grant of leave with wages-**
- (1) As far as circumstances permit, members of the same family, comprising husband, wife and children shall be allowed leave on the same date.
  - (2) A worker may exchange the period of his leave with another worker subject to the approval of the Manager.
- 119. Payment of wages if the worker dies-** If a worker before he resumes work, the balance of his pay due for the period of leave with wages not availed of shall be paid to his nominee within one week of the intimation of the death of the worker. For this purpose each worker shall submit a nomination in Form No.36, duly signed by himself and attested by two witnesses. The nomination shall remain in force until it is cancelled or revised by another nomination.
- 120. Register to be maintained in case of exemption under section 84**
- (1) Where an exemption is granted under section 84 the Manager shall maintain a register showing the position of each worker as regards leave due, leave taken and wages granted.
  - (2) He shall display at the main entrance of the factory, a notice giving full details of the system established in the factory for leave with wages and shall send a copy of it to the Inspector.
  - (3) No alteration shall be made in the scheme approved by the Government at the time of granting exemption under section 84 without its previous sanction.
- 121. Calculation of cash equivalent of advantage accruing through the concessional sale of food grains and other articles.-**The cash equivalent of the advantage accruing through the concessional sale of food grains and other articles payable to workers proceeding on leave shall be the difference between the value of the average rates in the nearest market prevailing during the month immediately preceding his leave and the value at the concessional rates allowed of food grains and other articles he is entitled to.
- For the purpose of the cash equivalent monthly average market rate of food grains and other articles shall be computed at the end of every month.

## CHAPTER IX SPECIAL PROVISIONS

### Rule under Section 87

#### **122. Dangerous manufacturing process or operations-**

(1) The manufacturing process or operation in the forgoing schedules given in part A part B of this rules, when carried on in any factory are declared to be dangerous manufacturing process or operation under section 87:

#### **PART A Schedules**

- i. Manufacture of aerated waters and processes incidental thereto
- ii. Electrolytic plating or oxidation of metal articles by use of an electrolytic containing acid, based on salts or metals such chromium, nickel.
- iii. Manufacture and repair of electric accumulations.
- iv. Glass manufacture.
- v. Grinding or glazing of metals
- vi. Manufacture and treatment of lead and certain compounds of lead.
- vii. Generating petrol gas from petrol.
- viii. Cleaning or smoothing roughening etc., of articles, by a jet of sand, metal shot, or grit, or other abrasive propelled by a blast of compressed air or stream.
- ix. Limiting and tanning of raw hides and skins and processes incidental thereto.
- x. Certain lead process carried on in printing presses and type foundries.
- xi. Manufacture of pottery.
- xii. Chemical works.
- xiii. Manipulation of stone or any other material containing free silica.
- xiv. Handling and processing of asbestos, manufacture of any articles of Asbestos and any other process of manufacture or otherwise in which Asbestos is used in any form.
- xv. Handling and manipulation of corrosive substances.
- xvi. Processing of cashew nut.
- xvii. Compression of oxygen and hydrogen produced by electrolysis of water.

- xviii. Process of Extracting Oils and Fats from vegetable and Animal Sources insolvent Extraction Plants.
- xix. Manufacture or Manipulation of Manganese and its compounds.
- xx. Manufacture and Manipulation of dangerous pesticides.
- xxi. Manufacture handling and usage of benzene and substance containing benzene.
- xxii. Manufacturing process or operation in carbon disulphide plants.
- xxiii. Manufacture or Manipulation of Carcinogenic Dye Intermediates.
- xxiv. Operation Involving High Noise Levels.
- xxv. Manufacture of Rayon by Viscose process.
- xxvi. Highly flammable liquids and flammable compressed gases.
- xxvii. Operation in Foundries.

### **PART B Schedules**

- i. Dyeing, stenciling and painting of mats, matting and carpets in coir and fibre factories.
  - ii. Cellulose Spraying.
  - iii. Graphite powdering and incidental processes
  - iv. Curing, Canning or other processing of fish.
- (2) "First employment" means employment for the first time in a hazardous process of operation so notified under section 87, or reemployment therein after cessation of employment in such process or operation for a period exceeding three calendar months.
- (3) The provision specified in the scheduled shall apply to any class or description of factories wherein dangerous manufacturing process or operation are carried on.
- (4) a) For the medical examinations of workers to be carried out by the Certifying Surgeon as required by the Schedules annexed to this rule, the occupier of the factory shall pay fees at the rate shown in Appendix-II per examination of each worker every time he is examined.
- b) The fees prescribed in sub-rule (4) (a) shall be exclusive of any charges for biological, radiological or other tests which may have to be carried out in connection with the medical examination. Such charges shall be paid by the occupier.
- c) The fees to be paid for the medical examinations shall be paid into the local Treasury under the appropriate head of account.

- (5) Notwithstanding the provision specified in the schedules annexed to this rule, the inspector may by issue of orders in writing to the manager or occupier or both, direct them to carry out such measures and within such time as may be specified in such order with a view to removing conditions dangerous to the health of the workers or to suspend any process, where such process constitutes, in the opinion of the inspector imminent danger of poisoning or toxicity.
- (6) Any register or record of medical examinations and tests connected therewith required to be carried out under any of the Schedules annexed hereto in respect of any workers shall be kept readily available to the inspector and shall be preserved till the expiry of the year after the worker ceases to be in employment of the factory.

## PART A

### Schedule 1

#### Manufacture of aerated waters and Processes incidental thereto

1. **Fencing of machines** – All machines for filling bottles or siphons shall be so constructed, placed or fenced as to prevent, as far as may be practicable, a fragment of a bursting bottle or siphon from striking any person employed in the factory.
2. **Face guards and gauntlets**
  - (1) The occupier shall provide and maintain in good condition for the use of all persons engaged in filling bottles or siphons –
    - (a) Suitable face-guards to protect the face, neck and throat, and
    - (b) Suitable gauntlets for both arms to protect the whole hand and arms:
 

Provided that Paragraph 2 (1) shall not apply where bottles are filled by means of an automatic machine so constructed that no fragment of a bursting bottle can escape:

Provided further that a where a machine so constructed that only one arm of the bottler at work upon it is exposed to danger, a gauntlet need not be provided for the arm which is not exposed to danger.
  - (2) The occupier shall provide and maintain in good condition for the use of all persons engaged in corking, crowing, screwing, wiring, foiling, capsuling, sighting or labeling bottles or siphons.
    - (a) suitable face-guards to protect the face, neck and throat, and
    - (b) Suitable gauntlets for both arms to protect the arm and at least half of the palm and the space between the thumb and forefinger.
  - (3) Wearing of face-guards and gauntlets – All persons engaged in any of the processes specified in paragraph 2 of this schedule shall, while at work in such processes, wear the face-guards and gauntlets provided under the provisions of the said paragraph..

### Schedule II

#### Electrolytic plating or oxidation of metal articles by use of an electrolyte containing acids, Bases or salts of metal such as chromium, nickel, cadmium, Zinc, copper, silver, gold etc.

1. **Definitions- For the purpose of this schedule** –
  - (a) “Electrolytic process” means the electrolytic plating or oxidation of metal articles by the use of an electrolyte containing acid, basis or salts of metal such as chromium, nickel, cadmium, zinc, copper, silver, gold etc.
  - (b) “Bath” means any vessel used for an electrolytic process for any subsequent process; and
  - (c) “employed” means employed in any process involving contact with liquid from a bath.
2. **Exhaust draught** – An efficient exhaust draught shall be applied to every vessel in which any electrolytic process is carried on. Such draught shall be provided by mechanical means and shall operate on the vapour or spray given off in the process as near as may be at the point of origin. The

exhaust draught appliance shall be so constructed, arranged and maintained as to prevent the vapour or spray entering into any room or place in which work is carried on.

3. **Prohibition relating to women and young persons** – No woman, adolescent or child shall be employed or permitted to work at a bath.
4. **Floor of work rooms** – The floor of every work room containing a bath shall be impervious to water. The floor shall be maintained in good and level condition and shall be washed down at least once a day.
5. **Protective devices**
  - (1) The occupier shall provide and maintain in good and clean condition the following articles of protective devices for the use of all persons employed on any process at which they are liable to come in contact with liquid from a bath and such devices shall be worn by the persons concerned.
    - (a) Water-proof aprons and bibs, and
    - (b) For persons actually working at a bath loose fitting rubber gloves and rubber boots or other water-proof footwear.
  - (2) The occupier shall provide and maintain for the use of all persons employed suitable accommodation for the storage and adequate arrangements for the drying of the protective devices.
6. **Water facilities**
  - (1) They shall be provided and maintained in good repairs for the use of all persons employed in electrolytic process and processes incidental to it-
    - (a) A wash base under cover, with either-
      - (i) a trough with is smooth impervious surface fitted with a waste pipe, and of sufficient length to allow at least 60cms. for every five persons employed at any one time and having a constant supply of water from taps or jets above the trough at intervals of not more than 60cms., or
      - (ii) At least one wash basin for every 5 such persons employed at any one time, fitted with a waste pipe and having a constant supply of water laid on.
    - (b) A sufficient supply of clean towels renewed daily, and soap or other suitable cleaning material.
  - (2) In addition to the facilities in sub-paragraph 1; an approved type of emergency shower with eye fountain shall be provided and maintained in good working order. Whenever necessary, in order to ensure continuous water supply, storage tank of 1500 ltrs. Capacity shall be provided as source of clean water for emergency use.
7. **Cautionary Placard** – A cautionary placard in the form specified below and printed in the language of majority of the workers employed shall be affixed in a prominent place in the factory where it can be easily and conveniently read by the workers.

### **CAUTIONARY NOTICE**

#### **Electrolytic plating**

- (1) Chemicals handled in the plant are corrosive and poisonous
- (2) Smoking, chewing, tobacco, eating and food or drinking, in this area is prohibited. No food stuff or drink shall be brought in this area.
- (3) Some of these chemicals may be absorbed through the skin and may cause poisoning.
- (4) A good wash shall be taken before meals.
- (5) Protective devices supplied shall be used while working in this area.
- (6) Spillage of the chemicals on any part of the body or on the floor shall be immediately washed away with water.
- (7) All workers shall report for the prescribed medical tests regularly to protect their own health.

**8. Medical facilities and records of examination and tests.-**

- (1) The occupier of the every factory in which electrolytic processes are carried on shall-
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose appointment shall be subject to the approval of the chief inspector of factories.
  - (b) Provided to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a) ; and
  - (c) maintain sufficient, supply of suitable barriers cream, ointment and impermeable water proof plaster in a separate box readily accessible to the workers used solely for the purpose of keeping these substances. In case cyanides are used in the bath, the box shall also contain an emergency cyanide kit.
- (2) The medical practitioner shall examine all workers before the employed in electrolytic processes. Such examination in case of chrome plating shall include inspection of hands, fore ears and nose and will be carried out once at least in every fortnight.
- (3) The record of the examinations referred to in sub-paragraph shall be maintained in separate register approved by the chief inspector of factories which shall be kept readily available for inspection by the inspector.

**9. Medical Examination by the certifying surgeon.**

- (1) Every worker employed in the electrolytic process, shall be examined by a certifying surgeon before his first employment. Such examination shall include X-ray of the chest and--
  - (a) In case of chromium plate include examination for nasal septum perforation and test for chromium in urine;
  - (b) In case of nickel plating, test of nickel in urine; and
  - (c) In case of cadmium plating, test for cadmium in urine and- 2 microglobulin in urine.
- (2) No worker shall be employed in electrolytic process unless certified fit for such employment by the certifying surgeon.
- (3) Every worker employed in the electrolytic process shall be reexamined by a certifying surgeon at least once in every year, except in case of the workers employed in cadmium, chromium and nickel plating process for whom examination shall be carried out once in every six months such reexamination shall, wherever the certifying surgeon considers appropriate, include testes specified under sub-paragraph (1) excluding the X-ray of the chest which shall not be required normally to be carried out earlier than in once in three years.
- (4) The certifying surgeon after examine a worker, shall issue a certificate of Fitness in Form 27. The record of examination and reexamination carried out shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2) including the nature and the results of the tests, shall also be entered by the certifying surgeon in health register in Form 17.
- (5) The certificate of Fitness and the health register shall be kept readily available for inspection by the inspector.
- (6) If at any time the certifying surgeon is of the opinion that a worker is no longer fit for employment in the electrolytic processes on the ground that continuance therein would involve danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person declared unfit in such circumstances shall be provided with alternative placement facility unless he is fully incapacitated in the opinion of the certifying surgeon, in which case the person affected shall be suitably rehabilitated.
- (7) No person who has been found unfit to work as said in sub-paragraph (6) shall be reemployed or permitted to work in the said processes unless the certifying surgeon, after further examination, again certified him fit for employment in those processes.

**Schedule III****Manufacture and Repair of Electric Accumulators**

1. **Savings** – This schedule shall not apply to the manufacture or repair of electric accumulators or parts thereof not containing lead or any compound of lead, or to the repair, on the premises, of any accumulator forming part of a stationery battery.
2. **Definitions** – For the purposes of this Schedule-
  - (a) “Lead Process” means the melting of lead or any other materials containing lead, casting, pasting, lead burning, or any other work including trimming, or any other abrading or cutting of pasted plates, involving the use, movement or manipulation of, or contact with, any oxide of lead;
  - (b) “Manipulation of raw oxide of lead” means any lead process involving any manipulation or movement of raw oxides of lead other than its conveyance in a receptacle or by means of an implement from one operation to another.
3. **Prohibition relating to women and young persons** – No woman or young person shall be employed or permitted to work in any lead process or in any room in which the manipulation of raw oxide of lead or pasting is carried on.
4. **Separation of certain process** – Each of the following processes shall be carried on in such a manner and under such conditions as to secure effectual separation from one another, and from any other process:-
  - (a) Manipulation of raw oxide of lead;
  - (b) Pasting;
  - (c) Drying of pasted plates;
  - (d) Formation with lead burning (“tacking”) necessarily carried on in connection therewith; and
  - (e) Melting down of pasted plates.
5. **Air space** – In every room in which a lead process is carried on, there shall be at least 14.2 cubic meters of air space for each person employed therein, and in computing this air space no height over 3.65meters shall be taken into account.
6. **Ventilation** – Every work-room shall be provided with inlets and outlets of adequate size as to secure and maintain efficient ventilation in all parts of the room.
7. **Distance between workers in pasting room** – In every pasting room the distance between the centre of the working position of any paster and that of the paster working nearest to him shall not be less than 1.5 meters.
8. **Floor of work- rooms**
  - (1) The floor of every room in which a lead process is carried on shall be-
    - (a) of cement or similar material so as to be smooth and impervious to water;
    - (b) maintained in sound condition; and
    - (c) kept free from materials, plant or other obstruction not required for, or produced, in the process carried on in the room.
  - (2) In all such rooms other than grid casting shops the floor shall be cleaned daily after being thoroughly sprayed with water at a time when another work is being carried on in the room.
  - (3) In grid casting shops the floor shall be cleaned daily.
  - (4) Without prejudice to the requirements of sub-paragraphs (1), (2) and (3) where manipulation of raw oxide of lead or pasting is carried on, the floor shall also be-
    - (a) Kept constantly moist while work is being done;
    - (b) Provided with suitable and adequate arrangements for drainage;
    - (c) Thoroughly washed daily by means of hose pipe.
9. **Work benches** – The work benches at which any lead process is carried on shall –
  - (a) Have a smooth surface and be maintained in sound condition.
  - (b) Be kept free from all materials or plant not required for, or produced in the process carried on thereat; and all such work benches other than those in grid casting shops shall-



- (c) Be cleaned daily either after being thoroughly damped or by means of a suction cleaning apparatus at a time when no other work is being carried on threat; and all such work benches in grid casting shops shall –
- (d) Be cleaned daily; and every work-bench used for pasting shall –
- (e) Be covered throughout with sheet lead or other impervious material;
- (f) Be provide with raised edges; and
- (g) Be kept constantly moist while pasting is being carried on.

**10. Exhaust draught** – The following processes shall not be carried on without the use of an efficient exhaust draught:-

- (a) Melting of lead or materials containing lead.
  - (b) Manipulation of raw oxide of lead, unless done in an enclosed apparatus so as to prevent the escape of dust into the work-room;
  - (c) Pasting;
  - (d) Trimming, brushing, filing or any other abrading or cutting of pasted plates giving rise to dust; and
  - (e) Lead burning, other than-
    - (i) “Tracking” in the formation room; and
    - (ii) Chemical burning for the making of lead lining for cell cases necessarily carried on in such manner that the application of efficient exhaust is impracticable.
- (2) Such exhaust draught shall be effected by mechanical means and shall operate on the dust or fume given off as nearly as may be at it point of origin, so as to prevent from entering the air of any room in which persons work.

**11. Fumes and gases from melting pot.** – The products of combustion produced in the heating of any melting pot shall not be allowed to escape into a room in which persons work.

**12. Container for dross**– A suitable receptacle with tightly fitting cover shall be provided and used for dress as it is removed from every melting pot. Such receptacle shall be kept covered while in the work-room, except when dress is being deposited therein.

**13. Container for lead waste** – A suitable receptacle shall be provided in every work room in which old plates and waste materials which may give rise to dust shall be deposited.

**14. Racks and shelves in drying room**

- (1) The racks or shelves provided in any drying room shall not be more than 2.4 meters from the floor not more than 60centimetres in width:  
Provided that as regards racks or shelves set or drawn from both sides the total width shall not exceed 120centimetres.
- (2) Such racks or shelves shall be cleaned only after being thoroughly damped unless an efficient suction cleaning apparatus is used for this purpose.

**15. Protective clothing** –Protective clothing shall be provided and maintained in good repair for all persons employed in -

- (a) Manipulation of raw oxide of lead;
- (b) Pasting; and
- (c) The formation room;

and such clothing shall be worn by the person concerned.

**16. Mess-room** - There shall be provided and maintained for the use of all persons employed in a lead process and remaining on the premises during the meal intervals, suitable mess-room, which shall be furnished with sufficient tables and benches, and adequate means for warming food. The mess-room shall be placed under the charge of a responsible person and shall be kept clean.

**17. Cloak-room** – There shall be provided and maintained for the use of all persons employed in a lead process-

- (a) A clock room for clothing put off during working hours with adequate arrangements for drying the clothing if wet, which accommodation shall be separated from any mess-room; and

- (b) Separate and suitable arrangements for the storage of protective clothing provided under paragraph 15.

### 18. Washing facilities

- (1) There shall be provided and maintained in a clean state and in good repair for the use of all persons employed in a lead process-
- (a) A wash place under covers with either:-
    - (i) a trough with a smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow of at least 60centimetres for every five such persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 60centimetres; or
    - (ii) At least one wash basin for every five such persons employed at any one time fitted with a waste pipe and plug and having a constant supply of water laid on;
  - (b) A sufficient supply of clean towels made of suitable materials renewed daily, which supply, in the case of pastors and persons employed in the manipulation of raw oxide of lead, shall include a separate marked towel for each such worker; and
  - (c) A sufficient supply of soap or other suitable cleaning material and of nail brushes.
- (2) There shall in addition be provided, means of washing in close proximity to the rooms in which manipulation of raw oxide of lead or pasting is carried on if required by notice in writing from the Chief Inspector.

### 19. Time to be allowed for washing – Before each meal and before the end of the day's work, at least ten minutes, in addition to the regular meal times, shall be allowed for washing to each person who has been employed in the manipulation of raw oxide of lead or in pasting:

Provided that if there be one basin or 60centimetres of trough for each such person this paragraph shall not apply.

### 20. Facilities for bathing – Sufficient bath accommodation to the satisfaction of the Chief Inspector shall be provided for all persons engaged in the manipulation of raw oxide of lead or in pasting and a sufficient supply of soap and clean towels.

### 21. Food, drinks, etc., prohibited in work rooms- No food, drink, pan and supari or tobacco shall be consumed or brought by any worker into any work room in which any lead process is carried on.

### 22. Medical facilities and records of examination and tests.-

- (1) The occupier of the every factory in which manufacture and repair of electric accumulators is carried on shall-
- (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories; and
  - (b) Provided to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examination and appropriate test carried out by the said medical practitioner shall be maintain in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

### 23. Medical Examination by the certifying surgeon.

- (1) Every worker employed in lead process, shall be examined by a certifying surgeon within 15 days of his first employment. Such examination shall include test for lead in urine and blood, ALA in urine, hemoglobin, content stippling of cell and steadiness test. No worker shall be allowed to work after 15 days of his employment in the factory unless certified fit for such employment by the certifying surgeon.
- (2) Every worker employed in the said processes shall be reexamined by a certifying surgeon at least once in every three calendar months. Such reexamination shall, wherever the certifying surgeon considers appropriate, include test specified under sub-paragraph (1).

- (3) The certifying surgeon after examine a worker, shall issue a certificate of Fitness in Form 27. The record of examination and reexamination carried out shall be entered in the certificate and the certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2) including the nature and the results tests, shall all so be entered by the certifying surgeon in a health register in Form 17.
- (4) The certificate of Fitness and the health register shall be kept readily available for inspection by the inspector.
- (5) If at any time the certifying surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternative placement facility unless he is fully in capacitated in the opinion of the certifying surgeon in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be reemployed or permitted to work in the said processes unless the certifying surgeon, after further examination, again certifies him fit for employment in these processes.

#### Schedule IV

#### Glass Manufacture

#### 1. Definitions – For the purpose of this Schedule -

- (a) “Efficient exhaust draught” means localized ventilation effected by mechanical means for the removal of gas, vapour, dust or fumes so as to prevent them (as far as practicable under the atmospheric conditions usually prevailing) from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient, which fails to remove smoke generated at the point where such gas, vapour, fumes, or dusts originate.
- (b) “Lead compound” means any compound of lead other than galena which, when treated in the manner described below, yields to an aqueous solution of hydrochloric acid a quantity of soluble lead compound exceeding, when calculated as lead monoxide, five percent of the dry weight of the portion take for analysis.

The method of treatment shall be as follows:

A weighted quantity of the materials which has been dried at 100 degree C. and thoroughly mixed shall be continuously shaken for one hour, at the common temperature with 1,000 times its weight of an aqueous solution of hydrochloric acid containing 0.25 per cent by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighed as lead sulphate.

#### 2. Exhaust draught – The following process shall not be carried on except under an efficient exhaust draught or such other conditions as may be approved by the Chief Inspector:-

- (a) The mixing of raw materials to form a “batch”;
- (b) The dry grinding, glazing and polishing of glass or any article of glass;
- (c) All processes in which hydrofluoric acid fumes or ammoniacal vapours are given off;
- (d) All processes in the making of furnace moulds or “pots” including the grinding or crushing of used “pots”; and
- (e) All processes involving the use of dry lead compound.

#### 3. Prohibition relating to women and young persons – No women or young person shall be employed or permitted to work in any of the operations specified in paragraph 2 or at any place where such operations are carried on.

- 4. Floors and work benches** – The floor and work-benches of every room in which a dry compound of lead is manipulated or in which any process is carried on giving off silica dust shall be kept moist and shall comply with the following requirements.-
- a. The floors shall be –
    - (i) of cement or similar materials so as to be smooth and impervious to water;
    - (ii) maintained in sound condition; and
    - (iii) cleansed daily after being thoroughly sprayed with water at a time when no other work is being carried on room; and
  - b. the work benches shall-
    - (i) have smooth surface and be maintained sound condition ; and
    - (ii) cleansed daily either after being thoroughly damped or by means of a suction cleaning apparatus at a time when no other work is being carried on thereat.
- 5. Use of hydrofluoric acid** – The following provisions shall apply to rooms in which glass is treated with hydrofluoric acid:-
- (a) There shall be inlets and outlets of adequate size so as to secure and maintain efficient ventilation in all parts of the room;.
  - (b) The floor shall be covered with gutta-percha and be tight and shall slope gently down to a covered drain;
  - (c) The work-place shall be so enclosed in projecting hoods that openings required for bringing in the objects to be treated shall be as small as practicable; and
  - (d) The efficient exhaust draught shall be so contrived that the gases are exhausted downwards.
- 6. Storage and transport of hydrofluoric acid.** – Hydrofluoric acid shall not be stored or transported except in cylinders or receptacles made of lead or rubber.
- 7. Blow pipes.**– Every glass glower shall be provide with it a separate glow pipe bearing the distinguishing mark of the person to whom it is issued and suitable facilities shall be readily available to every glass blower for sterilizing his blow pipe.
- 8. Food, drink, etc., prohibited in work-rooms.**– No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any room or work-place wherein any process specified in paragraph 3 is carried on.
- 9. Protective clothing.**– The occupier shall provide, maintain in good repair and keep in a clean condition for the use of all persons employed in the processes specified in paragraph 2 suitable protective clothing, foot-wear and goggles according to the nature of the work and such clothing, footwear, etc., shall be worn by the persons concerned.
- 10. Washing facilities.**– They shall be provided and maintained in a cleanly state and in good repair for the use of the all persons employed in the processes specified in paragraph 2-
- (a) a wash place with either-
    - (i) a trough with a smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow of at least 60centimetres for every five such persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 60centimetres.; or
    - (ii) at least one wash basin for every five such persons employed at any one time, fitted with a waste pipe and plug and having an adequate supply of water laid on or always readily available; and
  - (b) a sufficient supply of clean towels made of suitable materials renewed daily with a sufficient supply of soap or other suitable cleaning materials and of nail brushes; and
  - (c) a sufficient number of stand pipes, with taps, the number and location of which shall be to the satisfaction of the Chief Inspector.
- 11. Medical facilities and records of examination and tests.-**
- (1) The occupier of the every factory in which glass manufacturing process are carried out, shall

- (a) employee a qualified medical practitioner for medical surveillance of the workers employed therein whose appointment shall be subject to the approval of the chief inspector of factories; and
  - (b) Provided to the said medical practitioner all the necessary facilities for the purposes referred to in clause (a).
- (2) The record of medical examination and appropriate test carried out by the said medical practitioner shall be maintain in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

### **12. Medical Examination by the certifying surgeon.-**

- (1) Every worker employed in process, specified in paragraph 2 shall be examined by a certifying surgeon within 15 days of his first employment. Such examination shall include pulmonary function test and suspected cases chests X-ray as well as test for lead and urine. No worker shall be allowed to work after 15 days of his employment in the factory unless certified fit for such employment by the certifying surgeon.
- (2) Every worker employed in the said processes shall be reexamined by a certifying surgeon at least once in every 12 calendar months. Such reexamination shall, whenever the certifying surgeon considers appropriate, include test as specified under sub-paragraph (1).
- (3) The certifying surgeon after examine a worker, shall issue a certificate of Fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the certificate and the certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the certifying surgeon in health register in Form 17.
- (4) The certificate of Fitness and the health register shall be kept readily available for inspection by the inspector.
- (5) If at any time the certifying surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his finding in the said certificate and the health register. The entry of his findings in these documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternative placement facility unless he is fully in capacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be reemployed or permitted to work in the said processes unless the Certifying Surgeon, after further examinations, again certifies him fit for employment in those processes.

**13. Exemption .-** If the Chief Inspector is satisfied in respect of any factory or any class of process that, owing to the special method of work or the special conditions in factory otherwise, any of the requirements of this schedule can be suspended or relaxed without danger to the persons employed therein, or that the application of this schedule or any part thereof is for any reasons in practicable, he may be certificate in writing authorize such suspension or relaxation as may be indicated in the certificate for such period and on such conditions as he may think fit.

### **Schedule V**

#### **Grinding or glazing of metals and Processes incidental thereto**

- 1. Exceptions –** (1) Nothing in this Schedule shall apply to any factory in which only repairs are carried on except any part thereof in which one or more persons are wholly or mainly employed in the grinding or glazing of metals.

(2) Nothing in this Schedule except paragraph 4 shall apply to any grinding or glazing of metals carried on intermittently and at which no person is employed for more than 12 hours in any week.

**2. Definitions** – For the purpose of the Schedule -

- a. “Grindstone” means a grindstone composed of natural or manufactured sandstone but does not include a metal wheel or cylinder into which blocks of natural or manufactured sandstone are fitted;
- b. “Abrasive wheel” means a wheel manufactured of bonded emery or similar abrasive;
- c. “Grinding” means the abrasion, by aid of mechanical power, of metal, by means of a grindstone or abrasive wheel;
- d. “Glazing” means the abrading, polishing or finishing by aid of mechanical power or manual by means of any wheel, buff, mop or similar appliance to which any abrading or polishing substance is attached or applied.
- e. “Racing” means the turning up, cutting of dressing or a revolving grindstone before it is brought into use for the first time.
- f. “Hacking” means the chipping of the surface of a grindstone by a hack or similar tool.
- g. “Rodding” means the dressing of the surface of a revolving grindstone by the application of a rod, bar or strip of metal to such surface.

**3. Equipment for removal of dust** - No racing, dry grinding or glazing shall be performed without: -

- (a) a hood or other appliance so constructed, arranged, placed and maintained as substantially to intercept the dust thrown off; and
- (b) a duct of adequate size, air-tight and so arranged as to be capable of carrying away the dust, which duct shall be kept free from obstruction and shall be provided with proper means of access for inspection and cleaning, and where practicable, with a connection at the end remote from the fan to enable the Inspector to attach thereto any instrument necessary for ascertaining the pressure of air in the said duct; and
- (c) a fan or other efficient means of producing a draught sufficient to extract the dust:  
Provided that the Chief Inspector may accept any other appliance, that is, in his opinion, as effectual for the interception, removal and disposal of dust thrown off as a hood, duct and fan would be.

**4. Restriction on employment on grinding operation** – Not more than one person shall at any time perform the actual process of grinding or glazing upon a grindstone, abrasive wheel or glazing appliance;

Provided that this paragraph shall not prohibit the employment of persons to assist in the manipulation of heavy or bulky articles at any such grindstone, abrasive wheel or glazing appliance.

**5. Glazing** – Glazing or other processes, except processes incidental to wet grinding upon a grindstone, shall not be carried on in any room in which wet grinding up on a grindstone is done.

**6. Hacking and rodding** – Hacking and rodding shall not be done unless during the process either a adequate supply of water is laid on at the upper surface of the grindstone or adequate appliances for the interception of dusty are provided in accordance with the requirements of paragraph 3.

**7. Examination of dust equipment**

- (a) All equipment for the extraction or suppression of dust shall at least once in every six months be examined and tested by a competent person and any defect disclosed by such examination and test shall be rectified as soon as practicable.
- (b) A register containing particulars of such examination and test shall be kept in Form No. 40.

**8. Medical facilities and records of examination and tests.-**

- (1) The occupier of the every factory in which grinding or glazing of metals are carried out, shall-
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories; and

(b) Provided to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examination and appropriate test carried out by the said medical practitioner shall be maintain in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

**9. Medical Examination by the certifying surgeon.-**

(1) Every worker employed in grinding or glazing or metal and processes incidental thereto shall be examined by a Certifying Surgeon within 15 days of his first employment such examination shall include pulmonary function test and suspected cases chests X-rays. No worker shall be allowed to work after 15 days of his employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be reexamined by a Certifying Surgeon at least once in every 12 calendar months. Such reexamination shall, whenever the Certifying Surgeon considers appropriate, include testes specified under sub-paragraph (1).

(3) The certifying surgeon after examine a worker, shall issue a certificate of Fitness in Form 27. The record of examination and reexaminations carried out shall be entered in the certificate and the certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2), including the nature and the results tests, shall all so be entered by the Certifying Surgeon in health register in Form 17.

(4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternative placement facilities unless he is fully in capacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) shall be reemployed or permitted to work in the said processes unless the Certifying Surgeon, after further examinations, again certified him fit for employment in those processes.

**10. Exemption .-** If the Chief Inspector may be certificate in writing, subject to such conditions as he may specify therein, relax or suspend any of the provisions of this schedule in respect of any factory it owing to the special methods of work or otherwise such relaxation or suspension is practicable without danger to the health or safety of the persons employed.

**Schedule VI**

**Manufacture and treatment of lead and certain compounds of lead**

**1. Application** – This schedule shall apply to all factories or parts of factories in which any of the following operations are carried on:-

(a) a work at a furnace where the reduction or treatment of zinc or lead ores is carried on;

(b) the manipulation, treatment or reduction of ashes containing lead, the de-silverising of lead or the melting of scarp lead or zinc.

(c) the manufacture of solder or alloys containing more than ten per cent of lead.

(d) the manufacture of any oxide, carbonate, sulphate, chromate, acetate, nitrate or silicate of lead.

(e) handling or mixing of lead tetra ethyl.

(f) any other operation involving the use of a lead compound; and

(g) the cleaning of work-rooms where any of the operations aforesaid are carried on.

**2. Definitions** – For the purposes of this schedule -

- (a) “Lead Compound” means any compound of lead other than galena, which when treated in the manner described below, yields to an aqueous solution of hydrochloric acid, a quantity of soluble lead compound exceeding, when calculated as lead monoxide five per cent of the “dry weight” of the portion taken for analysis. In the case of paints and similar products and other mixtures containing oil or fat the “dry weight” means the dry weight of the material remaining after the substance has been thoroughly mixed and treated with suitable solvents to remove oil, fats, varnish or other media.

The method of treatment shall be as follows:-

A weighed quantity, of the material which has been dried at 100C and thoroughly mixed shall be continuously shaken for one hour, at the common temperature with 1000times its weight of an aqueous solution of hydrochloric acid containing 0.24 per cent by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighed as lead sulphate.

- (b) “Efficient Exhaust Draught” means localized ventilation effected by heat or mechanical means, for the removal of gas, vapour, dust or fumes so as to prevent them (as far as practicable under the atmospheric conditions usually prevailing) from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove smoke generated at the point where such gas, vapour, fumes or dust originate.

3. **Prohibition relating to women and young persons** – No woman or young person shall be employed or permitted to work in any of the operations specified in paragraph 1.
4. **Requirements to be observed** – No person shall be employed or permitted to work in any process involving the use of lead compound if the process is such that dust or fume from a lead compound is produced therein, or the persons employed therein are liable to be splashed with any lead compound in the course of their employment unless the provisions of paragraphs 5 to 13 are complied with.
5. **Exhaust draught.**– Where dust, fume, gas or vapour is produced in the process, provision shall be made for removing them by means of an efficient exhaust draught to contrived as to operate on the dust, fume, gas or vapour as closely as possible to the point of origin
6. **Food, drinks, etc. prohibited in work rooms.**- No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any work-room in which the process is carried on and no person shall remain in any such room during intervals for meals or rest.
7. **Protective clothing.**- Suitable protective overalls and head covered shall be provided, maintained and kept clean by the occupier and such overalls and head coverings shall be worn by the persons employed.
8. **Cleanliness of work-room, tools, etc.**- The rooms in which the persons are employed and all tools and apparatus use by them shall be kept in a clean state.
9. **Washing facilities**
  - (1) The occupier shall provide and maintain for the use of all persons employed suitable washing facilities consisting of-
    - (a) a trough with a smooth impervious surface fitted with a waste pipe without plug and of sufficient length to allow at least 60centimetres for every ten persons employed at any one time and having a constant supply of clean water from taps or jets above the trough at intervals of not more than 60centimetres; or
    - (b) at least one wash-basin for every ten persons employed at any one time, fitted with a waste pipe and plug and having constant supply of clean water; together with, in either case, a sufficient supply of nail brushes, soap or other suitable cleaning materials and clean towels.
  - (2) The facilities so provided shall be placed under the charge of responsible person and shall be kept clean.
10. **Mess room or canteen.**– The occupier shall provide and maintain for the use of the persons employed suitable and adequate arrangements for taking their meals. The arrangements shall consist



of the use of a room separate from any work-room which shall be furnished with sufficient tables and benches, and unless a canteen serving hot meals is provided, adequate means of warming food. The room shall be adequately ventilated by the circulation of fresh air, shall be placed under the charge of a responsible person and shall be kept clean.

**11. Clock room.**— The occupier shall provide and maintain for the use of persons employed, suitable accommodation for clothing not worn during working hours, and for the drying of wet clothing.

**12. Medical facilities and records of examination and tests.-**

(1) The occupier of the every factory in which the schedule applies shall-

(a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose appointment shall be subject to the approval of the Chief Inspector of Factories, and

(b) provided to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examination and appropriate test carried out by the said medical practitioner shall be maintain in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

**13. Medical Examination by the Certifying Surgeon:-**

(1) Every worker employed in processes referred to in paragraph 1 shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include test for lead in blood and urine, ALA in urine, hemoglobin content, stippling or cells and this steadiness test. No worker shall be allowed to work after 15 days of his employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be reexamined by a Certifying Surgeon at least once in every 3 calendar months. Such reexamination shall, wherever the Certifying Surgeon considers appropriate, include testes specified in sub-paragraph (1).

(3) The Certifying Surgeon after examine a worker, shall issue a Certificate of Fitness in Form 27. The record or examination and reexamination carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2) including the nature and the results, tests, shall all so be entered by the Certifying Surgeon in health register in Form 17.

(4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said Certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternative placement facility unless he is fully in capacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be reemployed or permitted to work in the said processes unless the Certifying Surgeon, after further examinations, again certifies him fit for employment in those processes.

**14. Exemption .-** If the Chief Inspector is satisfied that all or any of the provisions of this schedule are not necessary for the protection of the persons employed, he may by certificate in writing exempt any factory from all or any of such provisions, subject to such conditions as he may specify.

## Schedule VII

### Generating Petroleum Gas from Petrol

1. **Prohibition relating to women and young persons** – No woman or young person shall be employed or permitted to work in or shall be allowed to enter any building in which generation of gas from dangerous petroleum is carried on.
2. **Flame, traps** – The plant for generation of gas from dangerous petroleum and associated piping and fittings shall be fitted with at least two efficient flame traps so designed and maintained as to prevent a flash back from any burner to the plant. One of these traps shall be fitted as close to the plant as possible. The plant and all pipes and valves shall be installed and maintained free from leaks.
3. **Generating building or room.**– All plants for generation of gas from dangerous petroleum, erected after the coming into force of the provisions specified in this schedule, shall be erected outside the factory building proper in a separate well-ventilated building (hereinafter referred to as the “generating building”). In the case of such plants erected before the coming into force of the provisions specified in this schedule there shall be no direct communications between the room where such plants are erected (hereinafter referred to as “the generating room”) and remainder of the factory building. So far as practicable, all such generating rooms shall be constructed of fire resting materials.
4. **Fire extinguishers** – An efficient means of extinguishing petrol fires shall be maintained in an easily accessible position near the plant for generation of gas from dangerous petroleum.
5. **Plan, to be approved by Chief Inspector** – Gas from dangerous Petrol Gas shall not be manufactured except in a plant for generating Petrol Gas, the design and construction of which has been approved by the Chief Inspector.
6. **Escape of petrol** – Effective steps shall be taken to prevent petrol from escaping into any drain or sewer.
7. **Prohibition relating to smoking etc.** – No person shall smoke or carry matches, fire or naked light or other means of producing naked light or spark in the generating room or building or in the vicinity thereof and a warning notice in the language understood by the majority of the workers shall be pasted in the factory prohibiting smoking and carrying of matches, fire or naked light or other means of producing a naked light or spark into such room or building.
8. **Access to petrol or container** – No unauthorized person shall have access to any petrol or to a vessel containing or having actually contained petrol.
9. **Electric fittings** – All electric fittings shall be of flame proof construction and all electric conductors shall either be enclosed in metal conduits or be lead sheathed.
10. **Construction of doors** – All doors in the generating room or building shall be constructed to open outside or to slide and no door shall be locked or obstructed or fastened in such manner that it cannot be easily and immediately opened from the inside while gas is being generated and any person is working in the generating room or building.
11. **Repair of containers** – No vessel that has contained petrol shall be repaired in a generating room or building and no repairs to any such vessel shall be undertaken unless lie steam has been blown into the vessel and until the interior is thoroughly steamed out or other equally effective steps have been taken to ensure that it has been rendered free from petrol or inflammable vapour.

## Schedule VIII

### Cleaning or smoothing, roughening, etc., of articles, by a jet of sand metal shot or grit, or other abrasive propelled by a blast of compressed air or steam

1. **Definitions** – For the purpose of this schedule -
  - a. “Blasting” means cleaning, smoothing, roughening, or removing of any part of the surface of any article by use as an abrasive of a jet of sand, metal shot or grit or other material, propelled by a blast of compressed air or steam.

- b. "Blasting enclosure" means a chamber, barrel, cabinet or any other enclosure designed for the performance of blasting therein,
- c. "Blasting chamber" means a blasting enclosure in which any person may enter at any time in connection with any work or otherwise,
- d. "Cleaning of castings" where done as an incidental or supplemental process in connection with the making of metal castings, means the freeing of the casting from adherent sand or other substance and includes the removal of cores and the general smoothing of a casting, but does not include the free treatment.

**2. Prohibition of sand blasting** – Sand or any other substance containing free silica shall not be introduced as an abrasive into any blasting apparatus and shall not be used for blasting:  
Provided further that this clause shall come into force two years after the coming into operation of this schedule:

Provided further that no woman or young person shall be employed or permitted to work at any operation of sand blasting.

**3. Precautions in connection with blasting operations**

- (1) Blasting shall not be done except in a blasting enclosure and no work other than blasting and any work immediately incidental thereto and cleaning and repairing of the enclosure including the plants and appliances situated therein, shall be performed in a blasting enclosure. The enclosure shall be kept closed and airtight while blasting is being done therein.
- (2) Maintenance of blasting enclosure – Blasting enclosure shall always be maintained in good condition and effective measures shall be taken to prevent dust escaping from such enclosures, and from apparatus connected therewith, into the air of any room.
- (3) There shall be provided and maintained for and in connection with every blasting enclosure, efficient apparatus for separating, so far as practicable, abrasive which has been used for blasting and which is to be used again as an abrasive, from dust or particles of other materials arising from blasting, and no such abrasive shall be introduced into any blasting apparatus and used for blasting until it has been so separated:

Provided that this clause shall not apply, except in the case of blasting chambers, to blasting enclosures, constructed or installed before the coming into force of this schedule, if the Chief Inspector is of opinion that it is not reasonably practicable to provide such separating apparatus.

- (4) There shall be provided and maintained in connection with every blasting enclosure efficient ventilating plant to extract, by exhaust draught effected by mechanical means, dust produced in the enclosure. The dust extracted and removed shall be disposed of by such method and in such manner that it shall not escape into the air of any room; and every other filtering or settling device situated in a room in which persons are employed, other than persons attending to such bag or other filtering or settling device, shall be completely separated from the general air of that room in an enclosure, ventilated to the open air.
- (5) The ventilating plant provided for the purpose of sub-paragraph (4) shall be kept in continuous operation whenever the blasting enclosure is in use whether or not blasting is actually taking place therein, and in the case of a blasting chamber, it shall be in operation even when any person is inside the chamber for the purpose of cleaning.

**4. Inspection and Examination**

- (1) Every blasting enclosure shall be specially inspected by a competent person at least once in every week in which it is used for blasting. Every blasting enclosure, the apparatus connected therewith and the ventilating plant, shall be thoroughly examined and in the case ventilating plant, tested by a competent person at least once, in every month.
- (2) Particulars of the result of every such inspection, examination and test shall forth with be entered in the register which shall be kept in a form approved by the Chief Inspector and shall be available for inspection by any workman, employed in or in connection with blasting in the factory. Any defect found on any such inspection, examination or test shall be immediately

reported by the person carrying out the inspection, examination or test to the occupier, manager or other appropriate person and without prejudice to the forgoing requirements of this schedule, shall be removed without delay.

**5. Provision of protecting helmets, gauntlets and overalls**

- (1) There shall provided and maintained for the use of all persons who are employed in a blasting chamber, whether in blasting or in any work connected therewith or in cleaning such a chamber, protective helmets of a type approved by a certificate of the Chief Inspector and every such persons shall wear the helmet provided for this use while he is in the chamber and shall not remove it until he is outside the chamber.
- (2) Each protective helmet shall carry a distinguishing mark indicating the persons by whom it is intended to be used and no person shall allowed or required to wear a helmet not carrying his mark or a helmet which has been worn by another person and has not since been thoroughly disinfected.
- (3) Each protective helmet when in use shall be supplied with clean and not unreasonably cold air at a rate of not less than 170 liters per minute.
- (4) Suitable gauntlets and overalls shall be provided for the use of all persons while performing blasting or assisting at blasting, and every such person shall while so engaged, wear the gauntlet and overall provided

**6. Precautions in connection with cleaning and other work**

- (1) Where any person is engaged upon cleaning of any blasting apparatus or blasting enclosure or any apparatus or ventilating plant connected therewith or the surroundings thereof or upon any other work in connection with any blasting enclosure or with any apparatus or ventilating plant connected therewith so that he is exposed to the risk or inhaling dust which has arisen from blasting, all practicable measures shall be taken to prevent such inhalation.
- (2) In connection with any cleaning operation referred to in paragraph 5, and with the removal of dust from filtering or settling devices all practicable measures shall be taken to dispose of the dust in such a manner that it does not enter the air of any room. Vacuum cleaners shall be provided and used wherever practicable for such cleaning operations.

**7. Storage accommodation for protective wear-** Adequate and suitable storage accommodation for the helmets, gauntlets and overalls required to be provided by paragraph 5 shall be provided outside and conveniently near to every blasting enclosure and such accommodation shall be kept clean. Helmets, gauntlet and overalls when not in actual use shall be kept in this accommodation.

**8. Maintenance and cleaning of protective wear-** All helmet, gauntlets, overalls and other protective devices or clothing's provided and worn for the purpose of this schedule, shall be kept in good condition and so far as is reasonably practicable shall be cleaned on every week-day in which they are used. Where dust arising from the cleaning of such protective clothing or devices is likely to be inhaled, all practicable measures shall be taken to prevent such inhalation. Vacuum cleaners shall, wherever practicable, be used for removing dust from such clothing and compressed air shall not be used for removing dust from any clothing.

**9. Maintenance vacuum cleaning plant-** Vacuum cleaning plant used for the purpose of this schedule shall be properly maintained.

**10. Medical facilities and records of examinations and tests.**

- (1) The occupier of every factory to which the schedule applies shall-
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose appointment shall be subject to the approval of the Chief Inspector of Factories;
  - (b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

#### **11. Medical Examination by the certifying surgeon.**

- (1) Every worker employed in any of the processes to which this schedule applies shall be examined by a certifying surgeon within 15 days of his first employment. Such examination shall include pulmonary function test and chest X-ray. No worker shall be allowed to work after 15 days of his employment in the factory unless certified fit for such employment by the certifying surgeon.
- (2) Every worker employed in the said processes shall be reexamined by a certifying surgeon at least once in every 3 calendar months. Such reexamination shall, wherever the certifying surgeon considers appropriate, include pulmonary function tests and chest X-ray once in every three years.
- (3) The certifying surgeon after examine a worker, shall issue a certificate of Fitness in Form 27. The record or examination and reexamination carried out shall be entered in the certificate and the certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2) including the nature and the results tests, shall all so be entered by the certifying surgeon in health register in Form 17.
- (4) The certificate of Fitness and the health register shall be kept readily available for inspection by the inspector.
- (5) If at any time the certifying surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternative placement facility unless he is fully in capacitated in the opinion of the certifying surgeon in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) shall be reemployed or permitted to work in the said processes unless the certifying surgeon, after further examinations, again certified him fit for employment in those processes.

#### **12. Restrictions in employment of young persons**

- (1) No person under 18 years of age shall be employed in blasting or assisting at blasting or in any blasting chamber or in the cleaning of any blasting apparatus or any blasting enclosure or any apparatus or ventilating plant connected therewith or be employed on maintenance or repair work at such apparatus, enclosure or plant.
- (2) No person under 18 years of age shall be employed to work regularly within 20 feet of any blasting enclosure unless the enclosure is in a room and he is outside that room where he is effectively separated from any dust coming from the enclosure.

#### **13. Power to exempt or relax**

- (1) If the Chief Inspector is satisfied that in any factory or in any class of factory the use of sand or other substance containing free Silica as an abrasive in blasting is necessary for a particular manufacture or process (other than the process incidental or supplemental to making of metal castings) and that the manufacture or process cannot be carried on without the use of such abrasive or that owing to the special conditions or special method of work or otherwise any requirement of this schedule can be suspended either temporarily or permanently, or can be relaxed without endangering the health of the persons employed or that application of any of such requirements is for any reason impracticable or inappropriate, he may, with the previous sanction of the State Government by an order in writing exempt the said factory or class of factory from such provisions of this schedule, to such an extent and subject to such conditions and for such period as may be specified in the said order.

- (2) Where an exemption has been granted under sub-paragraph (1), a copy of the order shall be displayed at a notice board at a prominent place at the main entrances or entrances to the factory and also at the place where the blasting is carried on.

### Schedule IX

#### Liming and tanning of raw hides and skins and Process incidental thereto

##### 1. Cautionary notices

- (1) Cautionary notices as to anthrax in the form specified by the Chief Inspector shall be affixed in prominent positions in the factory where they may be easily and conveniently read by the persons employed.
- (2) A copy of warning notice as to anthrax in the form specified by the Chief Inspector shall be given to each person employed when he is engaged, and subsequently if still employed, on the first day of each calendar year.
- (3) Cautionary notice as to the effects of chrome on the skin shall be affixed in prominent positions in every factory in which chrome solutions are used and such notices shall be so placed as to be easily and conveniently read by the persons employed.
- (4) Notices shall be affixed in prominent places in the factory stating the position of the 'First Aid' box or cupboard and the name of the person in charge of such box or cupboard.
- (5) If any person employed in the factory is illiterate effective steps shall be taken to explain carefully to such illiterate person the contents of the notice specified in sub-paragraph (1), (2) and (4) and if chrome solutions are used in the factory the contents of the notice specified in sub-paragraph (3).

##### 2. Protective clothing - The occupier shall provide and maintain in good condition the following articles of protective clothing:-

- (a) waterproof footwear, leg coverings, aprons and gloves for person employed in processes involving contact with chrome solutions, including the preparation of such solutions;
- (b) gloves and boots for persons employed in lime yard; and
- (c) water proof foot wear aprons and gloves for persons employed in processes involving the handling of hides or skins, other than in processes specified in clauses (a) and (b) above:

Provided that –

The gloves, aprons, leg coverings or boots, may be of rubber or leather, if the gloves and boots to be provided under sub-paragraph (a) and (b) shall be of rubber:

Provided further that the gloves may not be provided to persons fleshing by hand or employed in processes in which there is no risk of contact with lime, Sodium sulphide or other caustic liquor.

##### 3. Washing facilities, mess room and cloak room – There shall be provided and maintained in a cleanly state and in good repair for the use of all persons employed -

- (a) a trough with a smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow of at least 60centimetres for every ten persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 60centimetres; or at least one wash basin for every ten such persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of water; together with in either case, a sufficient supply of nail brushes, soap or other suitable cleansing materials, and the clean towels;
- (b) a suitable mess-room, adequate for the number remaining on the premises during the meal intervals, which shall be furnished with sufficient tables and benches and adequate means for warming food and boiling water the mess-room shall,-
- (i) be separate from any room or shed in which hides or skins are stored, treated or manipulated;
- (ii) be separate from the cloak-room and (3) be placed under the charge of a responsible person;
- (iii) be placed under the care of a responsible person; and

- (c) suitable accommodation for clothing put off during working hours and another accommodation for protective clothing and also adequate arrangements for drying up the clothing in both the cases, if wet. The accommodation so provided shall be kept clean at all times and placed under the charge of a responsible person.
- 4. Food, drinks, etc., prohibited in work rooms** – No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any work-room or shed in which hides or skins are stored, treated or manipulated.
- 5. Medical facilities and records of examination and tests.-**
- (1) The occupier of the every factory to which the schedule applies shall-
- (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories;
  - (b) provided to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a) ;
  - (c) arrange for inspection of the hands of all the persons keeping in contact with chromium substances to be made twice a week; and
  - (d) provide, maintain, and supply suitable ointment and plaster in a box readily accessible to the workers and solely used for the purpose of keeping the ointment and the plaster.
- (2) The record of medical examination and appropriate test carried out by the said medical practitioner shall be maintain in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.
- 6. Medical Examination by the certifying surgeon.**
- (1) Every worker employed in processes to which this schedule applies shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include skin test for dermatoses and detection of anthrax bacillus from local lesion by gram stain. No worker shall be allowed to work after 15 days of his employment in the factory unless certified fit for such employment by the Certifying Surgeon.
- (2) Every worker employed in the said processes shall be reexamined by a Certifying Surgeon at least once in every 12 calendar months. Such reexamination shall, whenever the Certifying Surgeon considers appropriate, include testes specified in sub-paragraph (1).
- (3) The Certifying Surgeon after examine a worker, shall issue a Certificate of Fitness in Form 27. The record of examination and reexamination carried out shall be entered in the certificate and the certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2), including the nature and the results tests, shall all so be entered by the Certifying Surgeon in Health register in Form 17.
- (4) The Certificate of Fitness and the Health register shall be kept readily available for inspection by the inspector.
- (5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternative placement facility unless he is fully in capacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) shall be reemployed or permitted to work in the said processes unless the Certifying Surgeon, after further examinations, again certifies him fit for employment in those processes.

**Schedule X****Printing press and type foundries – certain Lead process carried on therein**

- 1. Definitions** – For the purpose of this schedule.-
  - (a) “lead material” means material containing not less than 5 percent of lead;
  - (b) “lead process” means –
    - (i) the melting of lead or any lead materials for casting and mechanical composing;
    - (ii) the recharging of machines with used lead material; or
    - (iii) any other work including removal of dross from melting pots, cleaning of plungers; and
    - (iv) Manipulation movement or other treatment of lead material.
  - (c) “Efficient exhaust draught” means localized ventilation effected by heat or mechanical means for the removal of gas, vapour, dust or fumes so as to prevent them from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove gas, vapour, fume or dust at the point where they originate.
- 2. Exhaust draught**
  - (1) None of the following process shall be carried on except with an efficient exhaust draught, unless carried on in such a manner as to prevent free escape of gas, vapour, fumes or dust into any place in which work is carried on, or unless carried on in electrically-heated and thermostatically controlled melting pots:-
    - (a) melting lead material or slugs; and
    - (b) heating lead material so that vapour containing lead is given off.
  - (2) Such exhaust draught shall be effected by mechanical means and so contrived as to operate on the dust, fume, gas or vapour given off as closely as may be at its point of origin.
- 3. Prohibition relating to women and young persons** – No woman or young person shall be employed or permitted to work in any lead process.
- 4. Separation of certain process** – Each of the following process shall be carried on in such a manner and under such conditions as to secure effectual separation from one another and from any other process –
  - (a) melting of lead or any lead material;
  - (b) casting of lead ingots; and
  - (c) mechanical composing.
- 5. Container for dross** – A suitable receptacle with tightly fitting cover shall be provided and used for dross as it is removed from every melting pot. Such receptacle shall be kept covered while in the work-room near the machine except when the dross is being deposited therein.
- 6. Floor of work-room** – The floor of every work-room where lead process is carried on shall be –
  - (a) of cement or similar material so as to be smooth and impervious to water;
  - (b) maintained in sound condition; and
  - (c) shall be cleansed throughout daily after being thoroughly damped with water at a time when no other work is being carried on at the place.
- 7. Mess-room** – There shall be provided and maintained for the use of all persons employed in a lead process and remaining on the premises during the meal intervals, a suitable mess-room which shall be furnished with sufficient tables and benches.
- 8. Washing facilities** – There shall be provided and maintained in a cleanly state and in good repair for the use of all persons employed in a lead process –
  - (a) a wash place with either -
    - (i) a trough with smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow at least 60centimetres for every five such persons employed at any one time and having a constant supply of water from taps or jets above the trough at intervals of not more than 60centimetres; or



(ii) a least one wash basin for every five such persons employed at any one time, fitted with a waste pipe and plug and having an adequate supply of water laid are always readily available; and

(b) a sufficient supply of clean towels made of suitable material renewed daily with sufficient supply of soap or other suitable cleaning material.

**9. Food, drinks, etc., prohibited in work-rooms** – No food, drink, pan and supari or tobacco shall be consumed or brought by any worker into any work-room in which any lead process is carried on.

**10. Medical facilities and records of examination and tests.-**

(1) The occupier of the every factory to which the schedule applies shall-

(a) employ a qualified medical practitioner for medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories. ;

(b) Provided to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examination and appropriate test carried out by the said medical practitioner shall be maintain in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

**11. Medical Examination by the certifying surgeon.**

(1) Every worker employed in processes shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for lead in urine and blood, ALA in urine, hemoglobin, stippling or cells and steadiness test. No worker shall be allowed to work after 15 days of his employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the said processes shall be reexamined by a Certifying Surgeon at least once in every six calendar months. Such reexamination shall, wherever the Certifying Surgeon considers appropriate, include testes specified under sub-paragraph (1).

(3) The Certifying Surgeon after examine a worker, shall issue a certificate of Fitness in Form 27. The record or examination and reexamination carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2), including the nature and the results tests, shall all so be entered by the Certifying Surgeon in health register in Form 17.

(4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternative placement facility unless he is fully in capacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be reemployed or permitted to work in the said processes unless the Certifying Surgeon, after further examinations, again certifies him fit for employment in those processes.

**12. Exemption** - Where the Chief Inspector is satisfied that all or any of the provisions of this schedule is not necessary for protection of persons employed, he may by certificate in writing exempt any factory from all or any of such provisions subject to such conditions as he may specify therein. Such certificate may any time be revoked by the Chief Inspector.

**Schedule XI**  
**Manufacture of Pottery**

1. **Savings.**- These provisions shall not apply to a factory in which any of the following articles, but no other pottery, are made:-
  - (a) unglazed or salt glazed bricks and tiles; and
  - (b) architectural terra-cotton made from plastic clay and either unglazed or glazed with a lead less glaze only.
2. **Definitions** – For the purpose of this schedule
  - (a) “pottery” includes earthenware, stoneware, porcelain, china tiles and any other articles made from clay or from a mixture containing clay and other materials such as quartz, flint, feldspar and gypsum;
  - (b) “efficient exhaust draught” means localized ventilation effected by mechanical or other means for the removal of dust or fume so as to prevent it from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove effectively dust or fume generated at the point where dust or fume originates;
  - (c) “fettling” includes scalping, towing, sand papering, sand sticking, brushing or any other process of cleaning or pottery ware in which dust is given off;
  - (d) “leadless glaze” means a glaze which does not contain more than one per cent of its dry weight, of a lead compound calculated as lead monoxide;
  - (e) “low solubility glaze” means a glaze which does not yield to dilute hydrochloric acid more than five percent of its dry weight of a soluble lead compound calculated as lead monoxide when determined in the manner described below:  
A weighed quantity of the material which has been dried at 100degree centigrade and thoroughly mixed shall be continuously shaken for one hour, at the common temperature with 1000 time its weight of an aqueous solution of hydrochloric acid containing 0.25 percent by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighed as lead sulphate;
  - (f) “ground or powered flint or quartz” does not include natural sands; and
  - (g) “Potters shop” includes all places where pottery is formed by pressing or by any other process and all places where shaping, fettling or other treatment of pottery articles prior to placing for the biscuit fire is carried on.
3. **Efficient exhaust draught** – The following processes shall not be carried on without the use of an efficient draught: –
  - (a) all processes involving the manipulation or use of a dry and unfretted lead compound.
  - (b) fettling operations of any kind, whether on green ware or biscuit, provided that this shall not apply to the wet fettling, and to the occasional finishing of potter articles without the aid of mechanical power;
  - (c) shifting of clay dust or any other material for making tiles or other articles by pressure, except where -
    - (i) this is done in a machine so enclosed as to effectually prevent the escape of dust; or
    - (ii) the material to be sifted is so damp that no dust can be given off.
  - (d) pressing of tiles from clay dust, an exhaust opening being connected with each press, and pressing from clay dust of articles other tiles; unless the materials is so damp that no dust is given off;
  - (e) the fettling of tiles made from clay dust by pressure, except where the fettling is done wholly on, or with, damp material, and fettling other articles made from clay dust, unless the materials is so damp that no dust is given off;
  - (f) process of loading and unloading of saggars where handling and manipulation of ground and powered flint, quartz alumina or other materials are involved;

- (g) brushing of earthenware biscuit, unless the process is carried on in a room provided with efficient general mechanical ventilation or other ventilation which is certified by the Inspector of Factories as adequate, having regard to all the circumstances of the case;
  - (h) fettling of biscuit ware which has been fired in powered flint or quartz except where this is done in machines so enclosed as to effectually prevent the escape of dust;
  - (i) ware cleaning after the application of glaze by dipping on other process;
  - (j) crushing and dry grinding of materials for pottery bodies, and saggars, unless carried on in machines so enclosed as to effectively prevent the escape of dust or is so damp that no dust can be given off.;
  - (k) sieving or manipulation of powered flint, quartz, clay, grog or mixture of these materials unless it is so damp that no dust can be given off;
  - (l) grinding of tiles on a power driven wheel unless an efficient water spray is used on the wheel;
  - (m) lifting and conveying of materials by elevators and conveyors unless they are effectively enclosed and so arranged as to prevent escape of dust into the air in or near to any place on which persons are employed.
  - (n) preparation or weighing out of flow material, lawning of dry colours, colour dusting and colour blowing.
  - (o) mould making unless the bins or similar receptacles used for holding plaster of paris are provided with suitable covers; and
  - (p) manipulation of calcined material unless the material has been made and remains so wet that no dust is given off.
- 4. Separations of processes-** Each of the following processes shall be carried on in such a manner and under such conditions so as to secure effectual separation from one another, and from other wet processes: -
- (a) crushing and dry grinding or sieving of materials, fettling, pressing of tiles, drying of clay and greenware, loading and unloading of saggars; and
  - (b) all processes involving the use of a dry lead compound.
- 5. Prohibition on use of glaze.-** No glaze which is not a leadless glaze or a low solubility glaze shall be used in a factory in which pottery is manufactured.
- 6. Prohibition relating to women and young persons.-** No women or young person shall be employed or permitted to work in any of the operations specified in paragraph 4, or at any place where such operations are carried on.
- 7. Provision of screen to potter's wheel.-** The potter's wheel (Jolly and Jigger) shall be provided with screens or so constructed as to prevent clay scraping being thrown off beyond the wheel.
- 8. Control of dust during cleaning.**
- (1) All practical measures shall be taken by damping or otherwise to prevent dust arising during cleaning of floors.
  - (2) Damp Saw-dust or other suitable material shall be used to render the moist method effective in preventing dust rising into the air during the cleaning process which shall be carried out after work has ceased.
- 9. Floor or certain works rooms.-** The floors of potter's shops, slips houses, dipping houses and ware cleaning rooms shall be hard, smooth and impervious and shall be thoroughly cleaned daily by a moist method by an adult male using a moist method.
- 10. Protective equipment**
- (1) The occupier shall provide and maintain suitable overalls and head coverings for all persons employed in process employed in process included under paragraph 3.
  - (2) The occupier shall provide and maintain suitable aprons of water proof or similar material, which can be sponged daily, for the use of the dippers, dippers' assistants, throwers, jolly workers, casters, mould makers and filter press and pug mill workers.

(3) Aprons provided in pursuance of paragraph 10 (2) shall be thoroughly cleaned daily by the wearers by sponging or other wet process. All overalls and head coverings shall be washed, cleaned and mended at least once a week, and this washing, cleaning or mending shall be provided for by the occupier.

(4) No person shall be allowed to work in emptying sacks of dusty materials, weighing out and mixing of dusty materials and charging of ball mills and plungers without wearing a suitable and efficient dust respirator.

**11. Washing facilities** - The occupier shall provided and maintain, in a clean state and in good repair for the use of all persons employed in any of the processes specified in paragraph 3.

(a) a wash place under cover, with either-

(i) a trough with smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow at least 60 practitioner for every five such persons employed at any one time, and having a constant supply of clean water from taps or jets above the trough at intervals of not more than 60 practitioner; or

(ii) at least one tap or stand pipe for every five such persons employed at any one time, and having a constant supply of clean water, the tap or stand pipe being spaced not less than 120 practitioner apart; and

(b) a sufficient supply of clean towels made of suitable material changed daily, with sufficient supply of nail brushes and soap.

**12. Time allowed for washing** - Before each meal and before the end of the day's work, at least ten minutes, in addition to the regular meal times, shall be allowed for washing to each person employed in any of the processes mentioned in paragraph 3.

**13. Mess room**

(1) There shall be provided and maintained for use of all persons remaining within the premises during the rest intervals, a suitable mess room providing accommodation of 0.93 square meter per head and furnished with-

(a) a sufficient number of tables and chairs or benches with back rest;

(b) arrangement for washing utensils;

(c) adequate means for warming food; and

(d) adequate quantity of drinking water.

(2) The room shall be adequately ventilated by the circulation of fresh air and placed under the charge of a responsible person and shall be kept clean.

**14. Food, drinks etc., prohibited in work-rooms-** No food, drink, pan and supari or tobacco shall be brought into, or consumed by any worker in any work-room in which any of the processes mentioned in paragraph 3 are carried on and no person shall remain in any such room during intervals for meals or rest.

**15. Clock room, etc.-** There shall be provided and maintained for the use of all persons employed in any of the processes mentioned in paragraph 3-

(a) a clock-room for clothing put off during working hours and such accommodations shall be separated from any mess room; and

(b) separate and suitable arrangements for the storage protective equipment provided under paragraph 10.

**16. Medical facilities and records of examination and tests.-**

(1) The occupier of the every factory to which the manufacture or pottery is carried, on shall-

(a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories.

(b) Provided to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

- (2) The record of medical examination and appropriate test carried out by the said medical practitioner shall be maintain in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

**17. Medical Examination by the Certifying Surgeon.**

- (1) Every worker employed in any processing mentioned under paragraph 3, shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include test for lead in urine and blood. ALE in urine, hemoglobin content, stippling of cells and pulmonary function tests and chest X-ray for workers engaged in process mentioned in clauses 9(a) and (n) of paragraph 3 and pulmonary function test and chest X-rays for the others. No worker shall be allowed to work after 15 days of his employment in the factory unless certified fit for such employment by the Certifying Surgeon.
- (2) All persons worker employed in any of the process, include under sub-paragraph 3 (a) and 3 (n) shall be examined by a Certifying Surgeon once in every calendar months. Those employed in any other process mentioned in the remaining sub-paragraphs of paragraph 3 shall be examined by a certifying surgeon once in every 12 months. Such examination in respect of all the workers shall include the entire test in specified sub-paragraph (1) except chest X-ray which will be once in three years.
- (3) The Certifying Surgeon after examine a worker, shall issue a Certificate of Fitness in Form 27. The record or examination and reexamination carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2) including the nature and the results tests, shall all so be entered by the Certifying Surgeon in health register in Form 17.
- (4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector.
- (5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternative placement facility unless he is fully in capacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be reemployed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certified him fit for employment in those processes.

- 18. Exemption** – If in respect of any factory the Chief Inspector of Factories is satisfied that all or any of the provisions of this Schedule are not necessary for the protection of the persons employed in such factory, he may by a certificate in writing exempt such factory from all or any of such provisions, subject to such conditions as he may specify therein. Such certificate may at any time be revoked by the Chief Inspector without assigning any reasons.

**Schedule XII**

**PART 1**

**Chemical Works**

- 1. Application.**- This schedule shall apply to all manufacture and process incidental thereto carried on chemical works .
- 2. Definitions.**- For the purpose of this schedule-
- (a) “chemical works” means any factory or such parts of any factory as are listed in Appendix “A” to this Schedule.

- (b) “efficient exhaust draught” means localized ventilation affected by mechanical or other means for the removal of gas, vapour, fume or dust to prevent it from escaping into the air of any place in which work is carried on.
- (c) “bleaching powder” means the bleaching powder commonly called chloride of lime;
- (d) “chlorate” means chlorate or perchlorate.
- (e) “caustic” means hydroxide of potassium or sodium.
- (f) “chrome process” means the manufacture of chromate or bichromate of potassium or sodium, or the manipulation, movement or other treatment of these substances;
- (g) “nitro or amino process” means the manufacture of nitro or amino derivatives of phenol and of benzene or its homologues, and the making of explosives with the use of any of these substances.
- (h) the term “permit to work system” means the compliance with the procedures lay down under paragraph 20 of part II .
- (i) “toxic substances” means all those substances which when they enter into the human body, through inhalation or ingestion or absorption through in sufficient quantities cause fatality exert serious affliction of health or chronic harmful effects on the health of person exposed to it due its inherent chemical or biological effects. In respect to substances whose TLV is specified in Rule 121A, exceeding the concentration specified therein wood made the substance toxic;
- (j) “emergency” means a situation or condition leading to circumstance or set of circumstances in which there is danger to the life or health of persons or could result in big fire or explosion or pollution to the work and outside environment, effecting the workers or neighborhood in a series manner, demanding immediate action;
- (k) “dangerous chemical reaction” means high speed reactions, run away reactions, delayed reaction, etc., and are characterized by evaluation of large quantities of heat, intense, release of toxic or flammable gases or vapours, sudden pressure build-up etc.,
- (l) “manipulation” means mixing, blending, filling, emptying, grinding, sieving, drying, packing, sweeping, handling, using etc.,
- (m) “appropriate persons protective equipment” means items of personnel protective equipment conforming to the relevant ISI specifications or in the absence of it, personnel protective equipment approved by the Chief Inspector of factories;
- (n) “appropriate personal protective equipment” means that when the protective equipment is used by the worker he shall have no risk to his life or health or body; and
- (o) “continued space” means any space by reason of its construction as well as in relation to the nature of the work carried on therein and where hazards to the persons entering into or working inside exist or are likely to develop during working.

## PART II

### General Requirements

Applying to all the works in Appendix “A”

#### 1. Hose keeping.

- (1) Any spillage of material shall be claimed up before further processing.
- (2) Floors, platforms, stairways, passages and gangways shall be kept free of any obstruction.
- (3) They shall be provided easy means of access to all parts of the plant to facilitate cleaning.

#### 2. Improper use of chemicals.- No chemicals or solvent or empty containers containing chemical or solvents shall be permitted to be used by workers for any purposes other than in the processes for which they are supplied.

#### 3. Prohibition on the use of food, etc.- No food, drink, tobacco, pan or edible item shall be stored or heated or consumed or on nearby part of the plant or equipment.

**4. Cautionary Notices and Instruction**

- (1) Cautionary notices in a language understood by the majority of the workers shall be prominently displayed in all hazardous areas drawing the attention of all workers about the hazards to health, hazards involving fire and explosion and any other hazards such consequence or testing of material of substances used in the process or using any contaminated container for drinking or eating, to which the workers attention should be drawn for ensuring the safety and health.
- (2) In addition to the above cautionary notice arrangement shall be made to instruct educate are the workers including illiterate workers about the hazards in the process including the specific hazards to which they may be exposed to, in the normal course there work. Such instruction and education should also deal with the hazards involved in authorized and unsafe practices including the properties of substances used in the process under normal condition as well as abnormal conditions and the precaution to be observed against each and every hazard. Further an undertaking from the workers shall be obtained within one month of their employment and for old workers employed within one month of coming in to operation of the rules effect that they have read the contents of the cautionary notice and inspections, understood them and would abide them. The training and instructions to all workers and all supervisory personnel shall include the significance of different types of symbols and colours used on the label struck or painted on the various types containers and pipe lines.

**5. Evaluation and provision of safe guards for the commencement of process**

- (1) Before commencing any process or any experimental work, or any manufacture covered under Appendix "A", the occupier shall take all possible steps to ascertain definitely all the hazards involved both from the actual operations and the chemical reactions including the dangerous chemical reactions. The properties of the raw materials used, the final products to be made and any by-product derived during manufacture, shall be carefully studied and provisions shall be made for dealing with any hazards including effects or workers which may occur during manufacture.
- (2) Information in writing, giving details of the process its hazards and the steps taken or proposed to be taken from the design state to disposal stage for ensuring the safety as in sub-paragraph (1) above should be sent to the Chief Inspector at the earliest but in no case less than 15 days before commencing manufacture, handling or storage of any of items covered under Appendix "A", whether on experimental basis, or as pilot plant or as trail production or as large scale manufacture.
- (3) The design, Construction, installation, operator maintenance disposal of the buildings, plans and facilities shall take into consideration effective safe guards against all the safety and health hazards so evaluated.
- (4) The requirements under sub-paragraph (1) to 3 shall not act in lieu of or in derogation to any other provision, contain in any act governing the work.

**6. Authorize entry.-** Authorized persons only shall be permitted to enter any section of the factory or plant were any dangerous operations or processes are being carried on or where dangerous chemical reaction are taking place or were hazards chemical are store.**7. Examination of instrument and safety devices.**

- (1) All instruments safety device use in the process shall be tested before taking into us and after carried out any repair to them and examined once in a month, by a competent person. Records of such tests and examination shall be maintained in a register.
- (2) All instruments and safety devices used in the process shall be operated daily or as often as it is necessary to ensure its effective efficient working all time.

**8. Electrical installation-** all electrical installation used in the process covered in Appendix "A" shall be of an appropriate type to ensure safety against the hazards prevalent in that arc such suitability against dust, dampness, corrosion, flammability and explosivity etc., and shall conform to the relevant ISI specification governing the construction and the use for that area.

**9. Handling and storage of chemicals.**

- (1) The containers for handling and storage of chemicals shall be of adequate strength taking into a consideration the hazardous nature of the contents. They shall also be provided with adequate labeling and colour coding arrangements to enable identification of the containers and their contents indicating the hazards and safe handling methods and shall conform to the respective ISI standards the instruction given in the label shall be strictly adhered to. Damaged container shall be handled only under supervision of a knowledgeable and responsible person and spillage shall be rendered innocuous in a safe manner using appropriate means.
- (2) The arrangement for the storage of chemicals including charging of chemicals in reaction vessels and containers shall be such as to prevent any risk of fire or explosion or formation of toxic consideration of substance above the limits specified in rule 129 A.
- (3) Without prejudice to the generally of the requirements in sub paragraph (2) above, the arrangement shall have suitable ventilation facilities and shall enable the maintenance of levels in vessels and containers. Such arrangement shall all so take into consideration, the type of flooring and the capacity of flooring and the compatibility requirement of substance with other chemical stored nearby.
- (4) (a) Storage of chemical and intermediate products which are highly unstable or reactive or explosive shall be limited to the quantities required for two months used.  
(b) Whenever the quantities laid down in above clause (a) are to exceeded, the permission of the Chief Inspector shall be obtained.  
(c) Notwithstanding anything contain in clause 9 (a) and (b) above the Chief Inspector of Factories may direct any factory carrying out process covered in Appendix "A" to further limit the storage of hazardous substance to quantity less than two months of consideration of safety.
- (5) Standby arrangements equal to the biggest container shall always be available to transfer the toxic substance quickly into the stand by storage facility in any defect develops in any of container resulting in the release of toxic substance.
- (6) Any storage facility constructed using non-metallic material such as Fiber Glass Reinforced plastics (FRP) all glasses vessels, etc., shall have adequate strength to withstand the stress, if any, exerted by the contains and shall be properly anchored working platform access ladders, pipe line etc. used in such storage facility shall not have any support on the structure of storage facility and shall be independently supported.

**10. Facility for isolation.-** The plant and equipment shall be constructed and maintained as to enable quick isolation of plant or part of plant or equipments, with appropriate indication. One copy of the layout plan indicating the isolation facilities shall always be available with the security personnel, the maintenance and the health and safety personnel and these isolation facilities shall be checked for its effectiveness once in a month.

**11. Personnel protective equipment**

- (1) All workers exposed to the hazards in the process covered by this schedule shall be provided with appropriate and approved type of personal protective equipment. Such equipment shall be in a clean, sterile and hygienic condition before issue.
- (2) The occupier shall arrange to inform, educate and supervise all the workers in the use of personnel protective equipment while carrying out the job.
- (3) As regard any doubt regarding appropriateness of any personnel protective equipment, the decision of the Chief Inspector will be final.

**12. Alarm System.**

- (1) Suitable and effective alarm systems giving audible and visible and indication, shall be installed at the control room as well as in all strategic location were process control arrangements are available so as to enable corrective action to be taken before the operational parameters exceed the predetermined safe levels or lead to conditions conducive for an outbreak of fire or explosion



to occur. Such alarm system shall be checked daily and tested every month at least once to ensure to its performance efficiency at all times.

- (2) The chief inspector of Factories may direct such system to be installed in case of plants or process where toxic materials are being used and spillage or leakage of which may cause widespread poisoning in or around the plant.

**13. Control of escape of substance in to the work atmosphere**

- (1) Effective arrangements such as, enclosure or by-pass, or efficient exhaust draught, maintained of negative pressure etc., shall be provided in all plants, containers, vessels, sewers, drains, flues, ducts, culverts and buried pipes and equipment to control the escape and spread of substance which are likely to give rise to fire or explosion or toxic hazards during normal working and in the event of accident or emergency.
- (2) In the event of the failure of the arrangement for control resulting in the escape of substance in the work atmosphere immediate steps shall be taken to control the process in such a manner, that further escape is brought down to the safe level.
- (3) The substance that would have escaped into the work atmosphere before taking immediate steps as required in sub-paragraph (2), shall be rendered innocuous by diluting with air or water or any other suitable agent or by suitably treating the substance.

**14. Control of dangerous chemical reaction.-** Suitable provision such as automatic or remote control arrangements shall be made for controlling the effects of dangerous chemical reaction. In the event of failure of control arrangements automatic flooding or blanketing or other effective arrangements shall come into operation.

**15. Testing, examination and repair of plant and equipment.**

- (1) All parts of plant, equipment and machinery used in the process which in the likely event of the failure may give rise to an emergent situation shall be tested by a competent person before commencing process and retested at an interval of two years or after carrying out repairs to it. The competent person shall identify the parts of the plant, equipment and machinery required to be tested as aforesaid and evolve a suitable testing procedure. In carrying out the test as mentioned above in respect of pressure vessels or reaction vessels the following precautions shall be observed, namely:-
  - (a) before the test is carried out, each vessel shall be thoroughly cleaned and examined externally, and as far as practicable, internally also for surface defects, corrosion and foreign matter. During the process of cleaning and removal of sludge, if any, all due precautions shall be taken against fire or explosion, of such sludge is of pyrophoric nature or contains spontaneous combustible chemicals;
  - (b) as soon as the test is completed, the vessel shall be thoroughly dried internally and shall be clearly stamped with the marks and figure indicating the person by whom testing has been done and the date of test; and
  - (c) any vessel which fails to pass the test or which for any other reason is found to be unsafe for use shall be destroyed or rendered unusable under intimation to the Chief Inspector.
- (2) All parts of plant, equipment, machinery which in the likely event of failure may give rise to an emergent situation shall be examined once in month by the competent person.
- (3) Records of testing and examination referred to in paragraph (1) and (2) shall be maintained as long as that part of the plant, equipment and machinery are in use.
- (4) All repair work including alteration, modification and addition to be carried out to the plant equipment and machinery shall be done under the supervision of a responsible person who shall evolve a procedure to ensure safety and health of persons doing the work. When repair or modification is done on pipe lines, and joints are required to be welded, but welding joints shall be preferred. Wherever necessary the responsible person shall regulate the aforesaid work through a "permit to work system".

**16. Staging.**

- (1) All staging that is created for the purpose of maintenance work or repair work or for work connected with entry into confined spaces and used in the processes included in Appendix "A" shall be stable rigid and constructed out of substantial material of adequate strength. Such staging shall conform to the respective Indian Standard Specification.
- (2) Staging shall not be erected over any closed or open vessel unless the vessel is so constructed and ventilated to prevent exposure of person working on the stage
- (3) All the staging constructed for the purpose of this para shall have appropriate access which are safe and shall be fitted with proper hand rails to a height of 1 metre and to be board.

**17. Seating arrangements.**- The seating arrangements provided for the operating personal working in process covered in Appendix "A" shall be located in the safe manner as to prevent the risk of exposure to toxic, flammable and explosive substances evolved in the work environment in the course of manufacture or repair or maintenance, either due to failure plant and equipment or due to the substances which are under pressure, escaping into the atmosphere.

**18. Entry into or working confined spaces**

- (1) The occupier of every factory to which the provision of this schedule apply, shall ensure the observance of the following precautions before permitting any person to enter or work inside the confined spaces.
  - (a) identify all confined spaces and the nature of hazards that are encountered in such spaces, normally or abnormally, and arrange to develop the most appropriate safeguards for ensuring the safety and the health of persons entering into or working inside, the confined spaces;
  - (b) regulate the entry or work inside the confined spaces through a "permit to work system" which should include the safeguard to developed as required under sub clause (a) above;
  - (c) before testing the confined space for entry into or work, the place shall be rendered safe by washing or cleaning with neutralizing agents; or purging with steam inert gases and making adequate forced ventilation arrangements or such measures which will render the confined space safe;
  - (d) shall arrange to carry out such test as are necessary for the purposes by a competent person and ensure that the confined space is safe for the person to enter or work. Such testing shall be carried out as often as is necessary during the course of work to ensure its continued safety;
  - (e) shall arrange to educate and train the personnel who would be required to work in confined spaces about the hazards involved in the work. He shall also keep in readiness the appropriate and approved personal protective equipment including arrangements for rescue, resurrection and first-aid, and shall arrange supervision of the work at all times by a responsible and knowledgeable person.
- (2) The manager shall maintain a log of all entry into or work in confined space and such record shall contain the details of persons assigned for the work, the locations of the work and such other detail would have a bearing on the safety and health of the person assigned for the person. The law book so maintain shall be retained as long as the concerned workers are in service and produced to the Inspector when demand.

**19. Maintenance works etc.,**

- (1) All the work connected with the maintenance of plants and equipments including cleaning of empty containers which have held hazardous substances used in the process covered in this schedule, shall be carried out under "permit to work system" employing trained personnel and under the supervision of responsible person, have a knowledge of the hazards and precaution required to deal with them.
- (2) Maintenance work shall be carried out in such manner that there is risk to persons vicinity or to persons who pass by. If necessary, the place of such work shall be condoned off or the presence of unconnected persons effectively controlled.

**20. Permit to work system.-** The permit to work system shall inter-alia include the observance of the following precaution while carrying out any specified work to be subject to the permit to work system-

- (a) all work subject to the permit to work system shall be carried out under the super vision of a knowledgeable and responsible person.
- (b) all parts of plant or machinery or equipment on which permit to work system is carried out shall remain isolated from other parts throughout the period of permit to work and the place of work including the parts of plant may, machinery shall be rendered safe by cleaning, purging, washing etc,
- (c) all work subject to the permit to the work system shall have predetermined work procedure which integrate safety with the work. Such procedure shall be reviewed whenever any change occurs in material or equipment so that continued safety is ensured;
- (d) persons who are assigned to carry out the permit to work system shall be physically fit in all respect in taking into consideration the demand and nature of the work before entering into the confined space. Such person shall be adequately informed about the correct work procedures as well as the precautions to be observed while carrying out the permit to work system;
- (e) adequate rescue arrangements wherever considers necessary and adequate first-aid, rescue and resurrection arrangements shall be available in good working condition near the place of work while carrying out the permit to work system, for use in emergency.
- (f) appropriate and approved personal protective equipment shall be used while carrying out the “permit to work system”.
- (g) after completion of work subject to the “permit to work system” the person responsible shall remove all the equipment and tools and restore to the original condition so as to prevent any danger while carrying out regular process.

**21. Safety sampling personnel.-** The occupier shall ensure the safety of person assigned for collecting sample by instructing them on the safe procedure. Such personnel shall be provided with proper and approved personnel protective equipment, if required.

**22. Ventilation.-** Adequate ventilation arrangements shall be provided and maintained at all times in the process area where dangerous or toxic or flammable or explosive substances could be evolved. These arrangements shall ensure that concentration, which are either harmful or could result in explosion, are not permitted to be build up in the work environment.

**23. Procedure for meeting emergencies**

- (1) The occupier for every factory carrying out the works covered in Appendix “A” shall arrange to identify all types of possible emergency that could occur in the process during the course of work or while carrying out maintenance work or repair work. The emergency is so identified shall be reviewed every year.
- (2) The occupier shall formulate a detailed plan to meet all such identified emergencies including arrangements for summoning outside help for rescue and fire fighting arrangements for making available urgent medical facilities.
- (3) The occupier shall send the list of emergency and the details of procedure and plants formulated to meet the emergencies to the Chief Inspector of Factories.
- (4) The occupier shall arrange to install distinctive and recognizable warning arrangements to caution all persons inside the plant as well as the neighboring community, if necessary, to enable evacuation of persons and to enable the observance of emergency procedures by the person who are assigned emergency duties. All concern must well informed about the warning arrangements and there meaning the arrangements must be checked for its effectiveness every month.
- (5) Alternate power supply arrangements shall be made and interlocked with the normal power supply system so as to insure constant supply of power to the facilities and equipment meant for compliance with requirements of paragraph 10, 11,12,13,14,18,22 and this paragraph of part II, part III, part IV and Part V of this schedule.

- (6) The occupier shall arrange to suspend further process work in a place where emergency is established and shall forthwith evacuate all persons in that area except workers who have been assigned emergency duties.
- (7) All the employees of the factory shall be trained about the action to be taken by them including evacuation procedures during emergencies.
- (8) All emergency procedures must be rehearsed every three months and deficiencies, if any, in the achievement of the objectives shall suitably be corrected.
- (9) The occupier shall arrange to have ten percent of the workers trained in the use of First Aid Fire Fighting appliances and in the rendering of specific First Aid measured taking in to consideration the special hazards of the particular process.
- (10) The occupier shall furnish immediately on request the specific chemical identity of the hazardous substances to the treating physician when the information is needed to administer proper emergency or first aid treatment to exposed persons.

#### **24. Danger due to effluent.**

- (1) Adequate precautions shall be taken to prevent the mixing of effluents from different processes and operations which may case may dangerous or poisonous gases to be evolved.
- (2) Effluents which contain or give rise in the presence of other effluents to poisonous gases shall be provided with independent drainage systems to ensure that they may be trapped and rendered safe.

### **PART- III**

#### **Fire and Explosion risks**

##### **1. Source of ignition including lighting installation**

- (1) No internal combustion engine and no electric motor or other electric equipment and fitting mixtures capable of generating sparks or otherwise causing combustion or any other sources of ignition or any naked light shall be installed or permitted to be used in the process area where there could be fire and explosion hazards.
- (2) All hot exhaust pipes shall be installed outside a building and other hot pipes or hot surface or surfaces likely to become hot shall be suitably protected.
- (3) The classification work area in terms of its hazard potential and the selection of electrical equipment or other equipment that could constitute a source of ignition shall be in accordance with the respective Indian standard.
- (4) Where a flammable atmosphere may be prevalent or could occur, the soles of footwear worn by workers shall have no metal on them, and the wheels of trucks or conveyors shall be of non-conductive type.
- (5) All tools and appliances used for work in this area shall be of non-sparking type.
- (6) Smoking in process areas where there are risks of fire and explosion shall be prohibited and warning notices in the language understood by majority of workers shall be pasted in the factory prohibiting smoking into specified areas.

##### **2. Static Electricity.**

- (1) All machinery and plant, particularly, pipe lines and belt drives, on which static charge is likely to accumulate, shall be effectively earthed. Receptacles for inflammable liquid shall have metallic connections to the earthed supply tanks to prevent static sparking. Where necessary, humidity shall be regulated.
- (2) Mobile tanker wagons shall be earthed during filling and discharge, and precautions shall be taken to ensure that earthing is effective before such filling or discharge takes place.

##### **3. Lighting protection-** Lighting protection arrangement shall be fitted where necessary, and shall be maintained.

- 4. Process heating.-** The method of providing heat for a process likely to result in fire and explosion shall be as safe as possible and where the use of naked flame is necessary, the plant shall be so constructed as to prevent any escaping of flammable gas, vapour or dust from coming into contact with the flame, or exhaust gas, or other sources likely to cause ignition. Wherever possible, the heating arrangement shall be automatically controlled at a predetermined temperature below the danger temperature.
- 5. Leakage of flammable liquids**
- (1) Provision shall be made to confine by means of bund walls, dikes, sumps etc., possible leakages from storage vessels containing flammable liquids.
  - (2) Waste material in contact with flammable substances shall be disposed off suitably under the supervision of knowledgeable and responsible person.
  - (3) Adequate and suitable fire –fighting appliances shall be installed in the vicinity of such vessels.
- 6. Safety Valves.-** Every still and every closed vessel in which gas is evolved or in to which gas is passed and in which the pressure is liable to rise above the atmospheric pressure, shall have attached to it a pressure gauge, and a proper safety valve or other equally efficient means to relieve the pressure. These appliances shall be maintained in good condition.
- 7. Installation of pipe line etc.-** All pipe lines carrying flammable or explosive substances shall be protected from mechanical damage and shall be examined by a responsible person once in week to detect any deterioration or a defects, or accumulation of flammable or explosive substances, and record kept of any defects found and repairs made.
- 8. Fire fighting system.**
- (1) Every factory employing 500 or more persons and carrying out process listed in Appendix “A” shall provide.
    - (a) trained and responsible fire fighting squad as to effectively handle the fire fighting and life saving equipment in the event of fire or other emergency. Number of persons in this squad will necessarily depend up on the side of risk involved, but no case shall be less than eight such trained persons to be available at any time. The squad shall consist of watch and ward personnel, fire pump man and departmental supervisors and operators trained in the operation of fire and emergency services.
    - (b) Squad leaders shall preferably be trained in a recognized government institution and their usefulness enhanced by providing residence on the premises.
    - (c) Squad personnel shall be provided with clothing and equipment including helmets, boots and belts.
  - (2) A muster roll showing the duties allocated to each member of the squad shall be prepared and copies supplied to each leader as well as display in prominent places so as to be easily available for reference in case of emergency.
  - (3) The pump man shall be thoroughly conversant with the location of all appliances. He shall be responsible for maintaining all firefighting equipment in proper working order. Any defect coming to his notice shall be immediately brought to the notice of squad leader.
  - (4) As far as is practicable, the fire pump from the main gate(s) of the factory shall be connected to all manufacturing or storing areas through telephone, interlinked and placed in convenient location near such area.

#### PART IV

#### Risks of Toxic Substances.

- 1. Leakage.**
- (1) All plants shall be so designed and constructed as to prevent the escape of toxic substances. Where necessary, separate building rooms or protective structure shall be used for the dangerous stages of the process and the building shall be so designed as to localise any escape of toxic substances.

- (2) Catch pits, bunt walls, dykes, or other suitable safe guards shall be provided to restrict the serious effects in such leakage. Catch pits shall be placed below joints in pipe lines where there is danger involved to maintenance and other workers from such leakage.
- 2. Drainage .-** Adequate drainage shall be provided and shall lead to collection tanks specifically provided for this purpose where in deleterious material shall be neutralized, treated or otherwise rendered safe before it is discharged into public drains or sewers.
- 3. Covering of vessels.**
- (1) Every fixed vessels or structure containing any toxic substances and not so covered as to eliminated all reasonable risk of accidents contact of any portion of the body of a worker, shall be so constructed as to avoid physical contact.
- (2) Such vessels shall, unless its edge is at least 90centimeters above the adjoining ground or plat form, be securely fenced to a height of at least 90centimeters above such adjoining ground or plat form.
- (3) Where such vessels adjoin and the space between them clear of any surrounding brick or other work is either less than 45centimeters in width or 45 or more centimeters in width, but it is not securely fenced on both sides to a height of at least 90centimeters, secure barriers shall be so placed as to prevent passage between them.
- Provided that sub-paragraph 92 of this paragraph shall not apply to –
- (a) saturators used in the manufacture of sulphate ammonia; and
- (b) that part of the sides of brain evaporating pans which require racking, drawing or filling.
- 4. Continuous exhaust arrangement**
- (1) Any process evolving toxic vapour, gas, fume and substance shall have efficient continuous exhaust draught, such arrangement, shall be interlocked in the process controlled wherever possible.
- (2) In the event of failure of continuous exhaust arrangements means shall be provided to automatically stop the process.
- 5. Work bench.-** All the work benches used in the process involving the manipulation of toxic substances, shall be graded properly and shall be made of smooth impervious surface which shall be washed daily after the completion of work.
- 6. Waste disposal.**
- (1) There shall be provided in suitable receptacle made of non-absorbable material with a tightly fitting cover for depositing waste material soiled with toxic substances and the contents of such receptacle shall be destroyed by burning other suitable method under the supervision of a responsible person.
- (2) During the course of manufacture, whenever any batch or intermediate products having toxicity is rejected on considerations of quality, sufficient precautions shall be taken to render them innocuous or otherwise treat them or inactive them, before disposal.
- (3) The empty containers of toxic substances shall be cleaned thoroughly before disposal under the supervision of a responsible person.

## PART V

### Special Provisions

#### 1. Special precautions for Nitro or Amino processes.

- (1) Unless the crystallised nitro or amino substances or any of its liquor is broken or agitated in a completely enclosed process so as not to give rise of dust or fume, such process shall be carried on under an efficient exhaust draught or by adopting any other suitable means in such manner as to prevent the escape of dust or fume in the working atmosphere.
- (2) No part of the plant or equipment or implements which was in contact with nitro or amino compounds shall be repaired or handled unless they have been emptied and thoroughly cleaned and decontaminated.

- (3) Filling of containers with nitro or amino compounds shall be done only using a suitable scoop or avoid physical contact and the drying of the containers in the stove shall be done in such a manner that the hot and contaminated air from the stove is not drawn into the work room.
- (4) Processes involving the steaming into or around any vessel containing nitro or amino compounds or its raw materials shall be carried out in such a manner that the steam or vapour is effectively prevented to be blown back into the working atmosphere.
- (5) Suitable antidotes such as methylene blue injection shall always be available at designated places of work for use during emergency involving the poisoning with nitro or amino compounds.

## 2. Special precaution for “Chrome processes”.

- (1) Grinding and sieving of raw materials in chrome process shall be carried on such a manner and under such condition as to secure effective separation from any other processes and under an efficient exhaust draught.
- (2) There shall be washing facility located very near to places where wet chrome processes such as leaching, acidification, sulphate settling, evaporation, crystallisation, centrifugation or packing are carried out, to enable quick washing of affected parts of body with running water.
- (3) Weekly inspection of hand and feet of all persons employed in chrome process shall be done by qualified nurse and record of such inspection shall be maintained in a form approved by the Chief Inspector of Factories.
- (4) There shall be always available at designated places of work suitable ointment such as glycerin, Vaseline etc., and water proof plaster in a separate box readily accessible to the workers so as to protect against perforation of nasal septum.

## 3. Special precautions for processes carried out in all glass vessels.

- (1) Processes and chemical reactions such as manufacture of vinyl chloride, benzyl chloride etc., which are required to be carried out in all glass vessels shall have suitable means like substantial wire mesh covering to protect persons working nearby in the event of breakage of glass vessel.
- (2) Any spillage or emission of vapour from the all glass vessel due to breakage, shall be immediately inactivated or rendered innocuous by suitable means such as dilution with water or suitable solvents so as to provide the risk of fire or explosion or health hazards.

## 4. Special precaution for processes involving chlorite manufacture

- (1) Crystallisation, grinding or packing of chlorite shall not be done in place used for any other purpose and such places shall have hard, smooth and impervious surface made of non-combustible material. The place shall be thoroughly cleaned daily.
- (2) The personal protective equipments like overall, etc., provided for the chlorite workers shall not be taken from the place of work and there shall be thoroughly cleaned daily.
- (3) Adequate quantity of water shall be available near the place of chlorite process for use during fire emergency.
- (4) Wooden vessels shall not be used for the crystallization of chlorite or to contain crystallized ground chlorite.

## 5. Special precautions in the use of plant and equipments made from reinforced plastics

- (1) All plant and equipments shall conform to appropriate Indian or any other National Standard.
- (2) Care shall be taken during storage, transport, handling and installation of plant and equipments to avoid accidental damage.
- (3) All plant and equipments shall be installed in such a way as to ensure that loads are distributed as intended in design or as per the recommendations of the manufacturers.
- (4) All pipe work shall be supported so that total loads local to the branches on the vessel or tank do not exceed the design values.
- (5) After erection all plant and equipments shall be subjected a pressure test followed by a thorough examination by a competent person. The test and examination shall be as per relevant standards. A Certificate of test and examination by competent person shall be obtained and kept available at site.

- (6) All plant and equipments shall be subjected to periodical test and examination and record maintained, as per paragraph 15 in Part II of this schedule.
- (7) Plant and equipments during their use shall not be subjected to over filling or over loading beyond rated capacity.

## PART VI Medical Requirements

**1. Decontamination Facilities-** In all the places where toxic substances are used in processes listed in Appendix "A" the following provisions shall be made to meet an emergency.

- (a) fully equipped first aid box,
- (b) readily accessible means of drenching with water person, part of body of persons, and clothing or persons who have been contaminated with such toxic and corrosive substances, and such means shall be as shown in the Table below :

No. of person employed at any time	No. of drenching showers
Up to 50 persons	2
Between 51 to 100	3
101 to 200	3 + 1 for every 50 persons thereafter
201 to 400	5 + 1 for every 100 persons thereafter
401 and above	7 + 1 for every 200 persons thereafter

- (c) a sufficient number of eye wash bottles filled with distilled water or suitable liquid, kept in boxes or cupboards conveniently situated and clearly indicated by a distinctive sign which shall be visible at all times.

**2. Occupational Health Centre.-** In all factories carrying out processes covered in Appendix "A" there shall be provided and maintained in good order an occupational health centre which facilities as per scale laid down hereunder-

- (1) For factories employing up to 50 workers.-
- (a) the service of qualified medical practitioner hereinafter non as Factory Medical Officer, available on a retainership basis in his notified clinic near to the factory for seeking medical help during emergency. He will also carry out the pre-employment and periodical medical examinations as stipulated in paragraph 4 of this part.
- (b) A minimum of 5 persons trained in first aid procedures, amongst whom at least one shall always be available during the working period.
- (c) A fully equipped first-aid box.
- (2) For factories employing 51 to 200 workers.-
- (a) The Occupational Health Centre shall have a room having a minimum floor area of 15sq.m. with floors and walls made of smooth hard and impervious surface and shall be adequately illuminated, ventilated and equipped.
- (b) A part-time Factory Medical Officer will be overall charges of the centre whom shall visit the Factory minimum twice in a week and who services shall be readily available during emergencies.
- (c) There shall be one qualified and trained dresser-cum-compounder on duty throughout the working period.
- (d) A fully equipped first-aid box.
- (3) Factories employing above 200 workers.-
- (a) There shall be one Full-time Factory Medical Officer for factories employing up to 500 workers and one more medical officer for every thousand workers or part thereof.



- (b) The Occupational health centre in this case shall have a minimum of two rooms each having a minimum floor area of 15sq.m. with floors and walls made of smooth, hard and impervious surface and shall be adequately illuminated, ventilated and equipped.
- (c) There shall be one trained nurse, nor dresser-cum-compounder and one sweeper-cum guard boy throughout the working period.
- (d) The Occupational Health Centre in this case shall be suitably equipped to manage medical emergencies.

### 3. Ambulance van.

- (1) In every factory carrying out processes carried in Appendix "A" there shall be provided and maintained in good condition a suitably constructed and fully equipped ambulance van as per Appendix "C" manned by a full-time driver-cum-mechanic and helper, trained in first-aid for the purpose of transportation of serious cases of accidents or sickness unless arrangements for procuring such facility at short notice during emergencies have been made with the nearby hospital or other places, the ambulance van shall not be used for any purpose other than the purpose stipulated herein and always be available near the Occupational Health Centre.
- (2) The relaxation to procure ambulance van from nearby place provided for in sub-paragraph (1) above will not be applicable to factories employing more than 500 workers.

### 4. Medical Examination

- (1) Workers employed in processes covered in Appendix "A" shall be medically examined by a Factory Medical Officer in the following manner.
  - (a) Once before employment, to ascertain physical suitability of the person to do the particular job;
  - (b) Once in a period of six months, to ascertain the health status of the worker; and
  - (c) The details of pre-employment and periodical medical examination carried out as aforesaid shall be recorded in the prescribed form.
- (2) Any finding of the Factory Medical Officer revealing any abnormality or unsuitability of any person employed in the process shall immediately be reported to the Certifying Surgeon who shall in turn, examine the concerned workers and communicate his findings within 30 days. If the Certifying Surgeon is of the opinion that the person so examined is required to be suspended from the process for health protection he will direct the occupier accordingly who shall not employ the said worker the same process. Whoever the person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which, the case the person affected shall be suitably rehabilitated. Provided that the Certifying Surgeon on his own may examine any other worker whom he feels necessary to be examined for ascertaining the suitability of his employment in the process covered in Appendix "A" or for ascertaining the health status of any other worker and his opinion shall be final.
- (3) No person shall be newly appointed without the Certificate of fitness granted by the Factory Medical Officer. If the factory Medical Officer declared a person unfit for being appointed to work in the process covered in Appendix "A", such person shall have a right of appeal to the Certifying Surgeon, whose opinion shall be final in this regard.
- (4) The worker suspended from the process owing to the circumstances covered in sub-paragraph (2) shall be employed again in the same process only after obtaining the fitness certificate from the Certifying Surgeon and after making entries to that effect in the health register.

## PART VII

### Additional Welfare Amenities

#### 1. Washing facilities.

- (1) There shall be provided and maintained in every factory for the use of all the workers taps for washing, at the rate of one tap for every 15 persons including liquid soap in a container with

tilting arrangements and nail brushes or other suitable means for effective cleaning. Such facilities shall be conveniently accessible and shall be kept in a clean and hygienic condition.

(2) If washing facilities as required above are provided for women, such facilities shall be separate for them and adequate privacy at all times shall be ensured in such facilities.

## **2. Mess room facilities**

(1) The occupier of all the factories carrying out processes covered in Appendix “A” and employing 50 workers or more, shall provided for all the workers working in a shift mess facilities which are well ventilated and provided with tables and sitting facilities along with the provision of clod and hygienic drinking water facilities.

(2) Such facilities shall include suitable arrangements for cleaning and washing and shall be maintained in a clean and hygienic condition.

## **3. Clock room facilities**

(1) The occupier of every factory carrying out any process covered in Appendix “A” shall provide for all the workers employed in the process clock room facilities with lockers. Each worker shall be provided with two lockers, one for work clothing and another separately for personal clothing and the lockers should be such as to enable the keeping in the clothing in a hanging position.

(2) The clock room facilities so provided in pursuance of sub-paragraph (1) shall be located as far as possible near to the facilities provided for washing in pursuance of para 1(1). If it is not possible to locate the washing facilities, the cloak room facilities shall have adequate and suitable arrangements for cleaning & washing.

## **4. Special bathing facilities**

(1) The occupier of any factory carrying the process covered under Appendix “B” shall provide special bathing facilities for all the workers employed and such facilities shall be provided at the rate of 1 for 25 workers and part thereof, and shall be maintained in a clean and hygienic condition.

(2) The occupier shall insist all the workers employed in the processes covered in Appendix “B” to take bath after the completion of the days or shift work using the bathing facilities so provided and shall also effectively prevent such of those workers taking bath in any place other than the bathing facilities.

(3) Notwithstanding anything contained in sub- paragraph (1) above, the Chief Inspector may require in writing the occupier of any factory carrying out any other process for which in his opinion bathing facilities are essential form the health point of view, to provide special bathing facilities.

## **PART VIII**

### **Duties of workers.**

(1) Every worker employed in the processes covered in Appendix “A” and Appendix “B” shall not make any safety device appliance or any guarding or fencing arrangement inoperative or defective and shall report that defective condition of the aforesaid arrangements as soon as is aware of any such defect.

(2) Before commencing any work, all workers employed in processes, covered in Appendix “A” shall check their work place as well as the machinery equipment or appliance used in the processes and report any mal-functions or defect immediately to the supervisors or any responsible person of the management.

(3) All workers shall co-operative in all respect with the management while carrying out any work or any emergency duty assigned to them in pursuance of this schedule and shall always use all the personal protective equipments issued to them in a careful manner.

(4) All workers employed in the processes covered in Appendix “A” to Appendix “B” shall not smoke in the process area or storage area if special facilities are provided by the management only such facilities should be used.

- (5) All workers employed in the process covered in Appendix "A" shall not remain in unauthorized place or carry out unauthorized work or improvise any arrangements or adopt short out method or misuse any of the facilities provided in pursuance of the Schedule, in such a manner as to cause risk to themselves as well as or to others employed.
- (6) The workers shall not refuse undergoing medical examination as required under these rules.

### PART IX

#### Restriction on the employment of young persons under 18 years of age and women

- (1) The Chief Inspector of Factories may by an order in writing, restrict or prohibit the employment of women and young persons under the age of 18, in any of the processes covered in Appendix "A" of this schedule on consideration of health and safety of women and young persons.
- (2) Such persons who are restricted or prohibited from working in the process due to the order issued in pursuance of sub- paragraph (1) above shall be provided with alternative work which is not detrimental to their health or safety.

### PART X

#### Exemption

**Power of exemption.**- The State Government or subject to the control of the State Government, the Chief Inspector may exempt from the compliance with any of the requirements of this Schedule partly or fully, any factory carrying out processes covered in Appendix "A", if it is clearly and satisfactorily established by the occupier that the compliance with any of the requirements is not necessary to ensure the safety and health of persons employed suitably and effective alternate arrangements are available to any of the requirements covered in this schedule.

#### Appendix 'A'

Any works of that part of works in which-

- (a) the manufacture, manipulation or recovery of any of the following is carried on;
  - (i) Sodium, potassium, iron, aluminium, cobalt nickel, copper, arsenic, antimony, chromium, zinc, selenium, magnesium, cadmium, mercury, beryllium and their organic and inorganic salts, alloys, oxides and hydroxides.
  - (ii) Ammonia, ammonium hydroxide and salts of ammonium;
  - (iii) the organic or inorganic compounds of sulphurous, sulphuric, nitric, nitrous, hydrochloric, hydrofluoric, hydroiodic, hydrosulphuric, hydrobromic, boric;
  - (iv) Cyanogen compounds, cyanide compounds, cyanate compounds;
  - (v) Phosphorous and its compounds other than organophosphorous insecticides ;
  - (vi) Chlorine
- (b) Hydrogen sulphide is evolved by the decomposition of metallic sulphide, or hydrogen sulphide is used in the production of such Sulphides.
- (c) bleaching power is manufactured or chlorine gas is produced in chlor-alkali plants;
- (d) (i) gas tar or coal tar or bitumen or shale oil asphalt or any residue of such tar is distilled or used in any process of chemical manufacture;
- ii) tar based synthetic coloring matters or their intermediate are produced;
- (e) nitric acid is used in the manufacture of nitro compounds;
- (f) explosives are produced with the use of nitro compounds;

- (g) aliphatic or aromatic compounds or their metallic and non-metallic derivatives or substituted derivatives, such as chloroform ethylene glycol, formaldehyde, benzyl chloride, phenol, methyl ethyl ketone peroxide, cobalt carbonyl, tungsten, carbide etc. are manufactured or recovered.

### Appendix 'B'

#### Concerning Special bathing Accommodation in pursuance of paragraph 4 of Part IV

1. Nitro or amino processes
2. All chrome process
3. Processes of distilling as or coal tar or processes of chemical manufacturer in which tar is used.
4. Processes involving manufacture, manipulation, handling or recovery of cyanogens compounds, cyanide compound, cyanide compounds.
5. Processes involving manufacture of bleaching power or production of chlorine gas in chlor-alkali plants.
6. Manufacture, manipulation or recovery of nickel and its compounds.
7. App. Processes involving the manufacture, manipulation or recovery of aliphatic or aromatic compounds or their derivatives or substituted derivatives.

### APPENDIX 'C'

#### Ambulance

Ambulance should have the following equipments;

#### General

A wheeled stretcher with folding and adjusting devices;  
 Head of the stretcher must be capable of being tilted upward;  
 Fixed suction unit with equipments;  
 Fixed oxygen supply with equipments;  
 Pillow with case;  
 Sheets;  
 Blankets;  
 Towels;  
 Emesis bag;  
 Bed pan;  
 Urinal;  
 Glass.

#### Safety equipments

Flares with life 30 minutes;  
 Flood lights;  
 Flash lights;  
 Fire extinguisher dry power type;  
 Insulated gauntlets.

#### Emergency care equipments

#### Resuscitation

Portable suction unit;  
 Portable oxygen unit;  
 Bag-valve-mask, hand operated artificial ventilation unit;  
 Airways;  
 Mouth gage;  
 Tracheotomy adaptors;  
 Short spine board;  
 I.V. Fluids with administration Unit;  
 B.P. Manometer;

Gugg; Stethoscope.

#### **Immobilization**

Long & Short padded boards;  
Wire ladder splints;  
Triangular bandage;  
Long and short spine boards'

#### **Dressings**

Guaze pads 4" x 4"  
Universal dressing 10" x 36";  
Roll of aluminium foils;  
Soft roller bandages 6" x 5" yards;  
Adhesive tape in 3" roll;  
Safety pins;  
Bandage sheets;  
Burn sheet.

#### **Poisoning**

Syrup of Ipecac;  
Activated Charcoal; Prepacketed in doses  
Snake bite kit;  
Drinking Water;

#### **Emergency Medicines**

As per requirements (Under the advice of Medical Officer only)

### **Schedule XIII**

#### **Manipulation of Stone or Any Other Material Containing Free Silica**

1. **Application.** - This schedule shall apply to all factories or parts of factories in which manipulation or stone or any other material containing free silica is carried on.
2. **Definition.** – For the purpose of this schedule.-
  - (a) “manipulation” means crushing, breaking, chipping, dressing, grinding, sieving, mixing, grading, or handing of stone or any other material containing free silica or any other operation involving such stone or material;
  - (b) “Stone or any other material containing free silica” means a stone or any other solid material containing not less than 5 % by weight of free silica.
3. **Precaution in Manipulation.**- No manipulation shall be carried out in a factory or part of factory unless one or more of the following measures namely;
  - (a) damping the stone, or other material being processed,
  - (b) providing water spray,
  - (c) enclosing the process,
  - (d) isolating the process, and
  - (e) providing localized exhaust ventilation, are adopted so as to effectively control the dust in any place in the factory where any person is employed, at level equal to or below the maximum permissible level for silica dust as laid down in Table 2 appended to rule 129 A:  
Provided that such measures as above said are not necessary if the processes or operation itself in such that the level of dust created and prevailing does not exceeded the permissible level referred to.
4. **Maintenance of floors.**
  - (1) All floors or places where fine dust is likely to settle or and where on any person has to work or pass shall be impervious material and maintained in such condition that they can be thoroughly

cleaned by a moist method or any other method which would prevent dust being air borne in the process of cleaning.

- (2) The surface of every floor of every work room or place where any worker carried on or where any person has to pass during the course of his work shall be cleansed of dust once at least during each shift after being sprayed with water or any other suitable method prevent dust being air borne in the process of cleaning.

**5. Prohibition relating young persons.-** No young person shall be employed or permitted to work in any of the operations involving manipulating or at any place where such operations are carried out.

**6. Medical facilities and records of examination and tests.-**

- (1) The occupier of the every factory to which the schedule applies shall-
- (a) employ a qualified Medical Officer for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories; and
  - (b) provided to the said Medical Officer all the necessary facilities for the purpose referred to in clause (1).
- (2) The record of medical examination and appropriate test carried out by the said medical office shall be maintain in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

**7. Medical Examination by the certifying surgeon.**

- (1) Every worker employed in processes specified in a paragraph 1, shall be examine by a Certifying Surgeon within 15 days of his first employment. Such medical examination shall include pulmonary function tests and chest X-ray, No worker shall be allowed to work after 15 days of his employment in the factory unless certified fit for such employment by the Certifying Surgeon.
- (2) Every worker employed in the said process shall be reexamined by a Certifying Surgeon at least once in every 12 months. Such reexamination shall, wherever the Certifying Surgeon considers appropriate include all the tests specified in sub-paragraph (1) except chest X-ray which will be once in three years.
- (3) The Certifying Surgeon after examine a worker, shall issue a Certificate of Fitness in Form 27. The record or examination and reexamination carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2) including the nature and the results tests, shall all so be entered by the Certifying Surgeon in health register in Form 17.
- (4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector.
- (5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternative placement facility unless he is fully in capacitated in the opinion of the Certifying Surgeon in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) shall be reemployed or permitted to work in the said processes unless the Certifying Surgeon, after further examinations, again certifies him fit for employment in those processes.

**8. Exemption-** If in respect of any factory the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reason, all or any of the provisions of this schedule is not necessary for protection of the workers in the factory, the Chief Inspector may be a Certificate in writing, which he may in his discretion revoke at any time, exempt such factory from all or any such provisions subject to such conditions, if any as, he may specify therein.

## Schedule XIV

**Handling and processing of Asbestos, manufacturing of any article of Asbestos and any other process of manufacture or otherwise in which Asbestos is used in any form**

1. **Application.**- This schedule shall apply to all factories or part of factories in which any of the following process is carried on:-
  - (a) breaking, crushing, disintegrating, opening, grinding, mixing or sieving of asbestos and any other process involving handling and manipulation of asbestos incidental thereto;
  - (b) all processes in the manufacture of asbestos textiles including preparatory and finishing processes;
  - (c) making insulation slabs or sections, composed wholly or partly of asbestos and processes incidental thereto;
  - (d) making or repairing of insulating mattresses, composed wholly or partly of asbestos and processes incidental thereto;
  - (e) manufacture of asbestos cardboard and paper;
  - (f) manufacture of asbestos cement goods;
  - (g) application of asbestos by spray method;
  - (h) sawing, grinding, turning, abrading and polishing in dry state of articles composed wholly or partly of asbestos;
  - (i) cleaning of any room, vessels, chamber, fixture or appliances for the collection of asbestos dust; and
  - (j) any other processes in which asbestos dust is given off into the work environment.
2. **Definition** - For the purpose of this schedule:-
  - (a) “asbestos” means any fibrous silicate mineral and any admixture containing actinolite; amosite, anthophyllite, chrysotile, crocidolite, tremolite or any mixture thereof, whether crude, crushed or opened;
  - (b) “approved” means approved for the time being in writing by the Chief Inspector,
  - (c) “asbestos textiles” means yarn or cloth composed of asbestos mixed with any other material;
  - (d) “breathing apparatus” means a helmet or face piece with necessary connection by means of which a person using it breathe air free from dust, or any other approved apparatus;
  - (e) “efficient exhaust draught” means localized ventilation by mechanical means for the removal of dust so as to prevent dust from escaping into air of any place in which work is carried on. No draught shall be deemed to be efficient which fails to control dust produced at the point where such dust originates;
  - (f) “preparing” means crushing, disintegrating and any other processes in or incidental to the opening of asbestos;
  - (g) “protective clothing” means overalls and head covering, which (in either case) will when worn exclude asbestos dust.
3. **Tools and equipments** – Any tools or equipment used in processes to which this schedule applied shall be such that they do not create asbestos dust above the permissible limit or are equipped with efficient exhaust draught.
4. **Exhaust draught**
  - (1) An efficient exhaust draught shall be provided and maintained to control dust from the following processes and machines:-
    - (a) manufacture and conveying machinery, namely:-
      - (i) preparing, grinding or dry mixing machines;
      - (ii) carding, card waste and ring spinning machines and looms;
      - (iii) machines or other plant red with asbestos; and

- (iv) machines used for the sawing, grinding, turning, drilling, abasing or polishing in the dry state, or articles composed wholly or partly of asbestos;
  - (b) cleaning, and grinding of the cylinders or other parts of a carding machine;
  - (c) chambers, hoppers or other structures into which loose asbestos is delivered or passes;
  - (d) work benches for asbestos waste sorting or for other manipulation of asbestos by hand;
  - (e) work places at which the filling or emptying of sacks, skips or other portable containers, weighing or other processes incidental thereto which is effected by hand, is carried;
  - (f) sack cleaning machine;
  - (g) mixing and blending of asbestos by hand; and
  - (h) any other processes in which dust is given off into the work environment.
- (2) Exhaust ventilation equipment provided in accordance with sub-paragraph (1) shall while any work of maintenance or repair to the machinery, apparatus or other plant or equipment in connection with which it is provided is being carried or, be kept in use so as to produce an exhaust draught which prevents the entry of asbestos dust into the air of any workplace.
  - (3) Arrangements shall be made to prevent asbestos dust discharged from exhaust apparatus being drawn into the air of any work-room.
  - (4) The asbestos bearing dust removed from any work-room by the exhaust system shall be collected in suitable receptacles or filter bags which shall be isolated from all work areas.

#### **5. Testing and examination of ventilating systems**

- (1) All ventilating system used for the purpose of extracting or suppressing dust as required by this schedule shall be examined and inspected once in every week by a responsible person. It shall be thoroughly examined and tested by a competent person once in every period of 12 months. Any defects found by such examinations or test shall be rectified forthwith;
- (2) A register containing particulars of such examination and tests and the state of the plant and the repairs or alterations (if any) found to be necessary shall be kept and shall be available for inspection by an Inspector.

#### **6. Segregation in case of certain process** – Mixing or blending of asbestos by the hand or making or repairing of insulating mattresses composed wholly or partly of asbestos shall not be carried on in any room in which any other work is done.

#### **7. Storage and distribution of loose asbestos** – All loose asbestos shall while no in use, be kept in suitable closed receptacles which prevent the escape of asbestos dust there from such asbestos shall not be distributed with in a factory excepting closed receptacles or in a totally enclosed system of conveyance.

#### **8. Asbestos sacks**

- (1) All sacks used as receptacles for the purpose of transport of asbestos within the factory shall be constructed of impermeable materials and shall be kept in good repair.
- (2) A sack which has contained asbestos shall not be cleaned by hand beatings but by a machine, complying with paragraph 4.

#### **9. Maintenance of floors and work places**

- (1) In every room in which any of the requirements of this schedule apply : -
  - (a) the floors, work –benches, machinery and plant shall be kept in a clean state and free from asbestos debris and suitable arrangements shall be made for the storage of asbestos not immediately required for use; and
  - (b) the floors shall be kept free from any materials, plant or other articles not immediately required for the work carried on in the room, which would obstruct the proper cleaning of the floor.
- (2) The cleaning as mentioned in sub-rule (1) Shall so far as is practicable be carried out by means or vacuum cleaning equipment so designed and constructed and so used that asbestos dust neither escapes not is discharged in to the air of any work place.



- (3) When the cleaning is done by any method other than that mentioned in sub-paragraph(2), the persons doing cleaning work and any other person employed in that room shall be provided with respiratory protective equipment and protective clothing.
- (4) The vacuum cleaning equipment used in accordance with provisions of sub-paragraph (2), shall be properly maintained and after each cleaning operation, its surfaces kept in a clean state and free from asbestos waste and dust.
- (5) Asbestos waste shall not be permitted to remain on the floors or other surfaces at the work place at the end of working shift and shall be transferred without delay to suitable receptacles. Any spillage of asbestos waste occurring during the course of the work at any time shall be removed and transferred to the receptacles maintained for the purpose without delay.

#### **10. Breathing apparatus and protective clothing**

- (1) An approved breathing apparatus and protective clothing shall be provided and maintained in good conditions for use of every person employed:
  - (a) in chambers containing loose asbestos;
  - (b) in cleaning dust settling or filtering chambers of apparatus;
  - (c) In cleaning the cylinders, including the doffer cylinders or other parts of a carding machines by means of hand-stickles;
  - (d) filling beating or leveling in the manufacture or repair of insulating mattresses; and
- (e) In any other operation or circumstances in which it is impracticable to adopt technical means to control asbestos dust in the work environment within the permissible limit.
- (2) Suitable accommodation in conveniently accessible position shall be provided for the use of persons when putting on or taking off breathing apparatus and protective clothing provided in accordance with this rule and for the storage of such apparatus and clothing when not in use.
- (3) All breathing apparatus and protective clothing when not in use shall be stored in the accommodation provided in accordance with sub-rule (2) above.
- (4) All protective clothing in use shall be de-dusted under an efficient exhaust draught or by vacuum cleaning and shall be washed at suitable intervals. The cleaning schedule and procedure should be such as to ensure the efficiency in protecting the wearer.
- (5) All breathing apparatus shall be cleaned and disinfected at suitable intervals and thoroughly inspected once every month by a responsible person.
- (6) A record of the cleaning and maintenance and of the condition, of the breathing apparatus shall be maintained in a register provided for that purpose which shall be readily available for inspection by an Inspector.
- (7) No person shall be employed to perform any work specified in sub-paragraph(1) for which breathing apparatus is necessary to be provided under the sub-paragraph unless he has been fully instructed in the proper use of that equipment.
- (8) No breathing apparatus provided in pursuance of sub-paragraph(1) which has been worn by a person shall be worn by another person unless it has been thoroughly cleaned and disinfected since last being worn and the person has been fully instructed in the proper use of that equipment.

**11. Separate accommodation for personal clothing-** A separate accommodation shall be provided in a conveniently accessible position for all persons employed in operations to which this schedule applied for storing of personal clothing. This should be separated from the accommodation provided under sub-paragraph (2) of paragraph 10 to prevent contamination of personal clothing.

#### **12. Washing and bathing Facilities**

- (1) There shall be provided and maintained in clean state and in good repair for the use of all workers employed in the processes covered by the schedule, adequate washing and bathing places having a constant supply of water under cover at the rate of one such place for every 15 persons employed.
- (2) The washing places shall have stand pipes placed at intervals of not less than one metre;
- (3) Not less than one half of the total number of washing places shall be provided with bathrooms;

(4) Sufficient supply of clean towels made of suitable material shall be provided:  
Provided that such towels shall be supplied individually for each worker if so ordered by the Inspector.

(5) Sufficient supply of soap and nail brushers shall be provided.

### **13. Mess room**

(1) There shall be provided and maintained for the use of all workers employed in the factory covered by this schedule, remaining on the premises during the rest intervals, suitable mess room which shall be furnished with:-

- (a) sufficient tables and benches with back rest, and
- (b) adequate means for warming foods.

(2) The mess room shall be placed under the charge of a responsible person and shall be kept clean.

**14. Prohibition of Employment of Young Persons-** No young persons shall be employed in any of the process covered by this schedule,.

**15. Prohibition Relating to Smoking-** No person shall smoke in any area where processes covered by this schedule are carried on. A notice in the language understood by majority of the workers shall be posted in the plant prohibiting smoking at such areas.

### **16. Cautionary Notices**

(1) Cautionary notices shall be displayed at the approaches and along the perimeter of every asbestos processing area to warn all persons regarding,-

- (a) hazards to health from asbestos dust;
- (b) need to use appropriate protective equipment;
- (c) prohibition of entry to unauthorized person, or authorized persons but without protective equipment.

(2) Such notices shall be in the language understood by the majority of the workers.

**17. Air Monitoring:-** To ensure the effectiveness of the control measures, monitoring of asbestos fibre in air shall be carried out once at least in every shift and the record of the results so obtained shall be entered in a register specially maintained for the purpose.

### **18. Medical Facilities and Records of Medical Examinations and Tests**

(1) The occupier of every factory or part of the factory to which the schedule applies, shall-

- (a) employ a qualified medical practitioner for medical surveillance of the workers covered by this schedule whose employment shall be subject to the approval of the Chief Inspector of Factories.
- (b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examination and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspectors.

### **19. Medical Examination by Certifying Surgeons**

(1) Every worker employed in the processes specified in paragraph 1 shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include pulmonary function tests, tests for detecting asbestos fibres in sputum and chest X-ray. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

(2) Every worker employed in the process referred to sub-paragraph (1) shall be re-examined by a Certifying Surgeon at least once in every twelve calendar months. Such examinations shall, wherever the Certifying Surgeon considers appropriate, include all the tests specified in sub-paragraph (1) except chest X-ray which will be carried out once in 3 years.

(3) The Certifying Surgeon after examination a worker shall issue a Certificate of Fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the certificate and the certificate shall be kept in the custody of the Manager of the factory. The record of each

examination carried out under sub-paragraphs (1) and (2) including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in Form 17.

- (4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector.
- (5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said persons is unfit to work in the said processes. The person so suspended from the processes shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the certifying surgeon, in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certified him fit for employment in those processes.

**20. Exemption-** If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reason, all or any of the provisions of this schedule is not necessary for protection of the workers in the factory, the Chief Inspector may be a certificate in writing, which he may at his discretion revoke at any time, exempt such factory from all or any such provisions subject to such conditions, if any, as he may specify therein.

### Schedule XV

#### Handling or Manipulation of Corrosive Substances

- 1. Definition** – For the purpose of this schedule -
- (a) “corrosive operation “ means an operation of manufacturing, storing, handing, processing, packing or using any corrosive substance in a factory; and
- (b) “ corrosive substance” includes sulphuric acid, nitric acid, hydrochloric acid, hydrofluoric acid, carbolic acid, phosphoric liquid chlorine, liquid bromine, ammonia, sodium hydroxide and potassium hydroxide and a mixture thereof, and any other substance which the State Government by notification in the Official Gazette specify to be a corrosive substance.
- 2. Flooring.-** The floor of every workroom of a factory in which corrosive operation is carried on shall be made of impervious, corrosion and fire resistant material and shall be so constructed as to prevent collection of any corrosive substance. The surface of such flooring shall be smooth and cleaned as often as necessary and maintained in a sound condition.
- 3. Protective equipment**
- (1) The occupier shall provide for the use of all persons employed in any corrosive operation suitable protective wear for hands and feet, suitable aprons, face shields, chemical safety goggles, and respirators. The equipments shall be maintained in good order and shall be kept in clean and hygienic condition by suitably treating to get rid of the ill effects of any absorbed chemicals and by disinfecting. The occupier shall also provide suitable protective creams and other preparations wherever necessary.
- (2) The protective equipment and preparations provided shall be used by the persons employed in any corrosive operation.
- 4. Water facilities** – Where any corrosive operation is carried on, there shall be provide as close to the place of such operation as possible a source of clean water at a height of 210centimetres from a pipe of clean water at 125centimetres diameter and fitted with quick acting valve so that in the case of injury to the worker by any corrosive substance, the injured part can be thoroughly flooded with water. Whenever necessary, in order to ensure continuous water supply a storage tank having a

minimum length, breadth and height of 210centimetres 120centimetres and 60centimetres respectively, or such dimensions, as are approved by the Chief Inspector shall be provided as the sources of clean water.

- 5. Cautionary Notice** – A cautionary notice in the following Form and printed in the language which majority of the workers employed understand, shall be displayed prominently close to the place where a corrosive operation is carried out and where it can be easily and conveniently read by the workers. If any worker is illiterate, effective steps shall be taken to explain carefully to him the contents of the notice so displayed.

**CAUTIONARY NOTICE**

**Danger**

Corrosive substances cause severe burns, and vapours thereof may be extremely hazardous. In case of contact, immediately flood the part affected with plenty of water for at least 15 minutes.

Get medical attention quickly.

**6. Transport**

- (1) Corrosive substances shall not be filled, moved or carried except in containers or through pipes and when they are to be transported in containers, they shall be placed in crates of sound construction and of sufficient strength.
- (2) A container with a capacity of 11.5 litres or more of a corrosive substance shall be placed in a receptacle or crate and then carried by more than one person at height below the waist line unless a suitable rubber wheeled truck is used for the purpose.
- (3) Containers for corrosive substances shall be plainly labeled.

**7. Devices for handling corrosives**

- (1) Titling, lifting or pumping arrangements shall be used for the emptying jars, carboys and other containers of corrosives.
- (2) Corrosive substance shall not be handled by bare hands but by means of a suitable scoop or other device.

- 8. Opening of valves** – Valves fitted to containers holding a corrosive substance shall be opened with great care. If they do not work freely, they shall not be forced open. They shall be opened by a worker suitably trained for the purpose.

**9. Cleaning tanks, stills etc.,**

- (1) In cleaning out or removing residues from stills or other large chambers used for holding any corrosive substances, suitable implements made of wood or other material shall be used to prevent production of arseniuretted hydrogen (arsine).
- (2) Whenever it is necessary for the purpose of cleaning or other maintenance work for any worker to enter chamber, tank, vat, pit or other confined space where a corrosive substance had been stored, all possible precaution required under section 36 of the Act shall be taken to ensure the worker's safety.
- (3) Wherever possible, before repairs are undertaken to any part of equipment in which a corrosive substance was handled, such equipment or part thereof shall be freed of any adhering corrosive substance by adopting suitable methods.

**10. Storage**

- (1) Corrosive substances shall not be stored in the same room with other chemicals, such as turpentine, carbides, metallic powders and combustible materials, the accidental mixing with which may cause a reaction which is either violent or gives rise to toxic fumes and gases.

- (2) Pumping or filling overhead tanks, receptacles, vats or other containers for storing corrosive substances shall be so arranged that there is no possibility of any corrosive substance overflowing and causing injury to any person.
- (3) Every container having a capacity of twenty litres or more and every pipeline, valve, and fitting used for storing or carrying corrosive substances shall be thoroughly examined every year for finding out any defects, and defects so found out shall be removed forthwith. A register shall be maintained of every such examination made and shall produced before the Inspector whenever required.

- 11. Fire extinguishers and fire fighting equipments.-** An adequate number of suitable type fire extinguishers or other firefighting equipment, depending on the nature of chemical stored, shall be provided. Such extinguishers or other equipment shall be regularly tested and refilled. Clear instructions as to how the extinguishers or other equipment should be used, printed in the language which majority of the workers employed understand, shall be affixed near each extinguisher or other equipment.
- 12. Exemption-** If in respect of any factory on an application made by the Manager, the Chief Inspector is satisfied that owing to the exceptional circumstances, or the infrequency of the process or for any other reason to be recorded by him in writing, all or any of the provisions of this schedule are not necessary for the protection of the person employed therein, he may by a certificate in writing which he may at any time revoke, exempt to the factory from such of the provisions and subject to such condition as he may specify therein.

### Schedule XVI Processing of Cashew nut

- 1. Application-** This schedule shall apply to all factories in which roasting, scrubbing and shelling of cashew nuts or extracting oil from cashew nuts or cashew nut shells are carried on.
- 2. Prohibition of employment of women and young persons-** No women or young person shall be employed in any of the processes specified in paragraph I except in shelling of roasted cashew nuts.
- 3. Protective clothing and equipment-** The occupier shall provide and maintain for the use of all persons employed in roasting and scrubbing of cashew nuts or extracting oil from cashew nuts or cashew nuts shells-
  - (a) a suitable rubber or washable leather gloves;
  - (b) suitable type of impervious aprons with sleeves to cover body down to knees and shoulders; and
  - (c) suitable type of footwear to afford protection to feet and legs against cashew nut oil; and for the workers employed in cashew nut shelling, either-
    - (d) a protective ointment containing 10% of shellac, 55% of alcohol, 10% of sodium perborate, 5% of carbitol and 20% talc; or
    - (e) sufficient quantity of kaolin and coconut oil; and
    - (f) any other material or equipment- which the Chief Inspector of factories may deem to be necessary for the protection of the workers.
- 4. Use of protective clothing and equipment -** Every person employed in processes specified in paragraph I shall make use of protective clothing and equipment supplied and arrangements shall be made by the occupier to supervise its use, maintenance and cleanliness.
- 5. Disposal of shells, ashes or oil of cashew nut**
  - (1) Shells, ashes or oil of cashew nut shall not be stored in any room in which workers are employed and shall be removed at least twice a day to any pit or enclosed place in the case of shells and ashes and to closed containers kept in a separate room in the case of oil.
  - (2) No worker shall be allowed to handle shells or oil of cashew nuts without using the protective clothing or equipment provided under paragraph 3 above.

- 6. Floors of workrooms-** The floor of every workrooms in which processes specified in paragraph I are carried on , shall be of a hard material so to be smooth and impervious and of even surface and shall be cleaned daily, and spillage of any cashew nut oil in any workroom shall be washed with soap and cleaned immediately.
- 7. Seating accommodations-** Workers engaged in shelling of cashew nuts shall be provided with adequate seats of works benches which shall be cleaned daily.
- 8. Mess room**
- (1) There shall be provided and maintained for the use of all persons employed in process specified in paragraph I, a suitable restroom furnished with sufficient tables and chairs of benches.
  - (2) Separate lockers shall be provided where food, etc, shall be to red by workers before it is consumed in the restroom.
- 9. Food drinks, etc, prohibited in work room-** No food, drink pan supari, or tobacco, shall be brought consumed by any worker in any room in which processes specified in paragraph I are carried out and no person shall remain any such room during intervals for meals or rest.
- 10. Washing facilities-** Where roasting, scrubbing and shelling of cashew nuts or extracting oil from cashew nuts or cashew nuts shells in carried on there shall be provided and maintained in a clean safe and good repair washing facilities with a sufficient supply of soap, coconut oil, nail brushes and towels at the scale of an one tap or stand pipe for every 10 workers, and the taps or stand pipes shall be spaced not less than 1.2 metres apart.
- 11. Time allowed for washing-** Before each meal and before the end of the day's work, at least ten minutes, in addition to the regular meal times, shall be allowed for washing, to each person employed in processes specified in paragraph I.
- 12. Smoke or gas produced by roasting cashew nuts-** Where smoke or gas produced in the operation of roasting, provision shall be made for removing the smoke or gas through a chimney of sufficient height and capacity or by such other arrangements as may be necessary to prevent the gas or smoke escaping into the air or any place in which workers are employed.
- 13. Storage of protective equipment –** A suitable room or a portion of the factory suitably partitioned off, shall be provided exclusively for the storage of all the protective equipment supplied to the workers and no such equipment shall be stored in any place other than the room or places so provided.
- 14. Medical facilities and records of examinations and tests**
- (1) The occupier of every factory to which the schedule applies, shall –
    - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories; and
    - (b) provided to the medical practitioner all the necessary facilities for the purpose referred to in clause (a)
  - (2) The said medical practitioner shall inspect daily the hands and feet of all the persons employed in the process specified in paragraph I.
  - (3) The record of such examinations carried out by the medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.
  - (4) The first aid box maintained shall also contain Burow's solution (1:20) and aqueous solution of tannic acid (10%) for treatment of cases of dermatitis.
- 15. Medical examinations by certifying Surgeon**
- (1) Every worker employed in the processes specified in paragraph I shall be examined by a certifying Surgeon within 15 days of his first employment. Such examinations shall include skin test for dermatitis and no worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.

- (2) Every worker employed in the said processes shall be re-examined by a certifying Surgeon at least once in every three calendar months. Such examinations shall, wherever the Certifying Surgeon considers appropriate include asking test for dermatitis.
  - (3) The Certifying Surgeon after examining a worker, shall issue a certificate of fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2), including the nature and the results of these tests, shall also be entered by the Certifying Surgeon in a health register in Form 17.
  - (4) The Certificate of Fitness and health register shall be kept readily available for inspection by the Inspector.
  - (5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said process on the ground that continuance therein would involve special danger to the health of the workers he shall make a record of the findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit to work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the certifying Surgeon, in which case the person affected shall be suitably rehabilitated.
  - (6) No person who has been found unfit to work as laid in sub paragraph (5) shall be re-employed or permitted to work in the said processes unless the certifying surgeon, after further examination, again certifies him fit for employment in those processes.
- 16. Exemption** – The Chief Inspector of Factories may grant exemptions from the operation of any of these where he is satisfied that their observance is not necessary for safeguarding the health of the workers.

### Schedule XVII

#### Compression of oxygen and hydrogen produced by Electrolysis of water.

- 1. Location of Electrolyser plant.** – The room in which electrolyser plant is installed shall be separate from the plant for storing and compressing the oxygen and hydrogen and also the electric generator room.
- 2. Testing of purity**
  - (1) The purity of oxygen and hydrogen shall be tested by a competent person at least once in every shift at the first posts:
    - (a) in the electrolysis room;
    - (b) at the gasholder inlet; and
    - (c) at the suction end of the compressor.
  - (2) The purity figures shall be entered in a register and signed by the persons carrying out such test: Provided, however, that if the electrolyser plant is fitted with automatic recorder of purity of oxygen and hydrogen with alarm lights, it shall be sufficient if the purity of gases is tested at the suction end of the compressor only.
- 3. Restriction as to the compression** – The oxygen and hydrogen gases shall not be compressed if their purity as determined under paragraph 2 above falls below 98% at any time.
- 4. Limit switch for gasholder** – The bell of any gasholder shall not be permitted to go within 30 centimeters of its lowest position when empty and a limit switch shall be fitted to the gasholder in which a manner as to switch off the compressor motor when the limit is reached.
- 5. Provision of negative pressure switch** – In addition to the limit switch in the gasholder-a sensitive negative pressure switch shall be provided in or adjacent to the suction main for hydrogen close to the gasholder and between gasholder and the hydrogen compressor to switch off the compressor motor in the event of the gasholder being emptied to the extent as to cause vacuum.

6. **Purity of caustic soda** – The water and caustic soda used for making limit shall be chemically pure within pharmaceutical limits.
7. **Precautions against reversal of polarity** – Electrical connections at the electrolyser cells and at the electric generator terminals shall be so constructed as to preclude the possibility of wrong connections leading to the reversal of polarity and in addition, to automatic device shall be provided to cut off power in the event of reversal of polarity owing to wrong connections either at the switch board at the electric generator terminals.
8. **Colouring of gas pipes** – Oxygen and hydrogen gas pipes shall be printed with distinguishing colours and in the event of leakage at the joints of the hydrogen gas pipe, the pipe after reconnection shall be purged of all air before drawing in hydrogen gas.
9. **Use of flame proof fitting** – All electric wiring and apparatus in the electrolyser room shall be of flameproof construction or enclosed in flameproof fitting and no naked light or flame shall be allowed to be taken either in the electrolyser room or where compressor and filling of the gases is carried on and such warning notices shall be exhibited in prominent places.
10. **Prohibition of hot work** – No part of the electrolyser plant and the gasholders and compressor shall be subjected to welding, brazing, soldering or cutting until steps have been taken to remove any explosive substance from that part and render the part safe for such operations and after the completion of such operations no explosive substance shall be allowed, to enter that part until the metal has cooled sufficiently to prevent risk of explosion.
11. **Repair, etc. to be done under supervision** – No work or operation, repair or maintenance shall be undertaken except under the direct supervision of a person who, by his training, experience and knowledge of the necessary precautions against risk of explosion is competent to supervise such work. No Electric generator after erection or repair shall be switched on to the electrolysers unless the same is certified by the competent persons under whose direct supervision erection or repairs are carried on to be in a safe condition and the terminals have been checked by the polarity as required by paragraph 7.
12. **Checking of plant** – Every part of the electrolyser plant and the gasholders and compressor shall have a regular schedule of overhaul and checking and every defect noticed shall be rectified forthwith.

### Schedule XVIII

#### Process of Extracting Oils and Fats from Vegetables and Animals Sources in Solvent Extraction Plants

1. **Definitions** – For the purpose of the schedule –
  - (a) “Solvent extraction plant” means a plant in which the process of extracting oils and fats from vegetable and animal sources by use of solvents is carried on;
  - (b) “Solvent” means a flammable liquid such as pentane hexane and heptane used for the recovery of vegetable oils;
  - (c) “Flameproof enclosure” as applied to electrical machinery or apparatus means an enclosure that will withstand when covers or other access doors are properly secured and internal explosion of the flammable gas or vapour which may enter or which may originate inside the enclosure without suffering damage and without communicating internal inflammation (or explosion) to the external flammable gas or vapour.
  - (d) “Competent person” for the purpose of this schedule shall be at least a Member of the Institution of engineers (India) or an associate member of the said institution with 10 years experience in a responsible position as may be approved by the Chief Inspector.  
 Provided that graduate in mechanical engineering or chemical technology with specialized knowledge of oils and fats and with a minimum experience of 5 years in a solvent extraction plant shall also be considered to be a competence person.  
 Provided further that the State Government may accept any other qualification, if in its opinion they are equivalent to the qualifications aforesaid



**2. Location and layout**

- (1) No solvent extraction plant shall be permitted to be constructed or extended to within a distance of 30 metres from the nearest residential locality.
- (2) A 1.5 metre high continuous wire fencing shall be provided around the solvent extraction plant upto a minimum distance of 15 meters from the plant.
- (3) No person shall be allowed to carry any matches or an open flame of fire inside the area bound by the fencing.
- (4) Boiler houses and other buildings where open flame processes are carried on shall be located at least 30 meters away from the solvent extraction plant.
- (5) If godowns and preparatory process are at a distance from of less than 30 meters from the solvent extraction plant, these shall be at least 15 meters distant from the plant, and a continuous barrier wall noncombustible material 1.5 meters high shall be erected at a distance of not less than 15 meters from the solvent extraction plant so that it extends to at least 30 meters of vapour travel around its end from the plant to the possible sources of ignition.

**3. Electrical Installations**

- (1) All electrical motors and wiring and other electrical equipments installed or housed in solvent extraction plant shall be of flame-proof construction.
- (2) All metal parts of the plant and building including various tanks and containers where solvents are stored or are present and all parts of electrical equipment not required be energized shall be properly bounded together and connected to earth so as to avoid accidental rise in the electrical potential of such parts above the earth potential.

**4. Restriction on Smoking**-Smoking shall strictly prohibited within 15 meters distance from solvent extraction plant. For this purpose, "No smoking" signs shall be permanently be displayed in the area.**5. Precautions against friction**

- (1) All tools and equipment including ladders, chains and other lifting tackle required to be used in solvent extraction plants shall be of non-sparking type.
- (2) No machinery or equipment in any solvent extraction plant shall be belt driven, unless the belt used is of such a type that it does not permit accumulation of static electricity to a dangerous level.
- (3) No person shall be allowed to enter and work in the solvent extraction plant, If wearing clothes made of nylon or such other fibre that can generate static electrical charge, or wearing footwear which is likely to cause sparks by friction.

**6. Fire fighting apparatus**

- (1) Adequate number of portable fire extinguishers suitable for use against flammable liquid fires shall be provided in the solvent extraction plant.
- (2) An automatic water spray sprinkler system on a wet pipe open head deluge system with sufficient supply of storage water shall be provided over solvent extraction plant and throughout the building housing such plant.

**7. Precaution against power failure** – provision shall be made for the automatic cutting off of steam in the event of power failure and also for emergency overhead water supply for feeding water by gravity to condensers which shall come into play automatically with the power failure.**8. Magnetic separators** – Oil-cake shall be fed to the extractor by a conveyor through a hopper and a magnetic separator shall be provided to remove any pieces of iron during its transfer.**9. Venting**

- (1) Tanks containing solvents shall be protected with emergency venting to relieve excessive internal pressure in the event of fire.
- (2) All emergency relief vents shall terminate at least 6 meters above the ground and be so located that vapours will not re-enter the building in which solvent extraction plant is located.

- 10. Waste water** – Process waste water shall be passed through a flash evaporator to remove any solvent before it is discharged into a sump which should be located within the fenced area, but not closer than 8 meters to the fence.
- 11. Ventilation** – The solvent extraction plant shall be well-ventilated and if the plant is housed in a building, the building shall be provided with mechanical ventilation with provision for at least six air changes per hour.
- 12. House keeping**
- (1) Solvent shall not be stored in an area covered by solvent extraction plant except in small quantities which shall be stored in approved safety cans.
  - (2) Waste material such as oily rags other waste and absorbents used to wipe off solvents and paints and oil shall be deposited in approved containers and removed from the premises at least once a day.
  - (3) Space within the solvent extraction plant and within 15 meters from the plant shall be kept free from any combustible materials and any spills of oil or solvent shall be cleaned up immediately.
- 13. Examination and Repairs**
- (1) The solvent extraction plant shall be examined by the competent person to determine any weakness or corrosion and wear once in every 12 months. Report of such examination shall be supplied to the Inspector with his observation as to whether or not the plant is in safe condition to work.
  - (2) No repairs shall be carried out to the machinery or plant except under the direct supervision of the competent person.
  - (3) Facility shall be provided for purging the plant with inert gas or steam before opening for cleaning or repair and before introducing solvent after repairs.
- 14. Operating personnel** – The operation of the plant and machinery in the solvent extraction plant shall be in the charge of such duly qualified and trained person as are certified by the competent person to be fit for the purpose and no other person shall be allowed to operate the plant and machinery.
- 15. Employment of women and young person** – No woman or young person shall be employed in the solvent extraction plant.
- 16. Vapour detection** – A suitable type of flame-proof and portable combustible gas indicator shall be provided and maintained in good working order and a schedule of routing sampling of atmosphere at various locations as approved by the Chief Inspector shall be drawn out and entered in a register maintained for the purpose.
- 17. Exception** – If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other person, all or any of the provision of this schedule is not necessary for the protection of the workers in the factory, the Chief Inspector may by a Certificate in writing (which he may in his discretion revoke at any time), exempt such factory from all or any of such provisions subject to such conditions, if any, as he may specify therein.

### Schedule XIX

#### Manufacture or manipulation of manganese and its compounds.

- 1. Application** – This schedule shall apply to every factory in which or any part of which any manganese process is carried on.
- 2. Definition** – For the purposes of this schedule -
  - (a) “manganese process” means processing, manufacture or manipulation of manganese or any compound of manganese or any ore or any mixture containing manganese.
  - (b) “manipulation” means mixing, blinding, filling, emptying grinding, sieving, drying, packing, sweeping, or otherwise handling of manganese, or a compound of manganese, or any one or any mixture containing manganese; and

- (c) “efficient exhaust ventilation” means localized ventilation effected by mechanical means for the removal of dust or fume or mist at its source of origin so as to prevent it from escaping into the atmosphere of any place where any work is carried on. No draught shall be deemed to be efficient which fails to remove the dust or fume or mist at the point where it is generated and fails to prevent it from escaping into and spreading into the atmosphere of a work place.
3. **Isolation of a process** – Every manganese process which may give rise to dust, vapour or mist containing manganese, shall be carried on in a totally enclosed system or otherwise effectively isolated from other processes so that other plants and processes and other parts of the factory and persons employed on other processes may not be affected by the same.
  4. **Ventilation of process** – No process, in which any dust, vapour or mist containing manganese is generated, shall be carried out except under an efficient exhaust ventilation which shall be applied as near to the point of generation as practicable.
  5. **Personal protective equipment**
    - (1) The occupier of the factory shall provide and maintain in good and clean condition suitable overalls and head covering and for all persons employed in any manganese process and such overalls and head covering shall be worn by the persons while working on a manganese process.
    - (2) The occupier of the factory shall provide suitable respiratory protective equipment for use by workers in emergency to prevent inhalation of dusts, fumes or mists. Sufficient number of complete sets of such equipment shall always be kept near the work place and the same shall be properly maintained and kept always in condition to be used readily.
    - (3) The occupier shall provide and maintain for the use of all persons employed suitable accommodation for the storage and make adequate arrangements for cleaning and maintenance of personal protective equipment.
  6. **Prohibition relating to women and young persons** – No women or young persons shall be employed or permitted to work in any manganese process.
  7. **Food, drinks etc. prohibited in the work rooms** – No food, drink, pan and supari or tobacco shall be allowed to be brought into or consumed by any worker in any workroom in which any manganese process is carried on.
  8. **Mess room** – There shall be provided and maintained for the use of the persons employed in a manganese process a suitable mess room which shall be furnished with sufficient tables and benches and adequate means for warming of food. The mess room shall be placed under the charge of a responsible person and shall be kept clean.
  9. **Washing facilities** – There shall be provided and maintained in a clean state and in good condition for the use of persons employed on manganese process –
    - (a) a wash place under cover with either –
      - (i) a trough with smooth impervious surface fitted with a waste pipe without plug and of sufficient length to allow at least 60 centimetres for every ten such persons employed at any one time and having a constant supply of water from taps or jets above the trough at intervals of not more than 60 centimeters; or
      - (ii) at least one wash basin for every five such persons employed at any one time, fitted with a waste pipe and plug and having a constant supply water; and
    - (b) sufficient supply of soap or other suitable cleaning material and nail brushes and clean towels.
  10. **Clock room** – If the Chief Inspector so requires there shall be provided and maintained for the use of persons employed in manganese process a clock room for clothing put off during working hours with adequate arrangements for drying the clothing.
  11. **Cautionary placard and instruction** – Cautionary notices in the form specified in appendix and printed in the language of the majority of the workers employed, shall be affixed in prominent places in the factory where they can be easily and conveniently read by the workers and arrangements shall be made of the occupier to instruct periodically all workers employed in a manganese process

regarding the health hazards connected with their duties and the best preventive measures and method to protect themselves. The notices shall always be maintained in a legible condition.

## **12. Medical facilities and record of examination and tests**

- (1) The occupier of every factory to which the schedule applies, shall -
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories; and
  - (b) provided to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a)
- (2) The recorded of medical examination and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

## **13. Medical examination by Certifying Surgeon**

- (1) Every worker employed in any manganese process shall be medically examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for detection of serum calcium, serum phosphate and manganese in blood and urine and also include steadiness tests and other neuro-muscular co-ordination tests. No worker shall be allowed to work after 15 days of his first employment the factory unless certified fit for such employment by the Certifying Surgeon.
- (2) Every worker employed in a manganese process shall be reexamined by a Certifying Surgeon at least once in every three calendar months and such examination shall, wherever the certifying Surgeon considers appropriate, include all the tests in sub paragraph (1)
- (3) The certifying Surgeon after examining a worker, shall issue a certificate of fitness in Form 27. The record of examination and reexamination carried out shall be entered in the certificate and the Certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub paragraph (1) and (2) including the nature and the results of these tests shall also be entered by the Certifying Surgeon in a health register in Form 17.
- (4) The Certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.
- (5) If at any time the Certifying Surgeon is of the opinion that the worker is no longer fit for employment in the said process on the ground that continuance therein would involve special danger to the health of the worker, he shall made a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit to work in the said process. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said process unless the Certifying Surgeon after further examination, again certified him fit for employment in those processes.

**14. Exemption** – If in respect of any factory the Chief Inspector is satisfied that owing to any exceptional circumstances or infrequency of the process, or for any other reason, application of all or any of the provisions of this schedule is not necessary for the protection of the persons employed in such factory he may by an order in writing which he may at his discretion revoke exempt such factory from all or any of the provisions on such conditions and for such period as he may specify in the said order.

**APPENDIX  
CAUTIONARY NOTICE**

**Manganese and Manganese Compounds**

1. Dust, fumes and mists of manganese and its compound re-toxic when inhaled or when ingested.
2. Do not consume food or drink near the work place.
3. Take a good wash before taking meals.
4. Keep the working area clean
5. Use the protective clothing and equipment provided
6. When required to work in situations where dusts, fumes or mists or likely to be inhaled or respiratory protective equipment provided for the purpose.
7. If you got severe headaches, prolonged sleeplessness or abnormal sensation on the body, report to the manager who would make arrangements for your examination and treatment.

**Schedule XX**

**Manufacture or Manipulation of Dangerous Pesticides**

1. **Application** – This schedule shall apply in respect of all factories or any part thereof in which the process of manufacture or manipulation of dangerous pesticides herein after referred to as the said manufacturing process is carried on.
2. **Definition** – For the purpose of the schedule –
  - (a) “dangerous pesticides” means any product proposed or used for controlling, destroying or repelling any pest or for preventing growth or mitigating effects of such growth including any of its formulations which is considered toxic under and is covered by the Insecticides Act, 1968 and the rules made there under and any other product as may be notified from time to time by the State Government.
  - (b) “manipulation” includes mixing, blending, formulating, filling, emptying, packing or otherwise handling;
  - (c) “efficient exhaust draught” means localized mechanical ventilation for removal of smoke, gas, vapour, dust, fume or mist so as to prevent them from escaping into the air of any workroom in which work is carried on. No exhaust draught shall be considered efficient if it fails to remove smoke generated at the point where such gas, fume, dust, vapour or mist originates from the process.
3. **Instruction to worker** – Every worker on his first employment shall be fully instructed on the properties including dangerous properties of the chemical handled in the said manufacturing process and the hazards involved. The employees shall also be instructed in the measures to be taken to deal with any emergency. Such instructions shall be repeated periodically.
4. **Cautionary notice and placards** – Cautionary notice and placards in the form specified in appendix to this schedule and printed in the language of the majority of the workers shall be displayed in all work places in which said manufacturing process is carried on so that they can be easily and conveniently read by the workers. Arrangements shall be made by the occupier and the manager of the factory to periodically instruct the workers regarding the health hazards arising in the said manufacturing process and methods of protection. Such notices shall include brief instructions regarding the periodical clinical test required to be undertaken for protecting health of the workers.
5. **Prohibition relating to employment of women or young persons** – No woman or any person shall be employed or permitted to work in any room in which the said manufacturing process is carried on or in any room in which dangerous pesticide is stored.
6. **Food, drinks and smoking prohibited**- No food, drink, tobacco, pan or supari shall be brought into or consumed by any worker in any work room in which the said manufacturing process is carried out.

**7. Protective clothing and protective equipment**

- (1) Protective clothing consisting of long pants and shirts or overalls with long sleeves and head coverings shall be provided for all workers employed in the said manufacturing process.
- (2) (a) protective equipment consisting of rubber gloves, gum boots, rubber aprons, chemical safety goggles and respirators shall be provided for all workers employed in the said manufacturing process.  
(b) gloves, boots, aprons shall be made from synthetic rubber where a pesticide contains oil.
- (3) Protective clothing and equipment shall be worn by the workers supplied with such clothing and equipment.
- (4) Protective clothing and equipment shall be washed daily from inside and outside if the workers handle pesticides containing nicotine or phosphorous and shall be washed frequently if handling other pesticides.
- (5) Protective clothing and equipment shall be maintained in good repair;

**8. Floors and work benches**

- (1) Floors in every workroom where dangerous pesticides are manipulated shall be of cement or other impervious material giving a smooth a surface.
- (2) Floors shall be maintained in good repair, provided with adequate slope leading to drain and thorough washed once a day with hose pipe.
- (3) Work benches where dangerous pesticides and manipulated shall be made of smooth, non-absorbing material preferably stainless steel and shall be cleaned at least once daily.

**9. Spillage and waste**

- (1) If a dangerous pesticide during its manipulation splashes or spills on the work bench/floor or on the protective, clothing worn by a worker, immediate action shall be taken for thorough decontamination of such area or articles.
- (2) Cloth, rags, paper or other material soaked or soiled with a dangerous pesticide shall be deposited in a suitable receptacle with tight fitting cover. Contaminated waste shall be destroyed by burning least once a week.
- (3) Suitable deactivating agents, where available, shall be kept in a readily accessible place for use while attending to a spillage.
- (4) Easy means of access shall be provided to all parts of the plant for cleaning maintenance and repairs.

**10. Empty containers used for dangerous pesticides** – Containers used for dangerous pesticides shall be thoroughly cleaned of their contents and treated with an inactivating agent before being discarded or destroyed.

**11. Manual handling**

- (1) A dangerous pesticide shall not be required or allowed to be manipulated by hand except by means of a long handled scoop.
- (2) Director contact of any part of the body with dangerous pesticide during its manipulation shall be avoided.

**12. Ventilation**

- (1) In every workroom or area where a dangerous pesticide is manipulated, adequate ventilation shall be provided at all times by the circulation of fresh air.
- (2) Unless the process is completely enclosed, the following operations during manipulation of dangerous pesticides shall not be undertaken without an efficient exhaust draught.
  - (a) emptying a container holding a dangerous pesticides
  - (b) blending a dangerous pesticide;
  - (c) preparing a liquid or powder formulation containing a dangerous pesticide; and
  - (d) changing or filling a dangerous pesticide into a container, tank hoper or machine or small sized containers.

- (3) In the event of failure of the exhaust draught provided on the above operation, the said operations shall be stopped forthwith.

**13. Time allowed for washing**

- (1) Before each meal and before the end of the day's work at least ten minutes in addition to the regular rest interval shall be allowed for washing to each worker engaged in the manipulation of dangerous pesticide.
- (2) Every worker engaged in the manipulation of dangerous pesticides shall have a through wash before consuming any food and also at the end of the day's work.

**14. Washing and bathing facilities**

- (1) There shall be provided and maintained in a clean state and in good repair for the use of all workers employed in the factory where the said manufacturing process is carried on. Adequate washing and bathing places having a constant supply of water under cover at the rate of one such place for every 5 persons employed.
- (2) The washing places shall have stand pipes placed at intervals of not less than one metre.
- (3) Not less than one half of the total number of washing places shall be provided with bathrooms.
- (4) Sufficient supply of clean towels made of suitable material shall be provided:  
Provided that such towels shall be supplied individually for each worker if so ordered by the Inspector.
- (5) Sufficient supply of soap and nail brushes shall be provided.

**15. Clock room** – There shall be provided and maintain for the use of all workers employed in the factory where the said manufacturing process is carried on –

- (a) a cloakroom for the clothing put off during working hours with adequate arrangements for drying clothing, if wet; and
- (b) separate and suitable arrangements for the storage of protective clothing provided under paragraph 7.

**16. Mess room**

- (1) There shall be provided, and maintained, for the use of all workers employed in the factory in which the said manufacturing process is carried on and reaming on the premises during the rest intervals, a suitable mess room which shall be furnished with –
  - (a) sufficient tables and benches with back rest, and
  - (b) adequate means for warming food
- (2) The mess room shall be placed under the charge of a responsible person and shall be kept clean.

**17. Manipulation not be undertaken** – Manufacture or manipulation of a pesticides shall not be undertaken in any factory unless a certificate regarding its dangerous nature or otherwise is obtained from the Chief Inspector.**18. Medical facilities and records of examinations and tests**

- (1) The occupier of every factory to which the schedule applies, shall –
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the chief Inspector of Factories; and
  - (b) provide to the said medical practitioner at the necessary facilities for the purpose referred to in clause (a)
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories which shall be kept readily available for inspection by the inspector.

**19. Medical examination by certifying Surgeon**

- (1) Every worker employed in the process mentioned in paragraph 1 shall be examined by the certifying Surgeon with 15 days of his first employment. Such examination in respect of halogenated pesticides shall include tests for determination of the chemical in blood and in fat tissues, EEG abnormalities and memory tests. In respect of organophosphorous compound, such

examinations shall include test for depression of cholinesterase in plasma and red blood cells. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the certifying surgeon.

- (2) Every worker employed in the said process shall be re-examined by a certifying surgeon at least once in every six calendar months. Such examination shall, wherever, the Certifying Surgeon considers appropriate, include the tests specified in sub-paragraph 910. Further every worker employed in the said processes shall also be examined once in every three months by the factory medical officer.
- (3) The Certifying Surgeon after examining a worker shall issue a Certificate of Fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2) including the nature and the results of these tests shall also be entered by the Certifying Surgeon in a health register in Form 17.
- (4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector.
- (5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit to work in the said process. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said processes unless the Certifying Surgeon, after further examination, again certifies him fit for employment in those processes.

**20. Exemption** – If in respect of any factory the Chief Inspector is satisfied that, owing to the exceptional circumstances or the infrequency of the said manufacturing process or for any other reason which he shall record in writing all or any of the provisions of this schedule are not necessary for the protection of the workers employed in the factory, he may by a certificate in writing exempt such factory, from all or any of the provisions on such condition as he may specify therein. Such certificate may at any time be revoked by the Chief Inspector after recording his reasons therefore.

## APPENDIX

### CAUTIONARY NOTICE

#### INSECTICIDES AND PESTICIDES

1. Chemical handled in this plant are poisonous substances
2. Smoking, eating food or drinking, chewing tobacco in this area is prohibited. No food stuff or drink shall be brought in this area
3. Some of these chemicals may be absorbed through skin and many cause poisoning
4. A good wash shall be taken before meals.
5. A good bath shall be taken at the end of the shift.
6. Protective clothing and equipment supplied shall be used while working in this area.
7. Containers of pesticides shall be used for keeping food stuffs.
8. Spillage of the chemicals on any part of the body or on the floor or work bench shall be immediately washed away with water.
9. Clothing contaminated due to splashing shall be removed immediately.
10. Scrupulous cleanliness shall be maintained in this area.
11. Do not handle pesticides with bare hands, use scoops provided with handle.



12. In case of sickness like nausea, vomiting, giddiness, the manager should be informed who will make necessary arrangements for treatment.
13. All workers shall report for the prescribed medical tests regularly to protect their own health.

### Schedule XXI

#### Manufacture, handling and usage of benzene and Substances containing benzene

1. **Application** – This schedule shall apply in respect of factories or parts thereof in which benzene or substances containing benzene are manufactured handled or used.
2. **Definition** – For the purpose of this schedule –
  - (a) ‘Substances containing benzene’ means substances wherein benzene content exceeds 1 per cent by volume;
  - (b) ‘Substitute’ means a chemical which is harmless or less harmful than, benzene and can be used in place of benzene;
  - (c) ‘Enclosed system’ means a system which will not allow escape of benzene vapours to the working atmosphere;
  - (d) ‘Efficient exhaust draught’ means localized ventilation effected by mechanical means for the removal of gases, vapours and dusts or fumes so as to prevent them from escaping into the air of any workroom. No draught shall be deemed to be efficient if it fails to remove smoke generated at the point where such gases, vapours, fumes or dusts originate.
3. **Prohibition of substitution**
  - (1) Use of benzene and substance containing benzene is prohibited in the following process:
    - (a) manufacture of varnishes, paints and thinners; and
    - (b) cleaning and degreasing operations.
  - (2) Benzene or substances containing benzene shall be used as a solvent or diluent unless the process in which it is used is carried on in an enclosed system or unless the process is carried on in a manner which is considered equally safe as if it were carried out in an enclosed system.
  - (3) Where suitable substitutes are available, they shall be used instead of benzene or substances containing benzene. This provision, however shall not apply to the following process-
    - (a) production of benzene;
    - (b) where benzene is used for chemical synthesis.
    - (c) motor spirits (used as fuel)
  - (4) The Chief Inspector may, subject to confirmation of by the State Government permit exemptions from the percentage laid down in sub-paragraph 2(a) and also from the provisions of sub-paragraph (2) of this paragraph temporarily under conditions and within limits of time to be determined after consultation with the employers and workers concerned.
4. **Protection against inhalation**
  - (i) The process involving the use of benzene or substances containing benzene shall as far as practicable be carried out in an enclosed system.
  - (ii) Where, however, it is not practicable to carry out the process in an enclosed system the work room in which benzene or substances containing benzene are used shall be equipped with an efficient exhaust draught or other means for the removal of benzene vapours to prevent their escape into the air of the work room so that the concentration of benzene in the air does not exceed 10 parts per million by volume or 30 milligrams per cubic metre.
  - (iii) Air analysis for the measurement of concentration of benzene vapour in air shall be carried out every 8 hours or at such intervals as may be directed by the Chief Inspector at places where process involving use of benzene is carried on and the result of such analysis shall be recorded in a register specially maintained for this purpose. If the concentration of benzene vapours in air as measured by air analysis exceeds 10 parts per million by volume or 30 milligrams per

cubic metre, the manager shall forthwith report the concentration to the Chief Inspector stating the reasons for such increase.

- (iv) Workers who for special reasons are likely to be exposed to concentration of benzene in the air of the work room exceed the maximum referred to in sub-paragraph (2) shall be provided with suitable respirators or face masks. The duration of such exposure shall be limited as far as possible.

**5. Measures against skin contact**

- (1) Workers who are likely to come into contact with liquid benzene or liquid substance containing benzene shall be provided with suitable gloves, aprons, boots and where necessary vapour tight chemical goggles, made of material not affected by benzene or its vapours.
- (2) The protective wear referred to in sub paragraph (1) shall be maintained in good condition and inspected regularly.

**6. Prohibition relating to employment of women and young persons** – No women or young person shall be employed or permitted to work in any work room involving exposure to benzene or substances containing benzene.

**7. Labeling** – Every container holding benzene or substances containing benzene shall have the word ‘Benzene’ and approved danger symbol clearly visible on it and shall also display information on benzene content, warning about toxicity and warning about inflammability of the chemical.

**8. Improper use of benzene**

- (1) The use of benzene or substances containing benzene by workers for cleaning their hands or their work clothing shall be prohibited.
- (2) Workers shall be instructed on the possible dangers arising from such misuse.

**9. Prohibition of consuming food etc. in workroom** – No worker shall be allowed to store or consume food or drink in the workroom in which benzene or substances containing benzene or manufactured, handled or used. Smoking and chewing tobacco or pan shall be prohibited in such workrooms.

**10. Instructions as regard risks** – Every worker on his first employment shall be fully instructed on the properties of benzene of substances containing benzene which he has to handle and of the dangers involved. Workers shall also be instructed on the measures to be taken to deal with in an emergency.

**11. Cautionary notices** – Cautionary notices in the form specified in appendix and printed in the language easily read and understood by the majority of the workers shall be displayed in prominent places in the work rooms where benzene of substances containing benzene are manufactured, handled or used.

**12. Washing facilities, cloak room and mess room**– In factories in which benzene or substance containing benzene are manufactured, handled or used, the occupier shall provide and maintain in clean state and in good repair, -

- (a) washing facilities under cover of the standard of at least one tap for every 10 persons having constant supply of water with soap and a clean towel provided individually to each worker if so ordered by the Inspector.
- (b) at cloak room with the lockers for each worker, having two compartments one for street clothing and one for work clothing; and
- (c) a mess room furnished with tables and benches with means for warming food, provided that where a canteen or other proper arrangements exist for the workers to take their meals, the requirements of mess room shall be dispensed with.

**13. Medical facilities and records of examination and tests** –

- (1) The occupier of every factory to which this schedule applies, shall –
- (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories; and

(b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a)

- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

#### **14. Medical Examination by the Certifying Surgeon**

- (1) Every worker employed in processes mentioned in paragraph 1, shall be examined by a certifying surgeon within 15 days of his first employment, such examination shall include tests for detection of phenol in urine and determination of urinary sulphide ratio and C.N.S. and hematological tests. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.
- (2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every twelve calendar months and such examination shall, wherever the certifying surgeon considers appropriate; include all the tests specified in sub-paragraph (1). Further, every worker shall also be examined once in every three calendar months by the factory medical officer.
- (3) The certifying Surgeon after examining, a worker, shall issue a certificate of fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the certificate and the certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (10 and 20), including the nature and the results of these tests shall also be entered by the Certifying Surgeon in a health register in Form 17.
- (4) The certificate of fitness and the health register shall be kept readily available for inspection by the inspector.
- (5) If at any time the certifying surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit to work in the said processes. The person so suspended for the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the certifying surgeon, in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said processes unless the certifying surgeon, after further examination, again certifies him fit for employment in those processes.

### **APPENDIX CAUTIONARY NOTICE Benzene and substances containing benzene**

#### **1. Hazards**

- (a) Benzene and substances containing benzene are harmful.
- (b) Prolonged or repeated breathing of benzene vapours may result in acute or chronic poisoning.
- (c) Benzene can also be absorbed through skin which may cause skin and other diseases.

#### **2. Preventive measures**

- (a) Avoid breathing of benzene vapours.
- (b) Avoid prolonged or repeated contact of benzene with the skin;
- (c) Remove benzene soaked or wet clothing promptly.
- (d) If any time you are exposed to high concentration of benzene vapours and exhibit signs and symptoms such as dizziness, difficulty in breathing excessive excitation and losing of consciousness, immediately inform your factory manager.

- (e) Keep all the containers of benzene closed.
- (f) 'Handle', use and process benzene and substances containing benzene carefully in order to prevent their spillage on floor.
- (g) Maintain good housekeeping.

### 3. Protective equipment

- (a) Use respiratory protective equipment in place where benzene vapours represent in high concentration.
- (b) In emergency use self generating oxygen mask or oxygen or air cylinder masks.
- (c) Wear hand gloves, aprons, goggles and gum boots to avoid contact of benzene with your skin and body parts.

### 4. First-aid measures in case of acute benzene poisoning

- (a) Remove the clothing immediately if it is vested with benzene
- (b) If liquid benzene enters eyes, flush thoroughly for at least 15 minutes with clean running water and immediately secure medical attention.
- (c) In case of unusual exposure to benzene vapour, call a physician immediately. Until he arrives, do the following:
  - (i) If the exposed person is conscious-
    - (aa) Move him to fresh air in open
    - (bb) Lay down without a pillow and keep him quite and warm.
  - (ii) If the exposed person is unconscious-
    - (aa) Lay him down preferably on the left side with head low.
    - (bb) Remove any false teeth, chewing-gum, tobacco or the foreign objects which may be in his mouth.
    - (cc) Provide him artificial respiration in case difficulty in being experienced in breathing.
    - (dd) In case of shallow breathing or cyanosis (blueness of skin lips, ears, finger nail beds) he should be provided with medical oxygen or oxygen carbon dioxide mixture. If needed, he should be given artificial respiration. Oxygen should be administered by a trained person only.

## Schedule XXII

### Manufacturing Process or Operation in Carbon Disulphide plant

1. **Application-** This schedule shall apply to all electric furnaces in which carbon disulphide is generated and all other plants where carbon disulphide after generation, is condensed refined and stored This scheduled is in addition to and not in derogation of any of the provisions of the Act and Rules made there under.
2. **Construction, installation and operation**
  - (1) The buildings in which electric furnaces are installed and carbon disulphide after generation is condensed and refined shall be segregated from other parts of the factory and shall be of open type to ensure optimum ventilation and the plant lay out shall be such that only a minimum number of workers are exposed to the risk of any fire or explosion at any one time;
  - (2) Every electric furnace and every plant in which carbon disulphide is condensed, refined and stored, with all their fittings and attachments shall be of good construction, sound material and of adequate strength to sustain the internal pressure to which the furnace or the plant may be subjected and shall be so designed that carbon disulphide liquid and gas are in closed system during their normal working;
  - (3) The electric furnace supports shall be firmly grouted in concrete or by other effective means;
  - (4) Every electric furnace shall be installed and operated according to manufactures instructions and these instructions shall be clearly imparted to the personal incharge of construction and operations;

- (5) The instructions regarding observance of correct furnace temperature, sulphur dose, admissible current of power consumption and periodical checking of charcoal level shall be strictly complied with.

### 3. Electrodes

- (1) Where upper ring electrodes made of steel are used in the electric furnace, they shall be of steam less tube construction and shall have arrangement for being connected to cooling water system through a siphon built in the electrodes or through a positive pressure water-pump
- (2) The arrangement for cooling water referred to in sub-paragraph (1) shall be connected with automatic alarm system which will actuate in the event of interruption of cooling water in the electrodes and give visible and audible alarm signals in the control room and simultaneously stop power supply for the furnace operation and to stop the further supply of water. The alarm system and the actuating device shall be checked every day.

### 4. Maintenance of charcoal levels – When any electric furnace is in operation, it shall be ensured that the electrodes are kept covered with charcoal bed.

### 5. Charcoal separator – A cyclone type of Charcoal separator shall be fitted on the off take pipe between the electric furnace and sulphur separator to prevent entry of pieces of charcoal into the condensers and piping.

### 6. Repair discs and safety seal

- (1) At least two rupture disc of adequate size which shall blow off at a pressure twice the maximum operating pressure shall be provided on each furnace and shall either be mounted directly on the top or the furnace of each through an independent pipe as close as possible to the furnace.
- (2) A safety water seal shall be provided and tapped from a point between the charcoal separator and the sulphur separator.

### 7. Pyrometer and manometers

- (1) Each electric furnace shall be fitted with adequate number of pyrometers to give an indication of the temperature as correctly as reasonably practicable at various points in the furnace. The dials for Reading temperatures shall be located in the control room.
- (2) Manometers or any other suitable devices shall be provided for indicating pressure.
  - (a) in the off take pipe before and after the sulphur separator; and
  - (b) in primary and secondary condensers.

### 8. Check valves – All piping carrying carbon disulphide shall be fitted with check valves at suitable positions so as to prevent gas from flowing back into any electric furnace in the event of its shutdown.

### 9. Inspection and maintenance of electric furnaces

- (1) Every electric furnace shall be inspected internally by a competent person -
  - (a) before being placed in service after installation;
  - (b) before being placed in service after reconstruction or repairs; and
  - (c) periodically every time the furnace is opened for cleaning or de-ashing or for replacing electrodes.
- (2) When an electric furnace is shut down for cleaning or de-ashing -
  - (a) the brick lining shall be checked for continuity and any part found defective removed;
  - (b) after removal of any part of the lining referred to in (a) the condition of the shell shall be closely inspected; and
  - (c) any plates forming shell found corroded, to the extent that safety of the furnace is endangered shall be replaced.

### 10. Maintenance of records – The following hourly records shall be maintained in a log book -

- (a) manometer readings at the points specified in sub-paragraph 7(2)
- (b) gas temperature indicated by pyrometers and all other vital points near the sulphur and primary and secondary condensers.

(c) water temperature and flow of water through the siphon in the electrodes ; and

(d) Primary and secondary voltages and current and energy consumed.

**11. Electrical apparatus, wiring and fittings** - All buildings in which carbon disulphide is refined or stored shall be provided with electrical apparatus wiring and fittings which shall afford adequate protection from fire and explosion.

**12. Prohibition relating to smoking** - No person shall smoke or carry matches, fire or naked light or other means of producing a naked light or spark in buildings in which carbon the disulphide is refined or stored, and a notice in the language understood by a majority of the workers shall be pasted on the plant prohibiting smoking and carrying of matches, fire of naked light or other means of producing naked light of spark in to such rooms.

**13. Means of escape** - Adequate means of escape shall be provided and maintained to enable persons to move to a safe place as quickly as possible in case of an emergency. At least two independent staircases of adequate width shall be provided in every building housing the furnaces at reasonable intervals at opposite ends. These shall always be kept clear of all obstructions and so designed as to afford easy passage.

**14. Warnings in case of fire** – There shall be adequate arrangements for giving warnings in case of fire or explosion which shall operate on electricity and in case of failure of electricity by some mechanical means.

**15. Fire fighting equipments**

(1) Adequate number of suitable fire extinguishers or other fire fighting equipments shall be kept in constant readiness for dealing with risks involved and depending on the amount and nature of material stored;

(2) Clear instructions as to how the extinguishes or other equipments should be used printed in the language which the majority of the workers employed understand, shall be affixed to each extinguishers or other equipment and the personal trained in their use.

**16. Bulk Sulphur**

(1) Open or semi enclosed spaces for storage of bulk sulphur shall be sited with the due regard to the dangers which may arise from spark given off by nearby locomotive etc., and precautions shall be taken to see that flames, smoking and matches and other sources of ignition do not come in contact with the clouds of dust arising during handling of bulk sulphur.

(2) All enclosures for bulk sulphur shall be of non-combustible construction adequately ventilated and so designed as to provide a minimum of ledges on which dust may lodge;

(3) The bulk sulphur in the enclosures shall be handled in such a manner as to minimize the formation of dust clouds and no flame, smoking and matches or other sources of ignition shall be employed during handling, and non-sparking tools shall be used whenever sulphur is shoveled or otherwise removed by hand;

(4) No repair involving flames heat or use of hand of power tools shall be made in the enclosure where bulk sulphur is stored.

**17. Liquid sculpture** – Open flames, electric sparks and other sources of ignition, including smoking and matches; shall be excluded from the vicinity of molten sculpture.

**18. Training and supervision**

(1) All electric furnaces and all plants in which carbon disulphide is condensed, refined or stored shall be under adequate supervision at all times while the furnaces and plant are in operation;

(2) Workers in-charge of operation and maintenance of electric furnaces and the plants shall be properly qualified and adequately trained.

**19. Washing facilities**

(1) The occupier shall provide and maintain in a clean state and in good repair, for the use of all persons employed wash place under cover with at least one tap or stand-pipe having a constant supply of clean water for every five such persons, the taps or stand-pipes being spaced not less

than 120 centimeters apart with a sufficient supply of soap and clean towels provided that towels shall be supplied individually to each worker if so ordered by the Inspector.

(2) All the workers employed in the sculpture storage, handling and melting operations shall be provided with a nail brush.

#### 20. Personal protective equipment

(1) Suitable goggles and protective clothing consisting of overalls without pockets, gloves and footwear shall be provided for the use of operators -

- (a) when operating valves or cocks controlling fluids etc.,
- (b) drawing off of molten sculpture from sculpture posts; and
- (c) handling charcoal or sculpture .

(2) Suitable respiratory protective equipments shall be provided and stored in the appropriate place for use during abnormal conditions or in an emergency.

(3) Arrangements shall be made for the proper and efficient cleaning of all such protective equipments.

**21. Clock rooms** – There shall be provided and maintained for the use of all persons employed in the process a suitable clock room for clothing put off during work hours and a suitable place separate from the clock room for the storage of overalls or working clothes. The accommodation so provided shall be placed in the charge of a responsible person and shall be kept clean.

**22. Unauthorized persons** – Only maintenance and repair personnel, persons directly connected with the plant operation and those accompanied by authorized persons shall be admitted into the plant.

### Schedule XXIII

#### Manufacture or Manipulation of Carcinogenic Dye Intermediates

**1. Application** – The schedule shall apply in respect of all factories or any part thereof where processes in which the substances mentioned in paragraph 3 and 4 are formed, manufactured, handled or used and the processes incidental thereto in the course of which these substances are formed, are carried on. The processes indicated in the paragraph shall be referred to hereinafter “as the said processes” and such a reference shall mean any or all the processes described in this paragraph.

**2. Definition** – For the purpose of this schedule the following definitions shall apply, unless the context otherwise requires, -

- (a) “controlled substances” means chemical substances mentioned in paragraph 4 of this schedule;
- (b) “efficient exhaust draught” means localized ventilation effected by mechanical means for the removal of gas, vapour, dust or fume so as to prevent them from escaping into the air of any place in which work is carried on. No draught shall be deemed to be efficient which fails to remove smoke generated deemed to be efficient which fails to remove smoke generated at the point where such gas, vapour, fume or dust originates; and
- (c) “prohibited substances” means chemical substances mentioned in paragraph 3 of this schedule

**3. Prohibited substances** – For the purpose of this schedule, the following chemical substances shall be classified as “prohibited substances” except when these substances, are present or are formed as a by-product of a chemical reaction in a total concentration not exceeding one per cent;

- (a) beta- naphthylamine and its salts;
- (b) Benzidine and its salts;
- (c) 4-amino diphenyl and its salts;
- (d) 4-nitro diphenyl and its salts; and
- (e) any substances containing any of these compounds.

**4. Controlled substances** – For the purpose of this schedule the following chemical substances shall be classified as controlled substances’.

- (a) Alpha-naphthylamine or alpha-naphthylamine containing not more than one percent of beta-naphthylamine either as a by-product of chemical reaction or otherwise, and its salts;
  - (b) Ortho-tolidine and its salts;
  - (c) Dianisidine and its salts;
  - (d) Dichlorobenzidine and its salts;
  - (e) Auramine; and
  - (f) Magneta
- 5. Prohibition of employment** – No person shall be employed in the said process in any factory in which any prohibited substance is formed, manufactured, processes, handled, or used except as exempted by the Chief Inspector as stipulated in Paragraph 23.
- 6. Requirements for processing or handling controlled substances**
- (1) Where ever any of the controlled substances referred to in paragraph 4 are formed manufactured, processed, handled, or used, all practical steps be taken to prevent inhalation, ingestion or absorption of the said controlled substance by the workers while engaged in processing that substance, and its storage or transport within the plant, or in cleaning or maintenance of the concerned equipment, plant, machinery and storage areas.
  - (2) As far as possible all operations shall be carried out in a totally enclosed system. Wherever such enclosure is not possible, efficient exhaust draught shall be applied at the point where the controlled substances are likely to escape into the atmosphere during the process.
  - (3) The controlled substances shall be received in the factory in tightly closed containers and shall be kept so except when these substances are in process or in use. The controlled substances shall leave the factory only in tightly closed containers of appropriate type. All the containers shall be plainly labeled to indicate the contents.
- 7. Personal protective equipment**
- (1) The following items of personal protective equipment shall be provided and issued to every worker employed in the said processes:-
    - (a) long trousers and shirts or overall with full sleeves and head coverings. The shirt or overall shall cover the neck completely; and
    - (b) rubber gum-boots.
  - (2) The following items of personal protective equipment shall be provided in sufficient numbers for use by workers employed in the said processes when there is danger of injury during the performance of normal duties or in the event of emergency;
    - (a) rubber hand-gloves;
    - (b) rubber aprons; and
    - (c) airline respirators or other suitable respiratory protective equipment.
  - (3) It shall be the responsibility of the manager to maintain all items of personal protective equipment in a clean and hygienic condition and in good repair.
- 8. Prohibition relating to employment of women and young persons** – No women or young person shall be employed or permitted to work in any room in which the said process are carried on.
- 9. Floors of workroom** – The floor of every workroom in which the said process are carried on shall be
- (a) smooth and impervious to water provided that asphalt or tar shall not be used in the composition of the floor,
  - (b) maintained in a state of good repair
  - (c) with a suitable slope for easy draining and provided with gutters and
  - (d) thoroughly washed daily with the drain water being led into a sewer through a closed channel.
- 10. Disposal of empty containers** – Empty containers used for holding controlled substances shall be thoroughly cleaned of their contents and treated with an inactivating agent before being discarded.
- 11. Manual handling** – Controlled substances shall not be allowed to be mixed, filled, exempted or handled except by means of a scoop with a handle such scoop shall be thoroughly cleaned daily.



- 12. Instructions regarding risk** – Every worker in his first employment in the said processes shall be fully instructed on the properties of the toxic chemicals to which he is likely to be exposed to, of the dangers involved and the precautions to be taken. Workers shall also be instructed on the measures to be taken to deal with an emergency.
- 13. Cautionary placards** – Cautionary placards in the form specified in appendix attached to this schedule and printed in the language of the majority of the workers employed in the said processes shall be affixed in prominent places frequented by them in the factory where the placards can be easily and conveniently read. Arrangements shall be made by the manager to instruct periodically all such workers regarding the precautions contained in the cautionary placards.
- 14. Obligations of the workers** – It shall be the duty of the persons employed in the said processes to submit themselves for the medical examination including exfoliate cytology of urine by the Certifying surgeon or the qualified medical practitioner as provided by under these rules.
- 15. Washing and bathing facilities**
- (1) The following washing and bathing facilities shall be provided and maintained in a clean state and in good repair for the use of all workers employed in the said process:-
- (a) a wash place under cover having constant supply of water and provided with clean towels, soap and nailbrushes and with at least one stand pipe for every five such workers;
  - (b) 50 percent of the stand pipes provided under clause (a) shall be located in the bathrooms where both hot and cold water shall be made available under the working hours of the factory and for one hour thereafter;
  - (c) the washing and bathing facilities shall be in close proximity of the area housing and the said process;
  - (d) clean towels shall be provided individually to each workers; and
  - (e) in addition to the taps mentioned under clause (a) one stand pipe, in which warm water is made available shall be provided on each floor.
- (2) Arrangement shall be made to wash factory uniforms and other work clothes every day.
- 16. Food, drinks etc. prohibited in workroom** – No worker shall consume food, drink, an supari or tobacco or shall smoke in any workroom in which the said processes are carried on and no worker shall remain in any such room during intervals for meals or rest.
- 17. Cloakroom** – There shall be provided and maintained in a clean state and in good repair for the use of the workers employed in the said processes (a) cloakroom with lockers having two compartments – one for street clothes and the other for work clothes, and (b) a place separate from the locker room and the mess room, for the storage of protective equipment provided under paragraph 7. The accommodation so provided shall be under the case of responsible person and shall be kept clean.
- 18. Mess room** – There shall be provided and maintained for the use of workers employed in the said processes who remain on the premises during the meal intervals, a mess room which shall be furnished with tables and benches and provided with suitable means for warming food.
- 19. Time allowed for washing** – Before the end of each shift 30 minutes shall be allowed for bathing for each worker who is employed in the said process. Further, atleast 10 minutes shall be allowed for washing before each meal in addition to the regular time allowed for meals.
- 20. Restriction on age of persons employed** – No worker under the age of 40 years shall be engaged in the factory in the said processes for the first time after the date on which the schedule comes into force.
- 21. Medical facilities and records of examinations and tests**
- (1) The occupier of every factory to which the schedule applies, shall -
- (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories; and

(b) provided to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register provided by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

## **22. Medical examination by the Certifying Surgeon**

- (1) Every workers employed in the said process shall be examined by a Certifying Surgeon within 15 days of his first employment. Such examination shall include tests for detection of methemoglobin in food (Hematological tests), paranitrophenol in urine, pulmonary function tests and CNS tests. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.
- (2) Every worker employed in the said processes shall be re-examined by a Certifying Surgeon at least once in every six calendar months and such reexamination shall, wherever the Certifying Surgeon considers appropriate, include all the tests specified in sub-paragraph (1).
- (3) The Certifying Surgeon after examining a worker shall issue a Certificate of Fitness in Form 27. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2), including the nature and the results of these tests, shall also be entered by the Certifying Surgeon in a health register in Form 17.
- (4) The Certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.
- (5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit to work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the certifying surgeon, in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub paragraph (5) shall be re-employed or permitted to work in the said process unless the certifying surgeon after further examination, a gain certifies him fit for employment in those processes.

## **23. Exemptions – Prohibited substances**

- (1) The Chief Inspector may by a Certificate in writing which he may at his discretion revoke at any time, subject to such conditions, if any, as may be specified therein, exempt any process in the course of which any of the prohibited substances if formed processes, manufactured, handled, used, from the provisions of paragraph 5 if he is satisfied that the process is carried out in a totally enclosed and hermetically sealed system in such a manner that the prohibited substance is not removed from the system except in quantities no greater than that required for the purpose of control, of the process or such purposes as is necessary to ensure that the product or such purpose is free from any of the prohibited substances.
- (2) The Chief Inspector may allow the manufacture, handling or use of Benzidine hydrochloride provided that all the processes in connection with it are carried out in a totally enclosed system in such a manner that no prohibited substance other than Benzidine hydrochloride is removed there from except in quantities no greater than that required for the purpose of control of the processes or such a purposes as is necessary to ensure that the product is free from prohibited substances and that adequate steps are taken to ensure that Benzidine hydrochloride is, except while not in a totally enclosed system, kept with not less than one part of water to two parts of Benzidine hydrochloride at all times.

**24. Exception** – General – If in respect of any factory the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reason, all or any of the provisions of this schedule is not necessary for the protection of the workers in the factory, the Chief Inspector may by a Certificate in writing (which he may in his discretion revoke at any time) exempt such factory from all or any of such provisions subject to such conditions, if any, as he may specify therein.

## APPENDIX

### CAUTIONARY PLACARD/NOTICE CARCINOGENIC DYE INTERMEDIATES

1. Dye intermediates which are nitro amino derivatives or aromatic hydrocarbons are toxic. You have to handle these chemicals frequently in this factory.
2. Use the various items of protective wear to safeguard your own health.
3. Maintain scrupulous cleanliness at all times. Thoroughly wash hands and feet before taking meals. It is essential to take a bath before leaving the factory.
4. Wash off any chemical falling on your body with soap and water. If splashed with a solution of the chemical, remove the contaminated clothing immediately. These chemicals are known to produce cyanosis. Contact the medical officer or appointed doctor immediately and get his advice.
5. Handle the dye intermediates only with long handled scoops, never with bare hands.
6. Alcoholic drinks should be avoided as they enhance the risk of poisoning by the chemicals.
7. Keep your food and drinks away from work place, consuming food, drinks or tobacco in any form at the place of work is prohibited.
8. Serious effects from work with toxic chemicals may follow after many years. Great care must be taken to maintain absolute cleanliness of body, clothes, machinery and equipment.

## Schedule XXIV

### Operations involving High Noise Levels.

1. **Applications** – This Schedule shall apply to all operations in any manufacturing process having high noise level.
2. **Definitions** – For the purpose of this Schedule –
  - (a) “Noise” means any unwanted sound.
  - (b) “High noise level” means any noise level measured on the A-weighted scale in 90 dB or above.
  - (c) “Decibel” means one-tenth of “Bel” which is the fundamental division of a logarithmic scale used to express the ratio of two specified or implied quantities, the number of “Bels” denoting such a ratio being the logarithm to the base of 10 of this ratio. The noise level (or the sound pressure level) corresponds to a reference pressure of  $20 \times 10^{-6}$  newtons per square metre or 0.0002 dynes per square centimetre which is the threshold of hearing, dynes per square centimeter which is threshold of hearing, that is, the lowest sound pressure level necessary to reduce the sensation of hearing healthy listeners. The decibel in abbreviated form is dB.
  - (d) “Frequency” is the rate of pressure variations expressed in cycles per second or hertz.
  - (e) “dBA” refers to sound level in decibels as measured on a sound level meter operating on the A-weighting network with slow meter response.

(f) “A-weighting” means making graded adjustments/in the intensities of sound of various frequencies for the purpose of noise measurement, so that the sound pressure level measured by an instrument reflects the actual response of the human ear to the sound measured.

### 3. Protection against noise –

(1) In every factory, suitable engineering control or administrative measures shall be taken to ensure, so far as is reasonably practicable, that no worker is exposed to sound levels exceeding the maximum permissible noise exposure levels specified in Tables 1 and 2.

**TABLE 1**

**PERMISSIBLE EXPOSURE IN CASES OF CONTINUOUS NOISE**

Total time of exposure (Continuous or a number of short time exposures) per day in hours	Sound pressure level in DBA
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
¾	107
½	110
¼	115

Notes: 1. No exposure in excess of 115 DBA is to be permitted

2. For any period of exposure falling in between any figure and the next higher or lower figure as indicated in column (1), the permissible sound pressure level is to be determined by extrapolation on a proportionate basis.

**TABLE 2**

**PERMISSIBLE EXPOSURE LEVELS OF IMPULSIVE OR IMPACT NOISE**

Peak sound pressure level in dB	Permitted number of Impulses or impacts per day
140	100
135	315
130	1000
125	3160
120	10000

Note: 1. No exposure in excess of 140 dB peak sound pressure level is permitted.

2. For any peak sound pressure level falling in between any figure and the next higher or lower figures as indicated in column (1), the permitted number of impulses or impacts per day is to be determined by extrapolation on a proportionate basis.

(2) For the purposes of this Schedule, if the variations in the noise level involve maximum at intervals of one second or less, the noise is to be considered as a continuous one and the criteria given in Table I would apply. In other cases, the noise is to be considered as impulsive or impact noise and the criteria given in Table 2 would apply.

(3) When the daily noise exposure is composed of two or more periods of noise exposure at different levels their combined effect should be considered, rather than the individual effect of each. The mixed exposure should be considered to exceed the limit value if the sum of the fractions

$$\frac{C1}{T1} + \frac{C2}{T2} + \dots + \frac{Cn}{Tn}$$

(4) Where the C1, C2, etc., indicate the total time of actual exposure at a specified noise level and T1, T2, etc., denote the time of exposure permissible at that level. Noise exposure of less than 90 dBA may be ignored in the above calculation.

Where it is not possible to reduce the noise exposure to the levels specified in sub-rule (1) by reasonably practicable engineering control or administrative measures, the noise exposure shall be reduced to the greatest extent feasible by such control measures, and each worker so exposed shall be provided with suitable ear protectors so as to reduce the exposure to noise to the levels specified in sub-rule (1).

(5) Where the ear protectors provided in accordance with sub-paragraph (2) and worn by a worker cannot still attenuate the noise reaching near his ear, as determined by subtracting the attention value in dBA of the ear protectors concerned from the measured sound pressure level, to a level permissible under Table I or Table II as the case may be the noise exposure period shall be suitably reduced to correspond to the permissible noise exposures specified in sub-paragraph (1).

(6) (a) In all cases where the prevailing sound levels exceed the permissible levels specified in sub-paragraph (1) there shall be administered an effective hearing conservation programme which shall include among other hearing conservation measures, pre-employment and periodical auditory surveys conducted on workers exposed to noise exceeding the permissible levels, and rehabilitation of such workers either by reducing the exposure to the noise levels or by transferring them to places, where noise levels are relatively less or by any other suitable means.

(b) Every worker employed in areas where the noise exceeds the maximum permissible exposure levels specified in sub-rule (1) subjected to an auditory examination by a certifying surgeon within 14 days of his first employment and thereafter, shall be re-examined at least once in every 12 months. Such initial and periodical examinations shall include tests which the certifying surgeon may consider appropriate, and shall include determination of auditory thresholds for pure tones of 125, 250, 500, 1000, 2000, 4000 and 8000 cycles per second.

### Schedule XXV

#### Manufacture of Rayon by Viscose Process

**1. Definition** – For the purpose of this schedule

- (a) “approved” means approved for the time being in writing by the Chief Inspector.
- (b) “breathing apparatus” means a helmet of face piece with necessary connections by means of which the person using it in a poisonous asphyxiating or irritant atmosphere breathes unpolluted air, or any other approved apparatus.
- (c) “Churn” means the vessel in which alkali cellulose pulp is treated with carbon disulphide;
- (d) “dumping” means transfer or cellulose xanthate from a dry churn to a dissolver;
- (e) “efficient exhaust draught” means localized ventilation by mechanical means for the removal of any gas or vapour, so as to prevent it from escaping into the air of any place in which work is carried on. No draught shall be deemed to be efficient if it fails to control effectively any gas or vapour generated at the point where such gas or fume originates;

- (f) “fume process” means any process in which carbon disulphide or hydrogen sulphide is produced, used or given off;
- (g) “life belt” means a belt made of leather or other suitable material which can be securely fastened round the body with a suitable length of rope attached to it, each of which is sufficiently strong to sustain the weight of a man;
- (h) “protective equipment” means apron, goggles, face shields, foot wear, gloves and overalls made of suitable materials.

## 2. Ventilation –

- (1) In all work rooms where a fume process is carried on, adequate ventilation by natural or mechanical means shall be provided so as to control, in association with other control measures, the concentration of carbon disulphide and hydrogen sulphide in the air of every work environment within the permissible limits.
- (2) Notwithstanding the requirements in sub-paragraph (1) the efficient exhaust draught shall be provided and maintained to control the concentration of carbon-di-sulphide and hydrogen sulphide in the air at the following locations.
  - (a) dumping hoppers of dry churns;
  - (b) spinning machines
  - (c) trio-rollers and cutters used in staple fibre spinning
  - (d) hydro-extractors for yarn cakes
  - (e) after treatment processes; and
  - (f) spin baths.
- (3) In so far as the spinning machines and trio rollers and cutter used in staple fibre spinning are concerned, they shall be, for the purpose of ensuring the effectiveness of the exhaust draught to be provided as required in sub paragraph 1, enclose as fully as practicable and provided with suitable shutters in sections to enable the required operations to be carried out without giving rise to undue quantities of carbon-di-sulphide and hydrogen sulphide escaping to the work environment.
- (4) No dry churn shall be opened after completion of reaction without initially exhausting the residual vapours of carbon-di-sulphide by operation of suitable and efficient arrangements for exhausting the vapours which shall be continued to be operated as long as the churn is kept opened.
- (5) Whenever any ventilation apparatus normally required for the purpose of meeting the requirements in sub-paragraph (2), (3) and (4) is ineffective, fails, or is stopped for any purpose whatsoever, all persons shall be required to leave the work areas where the equipment or processes specified in the above said sub paragraph are in use, as soon as possible and in any case not alter than 15 minutes after such an occurrence.
- (6) (a) All ventilating systems provided for the purposes as required in sub-paragraphs (2), (3) and (4) shall be examined and inspected once in every week by a responsible person. It shall be thoroughly examined and tested by a competent person once in every period of 12 months. Any defects found by such examinations or test shall be rectified forthwith.
  - (b) A register containing particulars of such examinations and tests, and the state of the systems and the repairs or alterations (if any) found to be necessary shall be kept and shall be available for inspection by an Inspector.

**3. Waste from spinning machines** – Waste yarn from the spinning machines shall be deposited in suitable containers provided with close fitting covers. Such waste shall be disposed off as quickly as possible after decontamination.

**4. Lining of dry churns** – The inside surface of all dry churns shall be coated with a non-sticky paint so that cellulose xanthate will not stick to the surface or all churn. Such coating shall be maintained in good condition.

**5. Air monitoring.-**

- (1) Ensure the effectiveness of the control measures, monitoring of carbon-di-sulphide and hydrogen sulphide in air shall be carried out once at least in every shift and the record of the result so obtained shall be entered in a register specially maintained for the purposes.
- (2) For the purpose of the requirements in sub-paragraph (1), instantaneous gas detector tubes shall not be used. Samples shall be collected over a duration of not less than 10 minutes and analyzed by an approved method. The locations where such monitoring is to be done shall be as directed by the Inspector.
- (3) If the concentration of either Carbon disulphide or hydrogen sulphide exceeds the permissible limits for such vapour or gas as laid down in Rule 127.A, suitable steps shall be taken for controlling the concentrations in air of such contaminants. A report of such occurrences shall be sent to the Chief Inspector forthwith.

**6. Prohibition to remain in fume process room.-** No person during his intervals for meal, or rest shall remain in any room wherein fume process is carried on.

**7. Prohibition relating to employment of young person.-** No young person shall be employed or permitted to work in any fume processor in any rooms in which any such process is carried on.

**8. Protection equipment.-**

- (1) The occupier shall provide and maintain in good condition protective equipment as specified in the Table for use of persons employed in the process referred to therein.

**TABLE**  
**Process Protection equipment**

1. Dumping	Overall, face-shields, gloves and foot wear all made of suitable material
2. Spinning	Suitable aprons, gloves and footwear
3. Process involves or likely to involve contact with viscose solution	Suitable gloves and footwear
4. Handing of sculpture	Suitable chemical goggles
5. Any other process involving contact with hazardous chemicals	Protective equipment as may be directed by the Chief Inspector by an order in writing

- (2) A suitable room, rooms or lockers shall be provided exclusively for the storage of all the protective equipment supplied to workers and no such equipment shall be stored any place other than the room, rooms or lockers so provided.

**9. Breathing Apparatus,-**

- (1) There shall be provided in every factory where fume is carried on, sufficient supply of-
  - (a) Breathing apparatus.
  - (b) Oxygen and suitable appliances for its administration, and
  - (c) Life belts.
- (2) (a) The breathing apparatus and other appliances referred to in sub-paragraph (1) shall be maintained in good condition and kept in appropriate locations so as to readily available.
- (b) The breathing apparatus and other appliances referred to in clauses (a) and (b) of sub-paragraph (1) shall be cleaned and disinfected at suitable intervals and thoroughly inspected once in every month by a responsible person.
- (c) A record of the maintenance of the condition of the breathing apparatus and other appliances referred to in sub-clause (1) shall be entered in a register provided for that purpose which shall be readily available for inspection by an Inspector

- (3) Sufficient number of workers shall be trained and periodically retained in the use of breathing apparatus and administering artificial respiration so that at least 2 such trained persons would be available during all the working hours in each room in which fume process is carried on.
- (4) Breathing apparatus shall be kept properly, labeled in clean, dry, tight-proof cabinets and if liable to be affected by fumes, shall be protected by placing them in suitable containers.
- (5) No person shall be employed to perform any work for which breathing apparatus is necessary to be provide under sub-paragraph (1) unless he has been fully instructed in the proper use of the equipment.
- (6) No breathing apparatus provided in pursuance of sub-paragraph (1) which has been worn by a person shall be worn by another person unless it has been thoroughly cleaned and disinfected since last being worn and the persons has been fully instructed in the proper use of that equipment.

**10. Electric fittings** – All electric fittings in any room in which carbon disulphide is produced, used or given off or is likely to be given off into the work environment, other than a spinning room, shall be of flame-proof construction and all electric conductors shall either be enclosed in metal conduits or be dead-sheathed.

**11. Prohibition relating to smoking etc.,** - No person shall smoke or carry matches, fire or naked light or other means of producing a naked light or spark in a room in which fume process is carried on. A notice in the language understood by the majority of the workers shall be posted at prominent locations in the plant prohibiting smoking and carrying of matches, fire or naked light or other means of producing naked light or spark into such rooms.

Provided that fire naked light or other means of producing a naked light of spark may be carried on in such room only when injured for the purposes of the process itself under the direction of a responsible person.

**12. Washing and bathing facilities** –

- (1) There shall be provided and maintained in clean state and in good repair for the use of all workers employed in the factory where the said manufacturing process is carried on, adequate washing and bathing places having a constant supply of water under cover at the rate of one such place for every 25 persons employed.
- (2) The washing places shall have stand pipes placed at intervals of not less than one metre.
- (3) Not less than one half of the total number of washing places shall be provided with bath-rooms.
- (4) Sufficient supply of clean towels made of suitable material shall be provided:  
provided that such towels shall be supplied individually for each worker if so ordered by the Inspector.
- (5) Sufficient supply of soap and nail brushes shall be provided.

**13. Rest room** –

- (1) A rest room shall be provided for the workers engaged in doffing operations of filament yarn spinning process.
- (2) Such rest room shall be provided with fresh air supply and adequate seating arrangement.

**14. Cautionary notice and instructions** –

- (1) The following cautionary notice shall be prominently displayed in each fume process room.

#### Cautionary Notice

1. Carbon disulphide (CS<sub>2</sub>) and Hydrogen Sulphide (H<sub>2</sub>S) which may be present in this room are hazardous to health.
2. Follow safety instructions
3. Use protective equipment and breathing apparatus as and when required.
4. Smoking is strictly prohibited in this area.



This notice shall be in a language understood by the majority of the workers and displayed where it can be easily and conveniently read if any worker is illiterate, effective steps shall be taken to explain carefully to him the contents of the notice also displayed.

- (2) Arrangements shall be made to instruct each worker employed in any room in which a fume process is carried on regarding the health hazards connected with their work and the preventive measures and methods to protect themselves. Such instructions shall be given on his first employment and repeated periodically.
- (3) Simple and special instructions shall be framed to ensure that effective measures will be carried out in case of emergency involving escape of carbon disulphide and hydrogen sulphide. Those instructions shall be displayed in the concerned area and workers shall be instructed and trained in the action to be taken in such emergencies.

**15. Medical facilities and records of examinations and tests –**

- (1) The occupier of each factory to which this schedule applies shall -
  - (a) employ a qualified medical officer for medical surveillance of the workers employed in the fume process whose employment shall be subject to the approval of the Chief Inspector of Factories; and
- (2) The record of medical examination and appropriate tests carried out by the said medical officer shall be maintained in a separate register approved by the Chief Inspector of Factories which shall be kept readily available for inspection by the Inspector.

**16. Medical Examinations by the Certifying Surgeon –**

- (1) Every worker employed in the fume process shall be examined by a certifying surgeon within 15 days of his first employment. Such examination shall include tests for estimation of exposures co-efficient (iodine-azide test on urine) and cholesterol as well as electrocardiogram (ECG) and Central Nervous System (CNS) Tests. No workers shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Certifying Surgeon.
- (2) Every worker employed in the fume process shall be re-examined by a Certifying Surgeon at least once in every twelve calendar months. Such examination shall wherever the Certifying Surgeon considers appropriate, include all the tests as specified in sub-paragraph (1)
- (3) The Certifying Surgeon after examining a worker shall issue a Certificate of Fitness in Form 27. The record of re-examinations carried out shall be entered in the certificates and Certificate shall be kept in the custody of the Manager of the Factory. The record of each examination carried out under sub-paragraph (1) and (2) including the nature and the results of the tests, shall also be entered by the Certifying Surgeon in a health register in Form 17.
- (4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspectors.
- (5) If at any time the Certifying Surgeon is of the opinion that a worker is no longer fit for employment in the fume process on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in these documents should also include the period for which he considers that the said persons are unfit for work in the fume process. The persons so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Certifying Surgeon, in which case the person affected shall be suitable rehabilitated
- (6) No person who has been found unfit to work as said in sub-paragraph(5) above shall be re-employed or permitted to work in the fume process unless the Certifying Surgeon after further examination again certified him fit for employment in such process.

**17. Exemptions –** If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the process or for any other reason all or any of the

provisions of this schedule is not necessary for protection of the workers in the factory the Chief Inspector may by a certificate in writing, which he may at his discretion revoke at any time, exempt such factory from all or any of such provisions subject to such conditions, if any, as he may specify therein.

### Schedule XXVI

#### Highly Flammable Liquids and Flammable Compressed Gases

1. **Application** - These rules will be applicable to all factories where highly flammable liquids or flammable compressed gases are manufactured, stored, handled or used.
2. **Definition** – For the purpose of this schedule:-
  - (a) “highly flammable liquid” means any liquid including its solution, emulsion or suspension which when tested in a manner specified by sections 14 and 15 of the Petroleum Act, 1934 (30 of 1934) gives off flammable vapours at a temperature less than 32 degree centigrade.
  - (b) “flammable compressed gases” means flammable compressed gas as defined in section 2 of the Static and Mobile pressure. Vessels (unfired) Rules, 1981 framed under the Explosives Act, 1884.
3. **Storage** –
  - (1) Every flammable liquid or flammable compressed gas used in every factory shall be stored in suitable fixed storage tank, or in suitable closed vessel located in a safe position under the ground, in the open or in a store room of adequate fire resistance constructions.
  - (2) Except as necessary for use; operation or maintenance every vessel or tank which contains or had contained a highly flammable liquid or flammable compressed gas shall be always kept close and all reasonably practicable steps shall be taken to contain or immediately drain off to a suitable container any spill or leak that may occur.
  - (3) Every container, vessel, tank, cylinder or store room used for storing highly flammable liquid or flammable compressed gas shall be clearly and in bold letters marked “Danger-Highly flammable liquid” or “Danger-flammable compressed gas”.
4. **Enclosed systems for conveying highly flammable liquids** – Wherever it is reasonably practicable, highly flammable liquids shall be conveyed within a factory in totally enclosed systems consisting of pipe lines, pumps and similar appliances from the storage tank or vessel to the point of use. Such enclosed system shall be so designed, installed operated and maintained as to avoid leakage or the risk of spilling.
5. **Preventing formation of flammable mixture with Air** – Wherever there is a possibility for leakage or spill of highly flammable liquid or flammable compressed gas from an equipment pipeline valve, joint or other part of a system, all practicable measures shall be taken to contain, drain off or dilute such spills or leakage as to prevent formation of flammable mixture with air.
6. **Prevention of Ignition** – (1) In every room, work place or other location where highly flammable liquid or flammable combustible gas is stored, conveyed, handled or used or where there is danger of fire or explosion from accumulation of highly flammable liquid or flammable compressed gas in air, all practicable measures shall be taken to exclude the sources of ignition. Such precautions shall include the following:
  - (a) all electrical apparatus shall either be excluded from the area of risk or they shall be of such construction and so installed and maintained as to prevent the danger of their being a source of ignition;
  - (b) effective measures shall be adopted for prevention of accumulation of static charges to a dangerous extent;
  - (c) No person shall wear or be allowed to wear any foot wear having iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction;
  - (d) smoking, lighting or carrying of matches, lighters or smoking materials shall be prohibited;

- (e) transmission belts with iron fasteners shall not be used; and
- (f) all other precautions, as are reasonably practicable, shall be taken to prevent initiation of ignition from all other possible sources such as open flames, frictional sparks, overheated surfaces of machinery or plant, chemical or physical-chemical reaction and radiant heat.
- 7. Prohibition of smoking** – No person shall smoke in any place where highly flammable liquid or flammable compressed gas is present in circumstances that smoking would give rise risk of fire. The occupier shall take all practicable measures to ensure compliance with this requirement including display of bold notice indicating prohibition of smoking at every place where this requirement applies.
- 8. Fire fighting** – In every factory where highly flammable liquid or flammable compressed gas is manufactured, stored, handled or used, appropriate and adequate means of fighting a fire shall be provided. The adequacy and suitability of such means which expression includes the fixed and portable fire extinguishing systems, extinguishing material procedures and the process of fire fighting, shall be to the standards and levels prescribed by the Indian Standards applicable, and in any case not inferior to the stipulations under Rule 79.
- 9. Exemption** – If in respect of any factory, Chief Inspector is satisfied that owing to the exceptional circumstances for infrequency of the processes or for any other reason all or any of the provisions of this schedule in not necessary for protection of the workers in the factory, the Chief Inspector may by a certificate in writing, which he may at his discretion revoke at any time, exempt such factory from all or any of such provisions subject to such conditions, if any, as he may specify therein.

### Schedule XXVII Operations in Foundries

- 1. Application** – Provisions of this schedule shall apply to all parts of factories where any of the following operations or processes are carried on;
- (a) the production of iron castings or, as the case may be, steel castings by casting in moulds made of sand, loam, moulding composition or other mixture of materials, or by shell moulding or by centrifugal casting and any process incidental to such production;
- (b) the production of non-ferrous castings by casting metal in moulds made of sand, loam, moulding composition or other mixture of materials, or by shell mouldings, die-casting (including pressure die-casting), centrifugal casting or continuous casting and any process incidental to such production; and the melting and casting of non-ferrous metal for the production of ingots, billets, slabs or other similar products, and the stripping thereof;
- but shall not apply with respect to –
- (a) Any process with respect to the smelting and manufacture of lead and the Electric Accumulators;
- (b) any process for the purposes of a printing works; or
- (c) any smelting process in which metal is obtained by a reducing operation or any process incidental to such operation; or
- (d) the production of steel in the form of ingots; or
- (e) any process in the course of the manufacture of solder or any process incidental to such manufacture; or
- (f) the melting and casting of lead or any lead-based alloy for the production of ingots, billets, slabs or other similar products or the stripping thereof or any process incidental to such melting, casting or stripping.
- 2. Definition** – For the purpose of this schedule -
- (a) “approved respirator” means a respirator of a type approved by the Chief Inspector.
- (b) “cupola or furnace” include a receiver associated therewith;

- (c) “dressing or fettling operations” includes stripping and other removal of adherent sand, cores, runners, risers, flash and other surplus metal from a casting and the production of reasonably clean and smooth surface, but does not include (a) the removal of metal from a casting when performed incidentally in connection with the machining or assembling of castings after they have been dressed or fettled, or (b) any operation which is knock-out operation within the meaning of this schedule;
- (d) “foundry” means those parts of a factory in which the production of iron or steel, or non-ferrous castings (not being the production of pig iron or the production of steel in the form of ingots) is carried on by casting in moulds made of sand, loan-moulding or by centrifugal casting in metal moulds line with sand or die-casting including pressure die-castings together with any part of the factory in which any of the following processes are carried on as incidental processes in connection with and in the course of, such production, namely, the preparation of moulds and cores, knock out operations and dressing or fettling operations;
- (e) “knock out operation” means all methods of removing castings from moulds, and the following operations, when done in connection therewith namely stripping coring-out and the removal of runners and risers;
- (f) “Pouring aisle” means an aisle leading from a main gangway or directly from a cupola or furnace to where metal is poured into moulds.

**3. Prohibition of use of certain materials as parting materials –**

- (1) A material shall not be used as a parting material if it is a material containing compounds of silicon calculated as silica to the extent more than 5 percent by weight of dry material.

Provided that this prohibition shall not prevent the following being used as a parting material if the material does not contain an admixture of any other silica –

- (a) Zirconium Silicate (Zircon)
- (b) Calcined china clay
- (c) Calcined aluminous fire clay
- (d) Sillimanite
- (e) Calcined or fused alumina
- (f) Olivine
- (g) Natural sand

- (2) Dust or other matter deposited from a fettling or blasting process shall not be used as a parting material or as a constituent in a parting material.

**4. Arrangement and storage –** For the purposes of promoting safety and cleanliness in workrooms the following requirements shall be observed:-

- (a) moulding boxes, loam places, ladles, patterns, pattern plates frames, boards, box weights and other heavy articles shall be so arranged and placed as to enable work to be carried on without unnecessary risk;
- (b) suitable and conveniently accessible racks, bins or other receptacles shall be provided and used for the storage of other gear and tools;
- (c) where there is bulk storage of sand, fuel, metal scrap or other materials or residues, suitable bins, bunkers or other receptacles shall be provided for the purpose of such storage.

**5. Construction of floors –**

- (1) Floors of indoor work places in which the processes are carried on other than parts which are of sand, shall have an even surface of hard material.
- (2) No part of the floor of any such indoor workplace shall be of sand except where this is necessary by reason of the work done.
- (3) All parts of the surface of the floor of any such indoor workplace which are of sand shall, so far as practicable be maintained in an even and firm condition.

**6. Cleanliness of indoor work places –**

- (1) All accessible parts of the walls of every indoor work place in which the process are carried on and of everything affixed to those wall shall be effectively cleaned by a suitable method to a height of not less than 4.2 meters from the floor, at least once in every period of 14 months. A record of carrying out of every such effective cleaning in pursuance of this paragraph including the date (which shall be not be less than 5 months or more than 9 months after the last immediately preceding washing, cleaning, or other treatment).
- (2) Effective cleaning by a suitable method shall be carried out at least once in every working day of all accessible parts of the floor of every indoor work place in which the process are carried on other than parts which are of sand; and the parts which are of sand shall be kept in good order.

**7. Manual operations involving molten metal –**

- (1) There shall be provided and properly maintained for all persons employed on manual operations involving molten metal with which they are liable to be splashed, a working space for that operation:

- (a) Which is adequate for the safe performance of the work, and
- (b) Which, so far as reasonably practicable, is kept free from obstruction.

- (2) Any operation involving the carrying by hand of a container holding molten metal shall be performed on a floor all parts of which, where any person while engaged in the operation shall be in the same level:

Provided that, where necessary to enable the operation to be performed without undue risk, nothing in this paragraph shall prevent the occasional or exceptional use of working space on a different level from the floor, being a space provided with a safe means of access from the floor or any person while engaged in the operation.

**8. Gangways and pouring aisles –**

- (1) In every workroom to which this paragraph applies constructed, reconstructed or converted for the use as such after the making of this schedule and so far as reasonably practicable, in every other workroom to which this paragraph applies, sufficient and clearly defined main engaged gangways shall be provided and properly maintained which -

- (a) Shall have an even surface of hard materials and shall, in particular not be of sand or have on them more sand than is necessary to avoid risk of flying metal from accidental spillage;
- (b) Shall be kept so far as is reasonably practicable free from obstruction;
- (c) If not used for carrying molten metal, shall be at least 920 millimeters in width;
- (d) If used for carrying molten metal shall be : -
  - (i) Where truck ladles are used exclusively at least 600 millimeters wide than the overall width of the ladle;
  - (ii) Where hand shanks are carried by not more than two men at least 920 millimeters in width.
  - (iii) Where hand shanks are carried by not more than two men at least 1.2 meters in width and
  - (iv) Where used for simultaneous travel in both directions by men carrying hand shanks at least 1.8 meters in width.

- (2) In work room to which this paragraph applies constructed, reconstructed or converted for use as such after the making of this schedule, sufficient and clearly defined pouring aisles shall be provided and properly maintained which -

- (a) Shall have an even surface of hard material and shall, in particular, not be of sand or have on them more sand than is necessary to avoid risk on flying metal from accidental spillage.
- (b) Shall be kept so far as reasonably practicable free from obstruction;
- (c) If molten metal is carried in hand ladles or bull ladles by not more than two men per ladle, shall be at least 460 millimeters wide, but where any mold alongside the aisle are more than

510 millimeters above the floor of the aisle the aisle shall be not less than 600 millimeters wide.

(d) If molten metal is carried in hand ladles or bull ladles by more than two men per ladle shall 760 millimeters wide.

(e) Molten metal is carried in crane trolley or truck ladles, shall be of a width adequate for the safe performance of the work.

(3) Requirements of sub-paragraph (1) and (2) shall not apply to any workroom or part of a workroom if, by reason of the nature of the work done therein, the floor of that workroom or, at the case may be, that part of a workroom has to be of sand.

(4) In this paragraph "workroom to which this paragraph applies means a part of a ferrous or non-ferrous foundry in which molten metal is transported or used and a workroom to which this paragraph applies shall be deemed for the purposes of this paragraph to have been constructed, reconstructed or converted for use as such after the making of this schedule if the construction, reconstruction, or conversion thereof was begun after the making of the schedule.

**9. Work near cupolas and furnaces** - No person shall carry out any work within a distance of 4 meters from a vertical line passing through the delivery end of any spot of a cupola or furnace, being a spout used for delivering molten metal or within a distance of 2.4 meters from a vertical line passing through the nearest part of any ladle which is in position at the end of such a spout, except in either case where it is necessary for the proper use of maintenance of a cupola or furnace that work should be carried out within that distance of that work is being carried out at such a time and under such conditions that there is no danger to the person carrying it out from molten metal which is being obtained from the cupola or furnace or is in a ladle in position at the end of the spout.

**10. Dust and fumes –**

(1) Open coal coke or wood fire shall not be used for heating or drying ladles inside a workroom unless adequate measures are taken to prevent so far as practicable fumes or other impurities from entering into or remaining in the atmosphere of the workroom.

(2) No open coal, coke or wood fires shall be used for drying moulds except in circumstances in which the use of such fires is unavoidable.

(3) Mould stoves, core stoves and annealing furnaces shall be so designed constructed, maintained and worked as to prevent so far as practicable, offensive or injurious fumes from entering into any workroom during any period when a person is employed therein.

(4) All knock out operations shall be carried out -

(a) in a separate part of the foundry suitably partitioned off being a room or part in which so far as is reasonably practicable, effective and suitable local exhaust, ventilation and a high standard of general ventilation are provided; or

(b) in an area of the foundry in which so far reasonably practicable, effective suitable lock exhaust ventilation is provided, or where complaints with this requirement is not reasonably practicable a high standard of general ventilation is provided.

(5) All dressing of fettling operations shall be carried out -

(a) in a separate room or in a separate part of the foundry suitably partitioned of; or

(b) in an area of the foundry set apart for the purpose; and shall, so far as reasonably practicable be carried out with effective and suitable local exhaust ventilation or other equally effective means of suppressing dust, operating as near as possible to the point of origin of the dust.

**11. Maintenance and examination of exhaust plant –**

(1) All ventilation plant used for the purpose of extracting, suppression or controlling dust or fumes shall be properly maintained.

(2) All ventilating plant used for the purpose of extracting, suppressing or controlling dust or fumes shall be examined and inspected once in every week by a responsible person. It shall be thoroughly examined and tested by a competent person at least once in every period of twelve

months and particulars of the results of every such examination and test shall be entered in an approved register which shall be available for inspection by an Inspector. Any defect found on any such examination and test shall be immediately reported in writing by the person carrying out the examination and test to the occupier or manager of the factory.

### 12. Protective equipment –

- (1) The occupier shall provide and maintain suitable protective equipment specified for the protection of workers.
  - (a) Suitable gloves or other protection for the hands for workers engaged in handling any hot material likely to cause damage to the hands by burn, scald or scar or in handling pig iron, rough castings or other articles likely to cause damage to the hands by cut or abrasion.
  - (b) Approved respirators for workers carrying out any operation creating a heavy dust concentration which cannot be dispelled quickly and effectively by the existing ventilation arrangements.
- (2) No respirator provided for the purposes of clause 1 (b) worn by a person shall be worn by another person if it has not since been thoroughly cleaned and disinfected.
- (3) Persons who for any of their time:-
  - (a) work at a spout of or attend to a cupola or furnace in such circumstances that material there from may come into contact with the body, being material at such a temperature its contact with the body would cause a burn; or
  - (b) are engaged in, or in assisting with the pouring of molten metal; or
  - (c) carry by hand or move by manual power any ladle or mould contain molten; or
  - (d) are engaged in knocking out operations involving material at such a temperature that its contact with the body would cause a burn, shall be provided with suitable footwear and gaiters which worn by them prevent so far as reasonably practicable risk of burn to his feet and ankles.
- (4) where appropriate, suitable screens shall be provided for protection against flying material (including splashes of molten metal and sparks and chips thrown off in the course of any process).
- (5) The occupier shall provide and maintain suitably accommodation for the storage and take adequate arrangements for cleaning and maintaining of the protective equipment supplied in pursuance of this paragraph.
- (6) Every person shall make full and proper use of the equipment provided for his protection in pursuance of sub-paragraph (1) and (4) and shall without delay report to the occupier manager, or other appropriate person any defect in or, loss of, the same.

### 13. Washing and bathing facilities –

- (1) There shall be provided and maintained in clean state and good repair for the use of all workers employed in the foundry-
  - (a) a wash place under cover with either –
    - (i) a trough with impervious surface fitted with a waste pipe without plug and of sufficient length to allow at least 60 centimeters for every 10 such persons employed at any one time and having a constant supply of clean water from taps or jets above the trough at intervals of not more than 60 centimeters; or
    - (ii) atleast one tap or stand pipe for every 10 such persons employed at any one time and having a constant supply of clean water, the tap or stand pipe being spaced not less than 1.2 meters apart; and
  - (b) not less than one half of the total number of washing placed provided under clause (1) shall be in the form of bath rooms.
  - (c) a sufficient supply of clean towels made of suitable material changed daily with sufficient supply of nail brushes and soap.

(2) The facilities provided for the purpose of sub-paragraph (1) shall be placed in charge of a responsible person or persons and maintained in a clean and orderly condition.

**14. Disposal of dross and skimming** – Dross and skimming removed from molten metal or taken from a furnace shall be placed forthwith in suitable receptacles.

**15. Disposal of waste** – Appropriate measures shall be taken for the disposal of all waste products from shell moulding (including waste burnt sand) as soon as reasonably practicable after the castings have been knocked-out.

**16. Material and equipment left out of doors** - All material and equipments left out of door (including material & equipment so left only temporarily or occasionally) shall be so arranged and placed as to avoid unnecessary risk. There shall be safe means of access to all such material and equipment and so far as is reasonably practicable such access so be by roadways or pathways which shall be properly maintained. Such roadways or pathways shall have a firm and even surface and shall, far as reasonably practicable be kept free from obstruction.

**17. Medical facilities and records of examination and tests.-**

(1) The occupier of the every factory to which the schedule applies shall-

(a) employ a qualified medical officer for medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the chief inspector of factories; and

(b) Provided to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a)

(2) The record of medical examination and appropriate test carried out by the said medical practitioner shall be maintain in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

**18. Medical Examination by the certifying surgeon.**

(1) Every worker employed in a laundry shall be examined by a certifying surgeon within 15 days of his first employment. Such medical examination shall be allowed to work after 15 day of his first employment in the factory unless certified fit for such employment by the certifying surgeon.

(2) Every worker employed in the said processes shall be reexamined by a certifying surgeon at least once in every 12 months. Such examination shall, wherever the certifying surgeon considers appropriate, include all the testes specified under sub-paragraph (1) except chest X-ray which will be once in three years.

(3) The certifying surgeon after examine a worker, shall issue a certificate of Fitness in Form 27. The record or examination and reexamination carried out shall be entered in the certificate and the certificate shall be kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2) including the nature and the results of the tests shall also be entered by the certifying surgeon in health register in Form 17.

(4) The certificate of Fitness and the health register shall be kept readily available for inspection by the inspector.

(5) If at any time the certifying surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternative placement facility unless he is fully in capacitated in the opinion of the certifying surgeon in which case the person affected shall be suitably rehabilitated.

(6) No person who has been found unfit to work as said in sub-paragraph (5) shall be reemployed or permitted to work in the said processes unless the certifying surgeon, after further examinations, again certified him fit for employment in those processes.



**19. Exemption-** If in respect of any factory, the Chief Inspector is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reason, all or any of the provisions of this schedule is not necessary for protection of the workers in the factory, the Chief Inspector may be a certificate in writing, which he may at his discretion revoke at any time, exempt such factory from all or any such provisions subject to such conditions, if any, as he may specify therein.

## PART -B

### Schedule I

#### Dyeing, Stenciling and Painting of Mats, Matting's and Carpets in Coir and Fibre Factories

- 1. Application** – These provision shall apply to all coir factories in which stenciling or painting of mats or matting or carpets is carried on, and to all coir and fibre factories in which dyeing of yarns (other than cotton yarns) and fibre is carried on.
- 2. Declaration of operations as dangerous** – Stenciling and painting of mats, matting and carpets and dyeing of yarns (other than cotton yarns) and fibre are declared to be dangerous operations when carried on in any coir factory.
- 3. Prohibition of employment of women and young persons** –No woman or young person shall be employed or permitted to work in any of the operations specified in clause 2.
- 4. Protective measures** – The occupier shall provide free of cost and maintain in good condition for use of all persons engaged in operations specified in clause 2:-
  - (a) Suitable rubber gloves of durable quality for both hands.
  - (b) Rubber boots of durable quality for both legs.
  - (c) Goggles.
  - (d) Any other material or appliance which in the opinion of the Chief Inspector, shall be necessary for the protection of workers.
- 5. Wearing of gloves, boots and goggles** – All persons engaged in any of the operations specified in clause 2, while at work in these processes should make use of the materials and appliances provided under clause 4.
- 6. Food and drink** –
  - (1) No food or drink shall be brought into any room in which any of the operations specified in clause 2 is carried on.
  - (2) No food or drink shall be consumed in any room in which any of the operations specified in clause 2 is carried on.
- 7. Floor of work-rooms** - The floor of every room in which any of the operations specified in clause 2 is carried, on shall be
  - (a) of cement or similar materials so as to be smooth and impervious of water;
  - (b) maintained in sound condition; and
  - (c) provided with suitable and adequate arrangements for drainage.
- 8. Washing facilities** –
  - (1) The occupier shall provide and maintain for the use of all persons employed in operations specified in clause 2, suitable washing facilities consisting of –
    - (a) A masonry or steel water tank capable of holding sufficient water and having taps at the rate of one tap for every ten persons employed at any one time. The floor around the tank and below the taps shall be cement plastered and maintained in sound and clean condition. Suitable and adequate arrangements for drainage shall be provided around the tanks and taps.
    - (b) Sufficient supply of nail brushes, soap or other suitable cleaning materials and clean towels.

(2) The facilities so provided shall be placed under the charge of a responsible person and shall be kept clean.

**9. Medical Examination –**

(1) The person so employed shall be medically examined by a Certifying Surgeon within 14 days of his first employment in such process and thereafter shall be examined by the Certifying Surgeon at intervals of not more than twelve months, and record of such examinations shall be entered by Certifying Surgeon in the Health Register in Form No.17.

(2) A Health Register in Form No.17 containing the names of all persons employed in the processes named in clause 2 shall be kept.

(3) No person after suspension shall be employed unless the Certifying Surgeon after re-examination again certifies him to be fit for employment.

**10. Exemptions -** The Chief Inspector may grant exemption from the operation of clause 4, 5, 6, 7 and 8 to the extent to which he deems suitable where he is satisfied that their observance is not necessary for safeguarding the health of the operatives.

**Schedule II**  
**Cellulose Spraying**

**1. Application -** The provisions of this schedule shall apply to all factories or parts of factories in which the spraying of cellulose, ester paints or lacquers is carried on.

**2. Prohibition of the employment of children and adolescents-** No child or adolescents shall be employed in any factory on the operations specified in paragraph 1 above.

**3. Exhaust draughts -** An efficient exhaust draught shall be provided by mechanical means for the process specified in paragraph 1. The draught shall operate on the vapour given off in the process as near as may be at the point of origin so as to prevent (as far as practicable under the atmospheric condition usually prevailing) from escaping in to the air of any place in which work is carried on. The draught shall be maintained working for a period of at least five minutes after the cessation of the operation:

Provided that the Chief Inspector may grant exemption from these provisions if he is satisfied that due to the casual nature of the operation they are not necessary to secure the health of the workers.

**4. Position of spray operators -** Arrangements shall, as far as practicable be made so as to render it unnecessary for the person operating the spray to be in a position between a ventilating outfit and the article being sprayed.

**Schedule III**  
**Graphite Powdering and Incidental Processes**

**1. Application -** The provisions of this schedule shall apply to all factories or parts of factories in which the grinding and **sizing** of graphite and the processes incidental thereto are carried on.

**2. Prohibition of employment of women, children and adolescents -** No women, child or adolescent shall be employed in any factory upon any of the operations specified in paragraph 1 above.

**3. Medical Certificate and examinations –**

(1) No person shall be employed in any factory for more than fifteen days in the year upon any of the operations specified in paragraph 1 above unless a special certificate of fitness in Form No.27, granted to him by a Certifying Surgeon appointed under Section 10, is in the custody of the manager of the factory.

(2) The Inspector of factories may require that any person in respect of whom a certificate referred to in sub-paragraph (1) has been granted shall carry with him while at work a token giving reference to such certificate.

- (3) Every person so employed shall be medically examined by a Certifying Surgeon at intervals of not more than 6 months and a record of such examinations shall be entered in the special certificate granted under sub –paragraph 1.
- (4) If at any time a Certifying Surgeon is of opinion that any person is no longer fit for employment upon any of the operations specified in paragraph 1 above he shall cancel the special certificate of fitness granted to that person.
- (5) No person whose special certificate of fitness has been cancelled shall be employed upon any of the operations specified in paragraph 1 above unless a certifying Surgeon again certifies him to be fit.
- 4. Exhaust draughts** - Provision shall be made for removing the dust produced in any of the operations specified in paragraph 1 above by means of an efficient exhaust draught so contrived as to operate on the dust as closely to the point of origin as possible:  
Provided that where the provision of an exhaust draught is not reasonably practicable the Inspector may require –
- (a) Respirators of a type approved by him to be provided and maintained in a clean and efficient condition by the occupier and worn by every person working under such conditions; and
- (b) the damping of floors, apparatus and material to prevent the raising of dust.
- 5. Floors and work-benches** – (1) The floor of every room in which any person is employed upon any of the operation specified in paragraph above shall be of cement or other impervious material.

#### Schedule IV

#### Curing, Canning or Other Processing of Fish

- 1. Application** – This schedule shall apply to all factories or parts of factories in which curing, canning or any other processing of fish including prawns, is carried on.
- 2. Housekeeping** –
- (a) Every part of the ways, works, machinery and plant and premises shall be maintained in clean and tidy condition.
- (b) Any spillage of materials shall be cleared up without delay.
- 3. Personal protective equipment** –
- (a) Suitable protective clothing shall be provided for the use of workers -
- (i) when entering the cold storage chamber, and
- (ii) when attending to processes which are wet and likely to drench the clothes worn.
- (b) The occupier shall provide for the use of all persons employed in or entering the cold storage chamber,
- (i) an adequate supply of protective equipment against low temperature, including gloves, overalls and protective footwear's, of types approved in writing by the Inspector;
- (ii) an adequate supply of protective footwear of a type approved in writing by the Inspector for the use of all persons employed in wet processes involving standing on wet floor or handling of wet articles, or washing of articles.
- (c) Arrangement shall be made for the proper and efficient cleaning of all such protective clothing, Adequate soap, free of cost, shall be made available for this purpose.
- (d) The occupier shall provide and maintain for the use of persons employed suitable accommodation for keeping the clothing not worn during working hours, and for the drying of wet clothing. The accommodation so provided shall be placed under the charge of a responsible person.
- (e) No person shall wear a protective clothing or protective footwear worn by another person.

**4. Washing facilities –**

- (1) The occupier shall provide and maintain for the use of all persons employed suitable washing facilities consisting of:-
  - (a) a trough with a smooth impervious surface fitted with a waste pipe without plug and of sufficient length to allow at least 60cm. for every ten persons employed at any one time and having a constant supply of clean water from taps or jets above the trough at intervals of not more than 60cm.; or
  - (b) at least one wash-basin for every ten persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of clean water, together with, in either case, a sufficient supply of soap or other suitable cleansing material and clean towels.
- (2) The facilities so provided shall be placed under the charge of a responsible person and shall be kept clean and in good repair.

**5. Time allowed for washing –** Before each meal and before the end of the day's work, at least ten minutes, in addition to the regular meal times, shall be allowed to each person employed in processes specified in clause 1 for washing.

**6. Food, drinks, etc., prohibited in work rooms –** No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any work room or shed in which any of the operations specified in clause 1 is carried on.

**7. Mess-rooms –** These shall be provided and maintained for the use of all persons employed in processes specified in clause 1, a suitable mess-room furnished with sufficient tables and chairs or benches.

**8. Exemption –** Where the Chief Inspector is satisfied that the observance of all or any of the provisions of this schedule are not necessary for safeguarding the health of the persons employed, he may by certificate in writing, exempt any such factory from all or any of such provisions subject to such conditions as may be specified in certificate.

**Rules under section 88****123. Notification of Accidents and Dangerous Occurrences –**

- (1) When any accident which results in the death of any person or which results in such bodily injury to any person as is likely to cause his death, or any dangerous occurrence specified in the schedule takes place in a factory, the Manager of the factory shall forthwith send a notice thereof by telephone, special messenger or telegram to the Inspector, to the Deputy Chief Inspector and the Chief Inspector.
- (2) When any accident or any dangerous occurrence specified in the schedule, which results in the death of any person or which results in such bodily injury to any person as is likely to cause his death, takes place in a factory, notice as mentioned in sub-rule (1) shall be sent also to:-
  - (a) The District Magistrate or Sub divisional Officer
  - (b) The Officer-in-charge of the nearest police station, and
  - (c) The relatives of the injured or deceased person.
- (3) Any notice given as required under sub-rule (1) and (2) shall be confirmed by the Manager of the factory to the authorities mentioned in those sub-rules within 12 hours of the accident or the dangerous occurrence by sending them a written report in Form 18 in the case of an accident or dangerous occurrence causing death or bodily injury to any person and Form 18-A in the case of a dangerous occurrence which has not resulted in any bodily injury to any person.
- (4) When any accident or dangerous occurrence specified in the schedule takes place in a factory and it causes such bodily injury to any person as prevents the person injured from working for a period of 48 hours or more immediately following the accident or the dangerous occurrence, as the case may be, the manager of the factory shall send a report thereof to the Inspector, the

Deputy Chief Inspector and the Chief Inspector in Form 18 within 24 hours after the expiry of 48 hours from the time of the accident or the dangerous occurrence:

Provided that if in the case of an accident or dangerous occurrence death occurs of any person injured by such accident or dangerous occurrence after the notices and reports referred to in the foregoing sub-rules have been sent, the manager of the factory shall forthwith send a notice thereof by telephone, special messenger or telegram to the authorities and persons mentioned in sub-rules (1) and (2) and also have this information confirmed in writing within 12 hours of the death:

Provided further that, if the period of disability from working for 48 hours or more referred to in sub-rule (4) does not occur immediately following the accident, or the dangerous occurrence, but later or occurs in more than one spell, the report referred to shall be sent to the Inspector, the Deputy Chief Inspector and the Chief Inspector in the prescribed Form 18 within 24 hours immediately following the hour when the actual total period of disability from working resulting from the accident or the dangerous occurrence becomes 48 hours.

### SCHEDULE

The following classes of dangerous occurrence whether or not they are attended by personal injury or disablement:-

- (a) Bursting of a plant used for containing or supplying steam under pressure greater than atmospheric pressure.
- (b) Collapse or failure of a crane, derrick, winch, hoist or other appliances used in raising or lowering persons or goods or any part thereof, or the over-turning of a crane.
- (c) Explosion, fire, bursting out, leakage or escape of any molten metal, or hot liquor or gas causing bodily injury to any person or damage to any room or place in which persons are employed, or fire in rooms of cotton-pressing factories when a cotton-opener is in use.
- (d) Explosion of a receiver or container used for the storage at a pressure greater than atmospheric pressure of any gas or gases (including air) or any liquid or solid resulting from the compression of gas.
- (e) Collapse or subsidence of any floor, gallery, roof, bridge, tunnel, chimney, wall, building or any other structure.

### Rules under Sub-Section (1) of Section 89

- 124. Notice of poisoning or disease-** A notice in Form No.19 should be sent forthwith both to the Chief Inspector and to the Certifying Surgeon by the Manager of factory in which there occurs a case of lead, phosphorus, mercury, manganese, arsenic, carbon disulphide, or benzene poisoning or poisoning by nitrous fumes, or by halogens or halogen derivative of the hydro-carbons of the aliphatic series; of chrome ulceration, anthrax, silicosis, toxic anemia, toxic jaundice, primary epitheliomatous cancer of the skin, or pathological manifestations due to radium or other radioactive substance or X-rays.

**CHAPTER X  
SUPPLEMENTAL**

**Rule under Sub-Section (1) of Section 107**

**125. Procedure in appeals–**

- (1) An appeal presented under section 107 shall lie to the Chief Inspector, or in cases where the order appealed against is an order passed by that officer, to the State Government or to such authority as the State Government may appoint in this behalf and shall be in the form of a memorandum setting forth concisely the grounds of objection to the order and bearing court-fees stamp in accordance with Article VI of the Schedule II to the Travancore-Cochin Court Fees Act, 1125 (Act 11 of 1125) or Article II of Schedule II to the Court fees Act, 1870 as the case may be and shall be accompanied by a copy of the order appealed against.
- (2) On receipt of the memorandum of appeal, the appellate authority shall, if it thinks fit or if the appellant has requested that the appeal should be heard with the aid of assessors, call upon the body declared under rule (3) to be representative of the Industry concerned to appoint an assessor within a period of 14 days. If an assessor is nominated by such body, the appellate authority shall appoint a second assessor itself. It shall then fix a date for the hearing of the appeal and shall give due notice of such date to the appellant and to the Inspector whose order is appealed against and shall call upon the two assessors to appear upon such date to assist in the hearing of the appeal.
- (3) (i) The appellant shall state in the memorandum presented under sub-rule(i) whether he is a member of one or more of the following bodies :-

1. The Travancore Chamber of Commerce
2. The Alleppey Chamber of Commerce
3. The Trivandrum Chamber of Commerce
4. The Travancore Combined Planters Association.
5. The Central Travancore Planters' Association
6. The India Planters' Association of Kerala.
7. The Kannan Devan Planters' Association
8. The India Tea Planters' Association
9. The Mundakayam Planters' Association
10. The Association of Planters of Travancore
11. South India Cashewnut Manufacturers' Association
12. The Travancore Coir Mats and Matting Manufacturers' Association, Alleppey.
13. The Oil Mill Owners' Association, Alleppey,
14. The Cochin Chamber of Commerce.
15. The India Chamber of Commerce, Mattancherry.
16. The United Planters' Association of Southern India.
17. The Oil Merchants' Association, Cochin
18. The Merchants' Association, Trichur
19. The Calicut Chamber of Commerce
20. The Malabar Chamber of Commerce
21. The West Coast Industrialists Association, Kozhikode.
22. The India Cashew Exporters Association, Quilon.

(ii) The body empowered to appoint the assessor shall -

- (a) if the appellant is a member of one of such bodies, be that body;

- (b) if he is a member of two such bodies, be the body which the appellant desires should appoint such assessor; and
  - (c) if the appellant is not a member of any of the aforesaid bodies or if he does not state in the memorandum which of such bodies he desires should appoint the assessor, be the body which appellate authority considers as the best fitted to represent the industry concerned.
- (4) An assessor appointed in accordance with the provisions of sub-rules (2) and (3) shall receive for the hearing of the appeal, a fee to be fixed by the appellate authority, subject to a maximum of fifty rupees per diem. He shall also receive the actual traveling expenses. The fees and traveling expenses shall be paid to the assessors by Government, but where the assessors have been appointed at the request of the appellant and the appeal has been decided wholly or partly against him the appellate authority may direct that the fees and traveling expenses of the assessors shall be paid in whole or in part by the appellant.

### Rule under Sub-Section (1) of Section 108

- 126. Display of notices** – The abstract of the Act and of the Rules required to be displayed in every factory shall be in Form No.20

### Rule under Section 110

- 127. Returns** – The Manager of every factory shall furnish to the Chief Inspector or other officers appointed by the State Government in this behalf the following returns, namely:-
- (1) Annual return – On or before the 31<sup>st</sup> January of each year, in Form No.21 to the Chief Inspector of Factories with a copy to the Director of Statistics.
  - (2) Half yearly returns – One or before 31<sup>st</sup> July of each year in Form No.22, with a copy to the Director of Statistics.
  - (3) Return of closure – Any intended closure of the factory or any section or department thereof immediately it is decided to do so in Form 32 to the Chief Inspector and the Inspector. Information as to the particulars and quantity and stored chemicals and action taken or proposed to be taken to ensure safety from those chemicals while in storage during such closure shall also be furnished along with the report of intended closure. An intimation should also be sent to the Chief Inspector and inspector as soon as the Factory or the section or department of the factory, as the case may be starts working again.

In the case of a factory in which work is carried on only during certain period of periods of the year, the manager shall, if so required by the State Government or if the State Government so directs, through the Chief Inspector, submit the annual or half yearly returns within fifteen days after the close of that period or after the close of the last of those periods in the year as the case may be.

### Rule under Section 109

- 128. Service of notice** – The dispatch by Post under registered cover of any notice or order shall be deemed sufficient service on the occupier, owner or manager of a factory of such notice or order.

**Rules 129 to 134 under Section 112**

**129. Information required by the Inspector** – The occupier, owner or manager of a factory shall furnish any information that an Inspector may require for the purpose of satisfying himself whether any provision of the Act has been complied with or whether any order of an Inspector has been duly carried out. Any demand by an Inspector for any such information, if made during the course of an inspection, shall be complied with forthwith if the information is available in the factory, or, if made in writing shall be complied with within seven days of receipt thereof.

**129A. Permissible levels of certain chemical substance in work environment** – Without prejudice to the requirements in any other provisions in the Act or the rules, the requirements specified in this Schedule shall apply to all factories.

**Schedule**

**1. Definitions** – For the purpose of this Schedule -

- (a) “mg/m<sup>3</sup>” means milligrams of a substance per cubic metre of air;
- (b) “mppcm” means million particles of a substance per cubic metre of air;
- (c) “ppm” means parts of vapour or gas per million parts of air by volume at 25<sup>0</sup>C and 760mm of mercury pressure;
- (d) “Time weighted average concentration” means the average concentration of a substance in the air at any work location in a factory computed from evaluation of adequate number of air samples taken at that location, spread over the entire shift on any day, after giving weighted to the duration for which each such sample is collected and the concentration prevailing at the time of taking the sample.

$$\text{Time weighted average concentration} = \frac{C_1T_1 + C_2T_2 + \dots + C_nT_n}{T_1 + T_2 + \dots + T_n}$$

C<sub>1</sub> represents the concentration of the substance for duration T<sub>1</sub> (in hours);

C<sub>2</sub> represents the concentration of the substance for duration T<sub>2</sub> (in hours); and C<sub>n</sub> represents the concentration of the substance for duration T<sub>n</sub> (in hours);

- (e) “Work location” means a location in a factory at which a worker works or may be required to work at any time during any shift on any day.

**2. Limits of concentrations of substances at work locations** –

- (1) The time-weighted average concentration of any substance listed in table 1 or 2 of the schedule, at any work location in a factory during any shift on any day shall not exceed the limit of the permissible time-weighted average concentration specified in respect of that substance; Provided that in the case of a substance mentioned in Table 1 in respect of which a limit in terms of short term maximum concentration is indicated, the concentration of such a substance may exceed the permissible limit of the time-weighted; average concentration for the substance for short periods not exceeding 15 minutes at a time subject to the condition that-
  - (a) such periods during which the concentration exceeds the prescribed time weighted average concentration are restricted to not more than a 4 per shift;
  - (b) the time interval between any two such periods of higher exposure shall not be less than 60 minutes; and
  - (c) at no time the concentration of the substance in the air shall exceed the limit of short term maximum concentration.
- (2) In the case of any substance given in Table 3, the concentration of the substance at any work location in a factory at any time during any day shall not exceed the limit of exposure for that substance specified in the Table.
- (3) In the cases where the word “Skin” has been indicated against certain substance mentioned in Tables 1 and 3, appropriate measures shall be taken to prevent absorption through cutaneous



routes particularly skin, mucous membranes, and eyes as the limits specified in these Tables are for conditions where the exposure is only through respiratory tract.

- (4) (a) In case, the air at any work location contains a mixture of such substances mentioned in Tables 1, 2, or 3, which have similar toxic properties, the time-weighted concentration of each of these substances during the shift should be such, that when these time-weighted concentration divided by the respective permissible time weighted average concentration specified in the above mentioned Tables, and the fractions obtained are added together, the total shall not exceed unity,

$$\text{i.e. } \frac{C_1 + C_2 + \dots + C_n}{L_1 + L_2 + \dots + L_n} \text{ should not exceed unity}$$

When  $C_1, C_2, \dots, C_n$  are the time-weighted concentration of toxic substances 1,2,.....and n respectively, determined after measurement at work location;

And  $L_1, L_2, \dots, L_n$  are the permissible time-weighted average concentration of the toxic substance 1,2,.....and n respectively.

- (b) in case the air at any work location contains a mixture of substances, mentioned in Table 1,2, or 3 and these do not have similar toxic properties, then the time weighted concentration of each of these substances shall not exceed the permissible time weighted average concentration specified in the above mentioned Tables, for that particular substance.
- (c) The requirement in clauses (a) and (b) shall be in addition to the requirements in paragraphs 2 (1) and 2(2).

**3. Sampling and evaluation procedures –**

- (1) Notwithstanding provisions in any other paragraphs, the sampling and evaluation procedures to be adopted for checking compliance with the provisions in the schedule shall be as per standard procedures in vogue from time to time.
- (2) Notwithstanding the provisions in paragraph 5, the following condition regarding the sampling and evaluation procedures relevant to checking compliance with the provisions in this Schedule are specified :-
- (a) For determination of the number of particles per cubic metre in item 1 (a) (i) (1) in Table 2, samples are to be collected by standard or midget impinger and the counts made by light-field technique.
- (b) The percentage of quartz in the 3 formulae given in item 1 (a) (i) of Table 2 is to be determined from airborne samples.
- (c) For determination of number of fibres as specified in item 2(a) of Table 2, the membrane filter method at 430 x magnification (94mm objective) with phase contrast illumination should be used.
- (d) Both for determination of concentration and percentage of quartz for use of the formulae given in item 1(a) (i) (2) of Table 2, the fraction passing through a size selector with the following characteristics should only be considered.

Aerodynamic diameter (Unit density sphere)	Percentage allowed by size-selector
2.0	90
2.5	75
3.5	50
5.0	25
10.0	00

**4. Power to require assessment of concentration of substances –**

- (1) An Inspector may, by an order in writing, direct the occupier or manager of a factory to get before any specified date, the assessment of the time-weighted average concentration at any work location of any of the substances mentioned in Tables 1,2 or 3 carried out.
- (2) The results of such assessment as well as the method followed for air sampling and analysis for such assessment shall be sent to the Inspector within 3 days from the date of completion of such assessment and also a record of the same kept readily available for inspection by an Inspector.

- 5. Exemption –** If in respect of any factory or a part of a factory, the Chief Inspector is satisfied that, by virtue of the pattern of working time of the workers at different work locations or on account of other circumstance, no worker is exposed, in the air at the work locations, to a substance or substances specified in Tables, 1,2, or 3 to such an extent as is likely to be injurious to his health, he (the Chief Inspector) may by an order in writing, exempt, the factory or a part of the factory from the requirements in paragraph 2, subject to such conditions, if any, as he may specify therein.

**TABLE – 1**

<i>Substance</i>	<i>Permissible limits of exposure</i>			
	<i>Time-weighted average concentration</i>		<i>Short-term Maximum concentration</i>	
	<i>ppm</i>	<i>mg/m<sup>3</sup></i>	<i>ppm</i>	<i>mg/m<sup>3</sup></i>
Acetic acid	10	25	15	37
Acrolein	0.1	0.25	0.3	0.8
Aldrin-sin	--	0.25	--	0.75
Ammonia	25	18	35	27
Aniline-skin	2	10	5	20
Anisidine (O-pisomers)-skin	0.1	0.5	--	--
Arsenic & Compound (as As)	--	0.2	--	--
Benzene	10	30	--	--
Bromine	0.1	0.7	0.3	2
2 Butanone (Methlohyl ketone MEK)	200	590	300	885
n-Butyl acetate	150	710	200	950
Sec/tert. Butyl acetate	200	950	250	1190
Cadmium-dust and salts (as Cd)	--	0.05	00	0.2
Calcium oxide	--	2	--	--
Carbaryl (Sevin)	--	5	--	10
Carbofuran (Furadan)	--	0.1	--	--
Carbon disulfide-skin	20	60	--	--
Carbon Monoxide	50	55	400	440
Carbon tetrachloride-skin	10	65	20	130
Carbonyl chloride(Phosgene)	0.1	0.4	--	--
Chlordane-skin	--	0.5	--	2
Chlorebenzene (Mono chlorbenzene)	75	350	--	--
Chlorine	1	3	3	9
bis-Chloromethy ether	0.001	--	--	--
Chromic acid and chromets (as Cr)	--	0.05	--	--
Chromium Sel. Chromic, Chromous salts (as Cr)	0.5	--	--	--
Copper fume	--	0.2	--	--
Cotton dust, raw	--	0.2	--	0.6

<i>Substance</i>	<i>Permissible limits of exposure</i>			
	<i>Time-weighted average concentration</i>		<i>Short-term Maximum concentration</i>	
	<i>ppm</i>	<i>mg/m<sup>3</sup></i>	<i>ppm</i>	<i>mg/m<sup>3</sup></i>
Cresol, all isomers-skin	5	22	--	--
Cyanides (as CN)-skin	--	5	--	--
Cyanogen	10	20	--	--
DDT (Dichlorodiphenyl trichloroethane)	--	1	--	3
Demeton-skin	0.01	0.1	0.03	0.3
Diazinon-skin	--	0.1	--	0.3
Dibutyl phthalate	--	5	--	10
Dichlorves (DDVP)-skin	0.1	1	0.3	3
Dieldrin-skin	--	0.25	--	0.75
Dinitrobenzene (all isomers)- skin	0.15	1	0.5	3
Dinitrotoluene-skin	--	1.5	--	5
Diphenyl	0.2	1.5	0.6	4
Endosulfan (Thiodan) – skin	--	0.1	--	0.3
Endrin-skin	--	0.1	--	0.3
Ethyl acetate	400	1000	--	--
Ethyl alcohol	1000	1900	--	--
Ethyl amine	10	18	--	--
Flourides (as F)	--	2.5	--	--
Flourine	1	2	2	4
Hydrogen Cyanide-skin	10	11	15	16
Hydrogen Sulfide	10	15	15	27
Iron Oxide Fume (Fe <sub>2</sub> , O <sub>2</sub> as Fe)	--	5	--	10
Isoamyl acetate	100	525	125	655
Isoamyl alcohol	100	360	125	450
Isobutyl alcohol	50	150	75	225
Lead, inorg, fumes and dusts (as pb)	--	0.15	--	0.45
Lundane-skin	--	0.5	--	1.5
Malathion-skin	--	10	--	--
Manganese fume (as Mn)	--	1	--	3
Mercury (alkyl compounds)skin (as Hg)	0.001	0.01	0.003	0.03
Methyl alcohol (Methanol)-skin	200	260	250	310
Methyl cellosolve-skin (2-methoxy ethanol)	25	80	35	120
Methyl isobutyl Ketone-skin	100	410	125	510
Napthalene	10	50	15	75
Nickel carbonyl (as Ni)	0.05	0.35	--	--
Nitric acid	2	5	4	10
Nitric Oxide	25	30	35	45
Nitrobenzene-skin	1	5	2	10
Oil mist-mineral	--	5	--	10
Parathion-skin	--	0.1	--	0.3
Phenel-skin	5	19	10	38
Phorate (Thimet)-skin	--	0.05	--	0.2
Phosgene (Carbonyl chloride)	0.1	0.4	--	--
Phosphine	0.3	0.4	1	1

Substance	Permissible limits of exposure			
	Time-weighted average concentration		Short-term Maximum concentration	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Phosphorous (yellow)	--	0.1	--	0.3
Phosphorous pentachloride	--	1	--	3
Phosphorous trichloride	0.5	3	--	--
Picric acid-skin	--	0.1	--	0.3
Pyridine	5	15	10	30
Silane (Silicon tetra hydride)	0.5	0.7	1	1.5
Styrene, monomer (phenylethylene)	100	420	125	525
Sulfur dioxide	5	13	--	--
Sulfuric acid	--	1	--	--
Toluene (toluol)-skin	100	375	150	560
O-Toludine	5	22	10	44
Trichloroethylene	100	535	150	800
Vinyl chloride	5	10	--	--
Welding fumes (Noc)	--	5	--	--
Xylene (o-m-p-isomers)-skin	100	435	150	655

TABLE - 2

Substance	Permissible Time-weighted average concentration
1 Silica	
(a) Crystalline	
(i) Quartz	
(1) In terms of dust count	$\frac{1060}{\% \text{ Quartz} + 10}$ mppcm
(2) In terms of respirable dust	$\frac{10}{\% \text{ respirable quartz} + 2}$ mg/m <sup>2</sup>
(3) In terms of total dust	$\frac{30}{\% \text{ quartz} + 3}$ mg/m <sup>3</sup>
(ii) Cristobalite	Half the limits given against quartz
(iii) Tridymite	Half the limits given against quartz
(iv) Silica fused	Same limit as for quartz
(v) Trippoli	Same limit as in formula in item 2 given against quartz.
(b) Amorphous	705 mppcm
2 Silicate having less than 1% free silica by weight	
(a) Asbestos (fibre longer than 5microne) 2fibre per cubic centimeter.	
(i) Amosite	0.5 fibre/cubic centimeter
(ii) Chrysotile	2 fibres/cubic centimeter
(iii)Crocidolite	0.2 fibre/cubic centimeter
(iv)Other form	2 fibres/cubic centimeter

- (b) Mica 705 mppcm
  - (c) Mineral wool fibre 10 mg/m<sup>3</sup>
  - (d) Porlite 1060 mppcm
  - (e) Portlant cement 1060 mppcm
  - (f) Soap stone 705 mppcm
  - (g) Talc (monabostiform) 705 mppcm
  - (h) Talc (fibrous) Same limit as for asbestos
  - (i) Tromolite Same limit as for asbestos
- 3 Coal Dust
- (1) For airborne dust having less than 5% Silicon dioxide by weight 2 mg/m<sup>3</sup>
  - (2) For airborne dust over 5% silicon dioxide Same limit as prescribed by formula in item (2) against quartz

**TABLE - 3**

Substance	Permissible limit of exposure	
	ppm	mg/m <sup>3</sup>
Acetic anhydride	5	20
O-Dichlorobenzene	50	300
Formaldehyde	2	3
Hydrogen Chloride	5	7
Manganese and Compounds (as Mn)	--	5
Nitrogen dioxide	5	9
Nitroglycerin-skin	0.2	2
Potassium hydroxide	--	2
Sodium hydroxide	--	2
2,4,6, Trinitrotoluene (TNT)	--	0.5

**130. Muster Roll.-** The manager of every factory shall maintain a muster roll of the workers employed in the factory in Form No. 25 showing (a) the name of each worker, (b) the nature of his work, (c) the daily attendance of the worker, and (d) date of entry into service:

Provided that, if the daily attendance is noted in the register of adult workers in Form No. 12, or the particulars required under this rule are noted in any other register, a separate muster roll required under this rule need not be maintained.

**131. Register of accidents and dangerous occurrences.-** The manager of every factory shall maintain a Register of all accidents and dangerous occurrences which occur in the factory in Form No. 26 showing the-

- (a) Name of injured persons (if any),
- (b) Date of accident or dangerous occurrence
- (c) Date of report on Form No. 18 to Inspector
- (d) Nature of accident or dangerous occurrence
- (e) Date of return of injured person to work.
- (f) Number of days of absence from work of injured person.

- 132. Maintenance of Inspection Book.-** The manager of every factory shall maintain a bound inspection book containing the following particulars and shall produce it when so required by the Inspector or Certifying Surgeon-
- The exemptions granted or availed of by the factory in Form No. 33,
  - The particulars of rooms in the factory in Form No. 35, and
  - The particulars of lime-washing, colour-washing, painting, varnishing or tarring as the case may be, in Form No.7
- 133. Particulars of rooms.-** The particulars of measurement of each room in the factory in which workers are employed shall be entered in Form No. 35
- 134. Posting of certain notice in work rooms.-**
- The Maximum number of workers who may be employed in each work-room or work-hall shall be posted prominently by means of a notice painted on the internal wall in each such room or hall. When determining the maximum number of persons permissible in addition to the breathing space required to be provided by section 16 (2), floor space of 25 square feet in the case of existing factories and 36 square feet in factories built after the commencement of the Act, shall also be provided for each worker working at any one time in the room, but such floor space shall be exclusive of the space occupied by machinery, fixtures and materials in the room.
  - The Chief Inspector may for reasons to be recorded in writing relax the provisions of this rule to such extent as he may consider necessary wherein his opinion, such relaxation can be made having regard to the health of the persons employed in any room.

#### Rules 135 to 206 under section 87, relating to Chemical works

- 135. Application.-** Rules 135 to 206 shall be in addition to and not in derogation of any provisions of the Factories Act or any other Rule made there under or of any other Act or Rules. Rules 138 to 198 shall apply to all the works in Schedule 1 carried on in chemical works, or as incidental processes to the manufacturing processes in such chemical works, and Rules 199 to 206 shall apply to certain works and parts thereof in chemical works specified in Rule 199.
- 136. Definitions.-** Chemical works means any factory or such parts of any factory as are named in Schedule 1 to these Rules.
- “Breathing apparatus” means
- a helmet of face piece with necessary connections by means of which a person using it in a poisonous, asphyxiating or irritant atmosphere breathes ordinary air, or
  - any other suitable apparatus approved in writing by the Chief Inspector.
- “Life-belt” means a belt made of leather or other suitable material which can be securely fastened round the body, with a suitable length of rope attached to it, each of which is sufficiently strong to sustain the weight of a man.
- “Efficient exhaust draught” means localized ventilation effected by mechanical or other means for the removal of gas, vapour, fume or dust to prevent it from escaping into the air of any place in which work is carried on.
- “Surgeon” means a Certifying Surgeon appointed under section 10 of the Factories Act, 1948.
- “Suspension” means suspension by written certificate in the Health Register, signed by the Surgeon from employment in any process mentioned in the certificate.
- “Bleaching powder” means the bleaching powder commonly called chloride of lime.
- “Chlorate” means chlorate or perchlorate.

“Caustic” means hydroxide of potassium or sodium.

“Caustic pot” means a metal pot fixed over a furnace or flue and surrounded by brickwork such as is commonly used for concentrating caustic liquor, whether such pot be used for concentrating or boiling caustic or other liquor.

“Chrome process” means the manufacture of chromate or bichromate of potassium or sodium., or the manipulation, movement or other treatment of these substances in connection with their manufacture.

“Nitro or amino process” means the manufacture of nitro or amino derivatives of phenol and of benzene or its homologues, and the making of explosives with the use of any of these substances.

- 137. Exceptions.-** If the Chief Inspector is satisfied in respect of any factory or any process that, owing to the special conditions or special methods of work, or by reasons of the infrequency of the process or for other reasons all or any of the requirements of Rules 138 to 206 are not necessary for the protection of persons employed in any factory or process, he may be order in writing (which he may in his discretion revoke) exempt such factory or process from all or any of the provisions of the said Rules, subject to such conditions as he may be such order prescribe.

### General – Rules 138 to 152

**138. Housekeeping.-**

- (a) Every part of the ways, works, machinery and plant shall be maintained in a clean and tidy condition.
- (b) Any spillage of materials shall be cleaned up without delay.
- (c) Floors, platforms, stairways, passage and gangways shall be kept free of temporary obstructions.
- (d) There shall be provided easy means of access to all parts of the plant of facilitate cleaning, maintenance and repairs.

**139. Improper use of chemicals.-**

- (a) No chemicals or solvents shall be used by workers for any purposes apart from the processes for which they are supplied.
- (b) Worker shall be instructed on the possible dangers arising from such misuse. These instructions shall further be displayed in bold letter in prominent places in the different sections.

- 140. Storage of food. -** No food, drink, tobacco, pan or similar article shall be stored or consumed on or near any part of the plant.

- 141. Testing.-** Workers shall be instructed on the possible danger arising from the testing of materials or of the use for drinking purposes of any vessel used in, or in connection with the manufacture of chemicals. These instructions shall further be displayed in bold letters in prominent places in the different sections.

**142. Process hazards.-**

- (a) Before commencing any large-scale experimental work, or any new manufacture, all possible steps shall be taken to ascertain definitely all the hazards involved both from the actual operations and the chemical reactions. The properties of the raw materials used, the final products to be made, and any by-products arising during manufacture shall be carefully studied and provisions shall be made for dealing with any hazards including effects on workers which may arise during manufacture.

The design of the buildings and plant shall be based on the information so obtained. Where necessary, advice shall be obtained from the Chief Inspector of Factories on measures to be taken in this regard.

- (b) Information in writing, giving details of the process, its hazards and the steps taken or proposed to be taken for the safety of workers as in (a) above should be sent to the Chief Inspector before commencing manufacture, handling or storage of any of the items covered under Schedule I, whether on experimental, pilot, plant or large scale basis.
- 143. Unauthorized personnel.-** Unauthorized persons shall not be permitted to entry any section of the factory or plant where there are special dangers.
- 144. Visitors.-** Visitors shall be provided, where necessary, with suitable safety equipment and shall be accompanied round dangerous plant by a responsible official.
- 145. Instruments.-** All instruments such as pressure gauges, thermometer, flow meters and weighing machines shall be tested at regular intervals by a competent person, and record of these tests shall be kept in a register.
- 146. Cocks and valves.-** Suitable valves shall be provided in all service lines at sufficiently short intervals for convenience in blanking off etc. All rocks and valves shall be operated at least once a month and tested periodically by a competent person, and record of these test, shall be kept in a register. A plan of all service installations shall be kept readily available for perusal.
- 147. Manholes.-** No manhole shall be opened for entry unit effective fencing has been erected round it.
- 148. Emergency instructions.-** Simple and special instructions shall be framed to ensure that effective measures will be carried out in cases of emergency, to deal with escapes of inflammable, poisonous or deleterious gases, vapours, liquids or dusts, These instructions shall further be displayed in bold letters in prominent places in the different sections. All workers shall be trained and instructed in the action to be taken in such emergencies, and in the general hazards of their employment.
- 149. Protection of certain mixtures.-** Suitable arrangements shall be made to ensure that no foreign matter of any sort can fall into reaction mixtures.
- 150. Electrical apparatus.-** Electrical plant, fittings and conductors shall, if exposed to a damp or corrosive atmosphere, be adequately protected, Periodic tests shall be carried out on all circuits.
- 151. Place of work.-**
- (a) Workers shall only be allowed in those places in which they have been given orders to work.
- (b) In dangerous sections of a factory, the number of workers shall be kept to a minimum compatible with the process.
- 152. Packing, storage and transport of chemicals.-** Chemicals shall be packed and stored in containers suitable for the purpose of adequate strength for storage or transport. All such containers shall be labeled so that they will be stored and transported in such a manner as to ensure that, in the event of a spillage, they will neither produce a reacting mixture, nor cause the development of toxic or fire risks in contact with other products in its vicinity, or with walls, floors, or dust thereon.



**Fire and Explosion Risks - Rules 153 to 171**

- 153. Site.-**Building and plant shall be sited with due regards to the dangers which may arise from the process involved, and in particular shall be spaced to distances which are deemed safe for the fire and explosive risks connected with the processes in adjacent buildings. Due consideration shall be given to the effect of any process carried out in adjacent factories.
- 154. Isolation of building.-** Where special dangers exist, separate buildings shall be used for the different parts of a process. They shall be spaced at sufficient distance apart and shielded to prevent damage to each other in the event of fire or explosion, and shall be safeguarded by the provision of suitable blowout panels or roofs. Where the risk of fire or explosion is considerable, the buildings shall be divided by ballast or protective screen walls.
- 155. Fire resistance.-** No combustible materials shall be used in the erection of working buildings, unless there are special reasons necessitating their use, when they shall be rendered fire-resistant. The roof shall be of light fire-resistant construction and floors shall be of impervious fire resistant material and shall be regularly maintained in such condition.
- 156. Dangers of ignition (including lighting installation)-**
- No internal combustion engine, and no electric motor or other electric equipment capable of generating sparks or otherwise causing combustion shall be installed or used in a building or danger zone. Electric conductor shall be fitted with screwed steel conduit.
  - All hot exhaust pipes shall be installed outside a building and other hot pipes shall be suitably protected.
  - Portable electric hand lamps shall not be used unless of an intrinsically safe type, and portable electric tools connected by flexible wires shall not be used, unless of the flameproof type
  - Where an inflammable atmosphere may occur the soles of footwear worn by workers shall have no metal on them, and the wheels of trucks or conveyors shall be of non-conducting non-sparking materials. Adequate precautions shall be taken to prevent the ignition of explosive or inflammable substances by sparks emitted from locomotive or other vehicles operated in the factory or on public lines.
  - No electric arc lamp, or naked light, fixed or portable, shall be used, and no person shall have in his possession any match or any apparatus of any kind for producing a naked light or spark in or on, or about any part of the factory where there is liability to fire or explosion from inflammable gas, vapour or dust and all incandescent electric light in such parts shall be in double air tight glass covers.
  - Prominent notices in the language understood by the majority of the workers and legible by day and by night, prohibiting smoking, the use of naked lights, and the carrying of matches or any apparatus for producing a naked light or spark, shall be affixed at the entrance of every room or place where there is the risk of fire or explosion from inflammable gas, vapour or dust. In the case of illiterate workers, the contents of the notice shall be fully and carefully explained to them when they commence work in the factory for the first time and again when they have completed one week at the factory.
- 157. Non-sparking tools.-** A sufficient supply of spades, scrapes and pails made from non-sparking material shall be provided for the use of persons employed in cleaning out or removing residues from any chamber, still or other vessel where an inflammable or explosive danger may occur (Note – the risk is not always obvious and may arise, for example, through the production of hydrogen in acid tanks)

**158. Static electricity.**

- (a) All machinery and plant, particularly pipe lines and belt drives, on which static electricity is likely to accumulate, shall be effectively earthed. Receptacles for inflammable liquids shall have metallic connections to the earthed supply tanks to prevent static sparking. Where necessary, humidity shall be controlled.
- (b) Mobile tank wagons shall be earthed during filling and discharge, and precautions shall be taken to ensure that earthing is effective before such filling or discharge takes place.

**159. Lightning condition.-** Lightning protection apparatus shall be fitted where necessary, and shall be maintained in good condition.**160. Process heating .-** The method providing heat for a process shall be as safe as possible and where the use of naked flame is necessary, the plant shall be so constructed as to prevent any escaping inflammable gas, vapour or dust coming into contact with the flame , or exhaust gases, or other hot agency likely to cause ignition. So far as practicable, the heating medium shall be automatically controlled at a pre-determined temperature below the danger temperature.**161. Escape of materials.-**

- (a) Provision shall be made in all plant, sewers, drains , flues, ducts, culverts and buried pipes to prevent the escape and spread of any liquid, gas, vapour, fume or dust likely to give rise to fire or explosion, both during normal working and in the event of accident or emergency.
- (b) If escape occurs, such substances shall be removed expeditiously and efficiently at the point of liberation. The effluent shall be trapped and rendered safe outside the danger area.

**162. Leakage of inflammable liquids.-**

- (a) provision shall be made to confine by means of bund walls, sumps, etc. possible leakage from vessels containing inflammable liquids.
- (b) Adequate and suitable fixed fire fighting appliances shall be installed in the vicinity of such vessels

**163. Cleaning of empty containers.-**All empty containers which have held inflammable liquids , and metal containers which have held sulphuric acid be rendered permanently safe as soon as practicable, and shall not be repaired or destroyed until such cleaning has been completed.**164. Storage of combustible materials.**

- (a) Combustible and inflammable materials shall not be stores in close proximity to chemicals which are liable to cause ignition.
- (b) Rubbish shall be removed from building without delay and places in special metal containers provided with close lifting lids. The contents shall be removed daily and suitably dealt with. Waste products containing inflammable or explosive materials shall not be placed on rubbish heaps but shall be destroyed in an appropriate manner.

**165. Installing of pipe lines for inflammable liquids.-** All pipe lines for the transport of inflammable liquids shall be protected from breakage, shall be arranged so that there is no risk of mechanical damage from vehicles, and shall be so laid that they drain throughout without the collection of deposits at any part. All Flanged joints, bends and other connections shall be regularly inspected. Cocks and valves shall be so constructed that explosive residues cannot collect therein. The open and closed positions of all cocks and valves shall be clearly indicated on the outside.**166. Packing of reaction vessels.-** Packing and jointing materials for reaction vessels(including covers, manhole covers, and exhaust pipes ) and in pipe lines and high or low temperature insulating materials shall not contain materials which are combustible or which react with the products of the plant

- 167. Safety valves.-** Every still and every closed vessel in which gas is evolved or into which gas is passed, and in which the pressure is liable to rise to dangerous degree, shall have attached to it a pressure gauge, and a proper safety valve or other equally efficient means to relieve the pressure, maintained in good condition. Nothing in these Rules shall apply to metal bottles or cylinders used for the transport of compressed gases.
- 168. Vigorous or delayed reactions.-** Suitable provision, such as automatic and distant control shall be made for controlling the effects of unduly vigorous or delayed reactions. Automatic flooding or blanketing shall be provided for in the event of an accident.
- 169. Examinations, testing and repair of plant.-** Examination, testing and repair of plant parts which have been in contact with explosive and inflammable material or which is under pressure, shall only be carried out under proper supervision.
- 170. Alarm systems.-** Gravity or pressure feed systems of supplying inflammable materials to the various parts of the buildings or plant shall be fitted with alarm systems, automatic cut – off or other devices to prevent overcharging or otherwise endangering the plant.
- 171. Further precautions.-**
- The amount of inflammable material taken in to a building in bulk containers at any one time shall be kept as low as practicable.
  - Adequate steps shall be taken to prevent the escape of inflammable and explosive vapours from any container into the atmosphere of any building.
- Acid, gas, vapour, fume or dust risks-rules 172 to 183.**
- 172. Escape of gases, etc.-**
- Effective steps shall be taken to prevent the escape of dangerous gases, vapours, fumes or dust from any part of the plant, by the total enclosure of the process involved or by the provision of efficient exhaust draught. Effective arrangements shall be made to ensure that in the event of failure of the control measure provided in compliance of the foregoing the process shall stop immediately.
  - In the event of any such escape, provision shall be made to trap the materials and render them safe.
- 173. Danger due to effluents.-**
- Adequate precautions shall be taken to prevent the mixing of effluents which may cause dangerous or poisonous gases to be evolved.
  - Effluents which may contain or give rise in the presence of other effluents to such gases shall be provided with independent drainage systems to ensure that they may be trapped and rendered safe.
- 174. Staging.-**
- Staging shall not be erected over any open vessel unless the vessel is so constructed and ventilated to prevent the omission of vapour or fumes about such staging.
  - Where such staging is provided to give access to higher levels in large plants, effective means shall be provided at all levels with direct means of access for the outside of the room or building and thence to ground level.
  - Such staging shall be fitted with suitable handrails and toe boards, and the floors and staging shall be impervious and easily cleaned.

- 175. Instruction as regards risk.-** Before commencing work, every worker shall be fully instructed on the properties of the materials they have to handle, and of the dangerous arising from any gas, fume, vapour or dust which may be evolved during the process. Workers shall also be instructed in the measures to be taken to deal with such an escape in the event of emergency.
- 176. Breathing apparatus.-**
- (a) There shall be provided in every factory where dangerous gas or fume is liable to escape a sufficient supply of-
- (i) Breathing apparatus of an approved make for the hazards involved.
  - (ii) Oxygen and suitable means of its administration, and
  - (iii) Life belts
- The breathing apparatus and other appliances required by these rules shall (i) be maintained in good order and kept in an ambulance room or in some other place approved in writing by the Chief Inspector and (ii) be thoroughly inspected once every month by a competent person, appointed in writing by the occupier, and a record of their condition shall be entered in a book provided for that purpose, which shall be produced when required by an Inspector.
- (b) Workers shall be trained, and given a periodic refresher course in the use of breathing apparatus and respirators.
- (c) Respiration shall be kept properly labeled in clean dry light – proof cabinets, and if liable to be affected by fumes, shall be protected by suitable containers. Respiration shall be dried and cleaned after use and shall periodically be disinfected.
- 177. Treatment of persons.-** In Every room or place wherever required in writing by the Chief Inspector there shall be fixed the official cautionary notice regarding gassing and burns. Such notice shall be legible by day and by night and shall be printed in the language understood by the majority of the workers.
- 178. Personal protective equipment.-**
- (a) Suitable protective clothing shall be provided for the use of operatives.
- (i) When operating valves or cocks controlling fluids which by their nature, pressure or temperature would be highly dangerous if a blow-out occurred or when cleaning chocks in systems containing such fluids if pressure is likely to exist behind the chocks;
  - (ii) when there is danger of injury by absorption through the skin during the performance of normal duties or in the event of emergency.
  - (iii) whenever there is risk of injury in handling corrosive substances, hot or cold articles and sharp or rough objects, and
  - (iv) when there is the risk of poisonous materials being carried away on their cloths.
- (b) There shall be provided for the use of all persons employed in the processes specified in schedule II to these rules an adequate supply of suitable protective equipment including gloves, overalls and protective footwear and of goggles and respirators. Respirators shall be of a type approved in writing by the Chief Inspector.
- (c) protective equipment shall be provided and stored in the appropriate place for use during abnormal conditions or in an emergency
- (d) Arrangements shall be made for the proper and efficient cleaning of all such protective equipments.
- 179. Cloakrooms.-** There shall be provided and maintained for the use of all persons employed in the processes specified in Schedule II of these rules a suitable cloakroom, for clothing put off during working hours and a suitable place separate from the cloakroom, for the storage of overalls of

working clothes. The accommodation so provided shall be placed in the charge of a responsible person, and shall be kept clean.

**180. Special bathing accommodation.-**

- (a) There shall be provided for the use of persons employed in the processes specified in Schedule III to these rules separate sanitary convenience and sufficient and suitable bathing facilities, which shall be to the satisfaction of the chief Inspector.
- (b) A bath register shall be kept containing the names of all persons employed in these processes and an entry of the date when each person takes a bath.

**181. Entry in to vessels.-**

- (a) Before any person enters, for any purpose except that of rescue, any absorber, boiler, culvert, drain, flue, gas purifier, sewer, still tank, tower, vitriol chamber or other places where there is reason to apprehend the presence of dangerous gas or fume, a responsible person appointed in writing by the occupier for the purpose shall personally examine such place and shall certify in writing in a book kept for the purpose either that such place is isolated and sealed from every source of such gas or fume and free from danger, or that it is not so isolated and sealed and free from danger. No person shall enter such place which is certified not to be so isolated and sealed and free from danger unless he is wearing a breathing apparatus, and (where there are no cross ways or obstructions likely to cause entanglement) a life belt, the free end of the rope attached to which shall be left with a man outside whose sole duty shall be to keep watch and to draw out the wearer if he appears to be affected by gas or fume. The belt and rope shall be so adjusted and worn that the wearer can be drawn up head foremost through any manhole or opening.
- (b) A person entering for the purpose of rescue any such place for which a clearance certificate has not been issued shall wear a breathing apparatus and a life – belt in the manner specified.

**182. Examination and Repair of plant.-** Where poisonous materials are likely to be present the examination and repair of plant piping shall only be done under the supervision of a competent person, and after the plant and piping has been thoroughly cleaned and ventilated. When opening vessels and breaking joints in pipe lines, respirators, goggles and protective clothing shall be worn to the extent required by the competent person.

**183. Storage of acid carboys.-** Carboys containing nitric acid or “mixed” acid shall be stored in open-sided sheds detached from other buildings, and placed on a flooring of sands, on brick, or other suitable inorganic materials. A passageway shall be provided and kept free from obstruction between every four rows of such carboys. An ample supply of water shall be available for washing away spilled acid and all precautions shall be taken to prevent workers being exposed to fumes.

**Corrosive or Deleterious Substances Risks-Rules 184-191**

**184. Buildings.-** All buildings and plant shall be sited with due regard to possible dangers from accidental liberation or splashing of corrosive and deleterious liquids, and shall be so designed as to facilitate thorough washing and cleaning. The construction of staging and other parts of building shall be carried out with materials impervious and resistant to corrosion so far as practicable.

**185. Leakage**

- (a) All plant shall be so designed and constructed as to obviate the escape of corrosive liquid. Where necessary, separate building, rooms or protective structures shall be used for the

dangerous stages of the process and the building shall be so designed as to localize any escape of liquid.

- (b) Catch pits, bund walls, or other suitable precautions shall be provided to restrict the serious effects of such leakage. Catch pits shall be placed below joints in pipelines where there is danger involved to maintenance and other works from such leakage.
- (c) Passages and work stations shall not be situated directly below any part of plant where there is risk of escape of dangerous liquids. Access to such parts shall, so far as practicable, be prohibited, and danger notices shall be affixed at suitable points.

**186. Precautions against escape.-** Adequate precautions shall be taken to prevent the escape of corrosive or deleterious substances and means shall be provided for rendering safe any such escape.

**187. Drainage-** Adequate drainage shall be provided and shall lead to special treatment tanks where deleterious material shall be neutralized or otherwise rendered safe before it is discharged into ordinary drains or sewers.

**188. Covering of vessels.**

- (a) Every fixed vessel or structure containing any dangerous material, and not so covered as to eliminate all reasonable risk of accidental immersion in it of any portion of the body of a worker, shall be so constructed that there is no foot hold on the top or the sides.
- (b) Such vessel shall, unless its edge is at least three feet above the adjoining ground or platform, be securely fenced to a height of at least three feet above such adjoining ground or platform.
- (c) No plank or gangway shall be placed across or inside any such vessel, unless such plank or gangway is at least 17 inches wide and is securely fenced on both sides by rails spaced at 9 inches apart to a height of at least three feet, or by other equally efficient means.
- (d) where such vessels adjoin and the space between them, clear of any surrounding brick or other work, is either less than 18 inches in width or is 18 or more inches in width, but is not securely fenced on both sides to a height of at least 3 feet, secure barriers shall be so placed as to prevent passage between them;

Provided that paragraph (b) of this rule shall not apply to:-

- (i) saturators used in the manufacture of sulphate of ammonia, and
- (ii) that part of the sides of brine evaporating pans which require raking, drawing or filling.

**189. Ventilation.-** Adequate ventilation shall be provided and maintained at all times in rooms or buildings where dangerous gas, vapour, fume or dust may be evolved.

**190. Means of escape.-** Adequate means of escape from rooms or building in the event of leakage of a corrosive liquid shall be provided and maintained.

**191. Treatment of personal.-** In all places where (strong acids or dangerous)corrosive liquids are used:-

- (a) There shall be provided for use in an emergency-
  - (i) adequate and readily accessible means of drenching with cold water persons and the clothing of persons, who have become splashed with such liquid;
  - (ii) adequate special arrangements to deal with any person who has been splashed with poisonous materials that can be absorbed through the skin.
  - (iii) a sufficient number of eye-wash bottles, fitted with distilled water or other suitable liquid, kept in boxes or cupboards conveniently situated and clearly indicated by a distinctive sign which shall be visible at all times.

- (b) Except where the manipulation of such corrosive liquids is so carried on as to prevent risk for personal injury from splashing or otherwise, there shall be provided for those who have to manipulate such liquid, sufficient and suitable goggles and gloves or other suitable protection for the eyes and hands. If gloves are provided they shall be collected, examined and cleaned at the close of the days' work and shall be repaired or renewed when necessary.

**Maintenance Duties of Workers, Facilities and  
Medical Examination – Rules 192-198.**

**192. Maintenance-**

- (a) Before any examinations or repairs are carried out on plant or pipe lines, a competent person shall issue a clearance certificate permitting such examination or repairs.
- (b) Adequate precautions shall be taken to liberate any pockets of gas or liquids which may have been formed in pipe-lines, and which may cause corrosive spray at the point where dismantling takes place.

**193. Washing facilities.**

- (1) There shall be provided and maintained in every factory for the use of employed persons adequate and suitable facilities for washing which shall include soap and nail brushes or other suitable means of cleaning and the facilities shall be conveniently accessible and shall be kept in a clean and ordinary condition.
- (2) If female workers are employed, separate washing facilities shall be provided and so enclosed or screened that the interiors are not visible from any place where persons of the other sex work or pass. The entrance to such facilities shall bear conspicuous notice in the language understood by the majority of the workers 'For Women only' and shall also be indicated pictorially.

**194. Mess -room facilities.-** In every factory there shall be provided and maintained for the use of those remaining on the premises during the rest intervals, suitable and adequate mess-room on canteen accommodation which shall be furnished with sufficient tables and chairs or benches with back rests and where sufficient drinking water is available.

**195. Ambulance room.**

- (a) In every factory in which more than 250 persons are employed on the processes to which these rules apply shall be provided and maintained in good order an ambulance room. The ambulance room shall be a separate room used only for the purpose of treatment and rest. It shall have a floor space of not less than 100 square feet, and smooth, hard and impervious walls and floor and shall be provided with ample means of natural and artificial lighting. It shall contain all the items shown in Schedule IV. Where persons of both sexes are employed, arrangements shall be made at the ambulance room for their separate treatment. The ambulance room shall be placed under the charge of qualified nurse or other person trained in first aid, who shall always be readily available during working hours, and shall keep a record of all cases of accidents or sickness treated in the room.
- (b) In every factory there shall be provided and maintained in good condition a suitably constructed ambulance van for the purpose of the removal of serious cases of accident or sickness, unless arrangements have been made with hospital or other in telephonic communication with the factory for obtaining such a carriage immediately when required

**196. Medical Personnel.-** There shall be whole time Medical Officer in every factory employed 250 persons or more.

**197. Medical Examination.-**

- (a) Workers engaged in the manufacture, processing, formulation or use of the following , shall be examined once in three months by the Certifying Surgeon and records maintained:-
  - (i) Hexa-ethyl tetra phosphate.
  - (ii) Tetra ethyl pyrophosphate.
  - (iii) O.O.Diethyl O.P.nitrophenyl thiophosphate(parathion)
  - (iv) Nicotine, Nicotine sulphate.
  - (v) Mercury derivatives.
  - (vi) Methyl bromide.
  - (vii) Cyanides.
  - (viii) Arsenical derivatives.
  - (ix) Chrome Process compounds.
  - (x) Nitro or amino process compounds.
- (b) A Health Register containing the names of all persons employed in the process shall be kept in a form approved by the Chief Inspector.
- (c) No person shall be newly employed for more than 14 days without a certificate of fitness granted after examination by the Certifying, by a signed entry in the Health Register.
- (d) Every person so employed shall present himself at the appointed time for examination by the Certifying Surgeon as provided in sub-rules (a) and (c) of this rules.
- (e) The Certifying Surgeon shall have power of suspensions as regards all persons employed , and no person after suspension shall be employed without written sanction from the Surgeon, entered in the Health Register

**198. Duties of workers.-**

- (1) Every person employed shall -
  - (a) report to his Foreman any defect in any fencing, breathing apparatus, appliances or other requisite provided in pursuance of these rules, as soon as he becomes aware of such defects;
  - (b) use of the articles, appliance or accommodation requires by these rules for the purpose for which they are provided;
  - (c) wear the breathing apparatus and life-belt where required under rule 181 (a) and (b).
- (2) No person shall.
  - (a) remove any fencing provided in pursuance of rule 188 unless duly authorized or
  - (b) stand on the edge or on the side of any vessel to which rule 188 applies;
  - (c) pass or attempt to pass any barrier erected in pursuance of rule 188;
  - (d) place across or inside any vessel to which rule 188 applies any plank or gangway which does not comply with that rule or make use of any such plank or gangway while in such position.
  - (e) Take a naked light or any lamp or matches or any apparatus for producing a naked light or spark into, or smoke in , any part of the works where there is liability to explosion from inflammable gas, vapour or dust;
  - (f) Use a metal spade, scraper or pail when cleaning out or removing the residues from any chamber, still tank, or other vessel which has contained sulphuric acid or hydrochloric acid or other substances which may cause evolution of arseniuretted hydrogen;
  - (g) Remove from a first-aid box or cupboard or from the ambulance room any first-aid appliance or dressing except for the treatment of injuries in the works.



### Schedule 1

**Chemical Works.** - means any works or that part of a work in which.-

1. The manufacture or recovery of any of the following is carried on:-
  - (a) Carbonates, chromates, chlorate, oxides, or hydroxides, or silicates of potassium, sodium, iron, aluminum, cobalt, nickel, arsenic, antimony, zinc or magnesium.
  - (b) Ammonia and the hydroxide and salts of ammonium
  - (c) Sulphurous, sulphuric, nitric, hydrochloric, hydrofluoric, hydroiodic, hydrosulphuric, boric, phosphoric, oxalic, arsenious, arsenic, lactic, acetic, tartaric or citric acids and their metallic or organic salts, and
  - (d) Cyanogen compounds.
2. A wet process is carried on-
  - (a) For the extraction of metal from ore or from any by-product or residual material or
  - (b) In which electrical energy is used in any process of chemical manufacture.
3. Alkali waste or the drainage there from is subject to any chemical process for the recovery of sulphur, or for the utilization of any constituent of such waste or drainage.
4. Carbon disulphide is made or hydrogen sulphide is evolved by the decomposition of metallic sulphides or hydrogen sulphide is used in the production of such sulphides.
5. Bleaching power is manufactured or chlorine gas is made or is used in any process of chemical manufacture.
6. (a) Gas tar or coal tar or any compound product or residue of such tars is distilled or is used in any process of chemical manufacture.  
(b) Synthetic coloring matters or their intermediates are made.
7. Refining of crude shale oil or any process incidental thereto is carried out.
8. Nitric acid is used in the manufacture of nitro compounds.
9. Explosives are made with the use of nitro compounds.
10. Insecticides which may be phosphorus, nicotine, mercury, naphthalene, cyanogens, arsenic, fluorine, copper benzene and ethane compounds or derivatives and methyl bromide are manufactured, mixed, blended and packed.]
11. Phosgene (Carbonyl Chloride) is manufactured or is used in the process of chemical manufacture.
12. Aliphatic or aromatic compounds and their derivatives or substituted derivatives are manufactured or recovered.

### Schedule II

1. A nitro or amino process (overalls or suits of working cloths and protective footwear)
2. Grinding raw materials in a chrome process (overall suits).
3. The crystal department and in packing in a chrome process (protective coverings).
4. Packing in a chrome process (respirators)
5. Any room or place in which chlorate is crystallised, ground or packed (clothing of woolen material and boots or overshoes, the soles which have no metal on them)
6. Any room in which caustic is ground or crushed by machinery [ [13]or otherwise handled] (goggles and gloves or other suitable protection for the eyes and hands)
7. Bleaching powder chambers, or in packing charges drawn on such chambers (suitable respirations)
8. Drawing off of molten sulphur from sulphur pots in the process of carbon disulphide manufacture (overall, face shields, gloves and footwear of fire proof material)
9. (a) Manufacture, mixing, blending and packing of insecticides which are phosphorus, nicotine, naphthalene, cyanogens, arsenic, fluorine, mercury and copper compounds or derivatives and methyl bromide (rubber aprons-chemical type, goggles and suitable respirators and in addition rubber gloves and boots for phosphorus and nicotine derivatives; synthetic rubber

aprons, gloves and boots when working with oil solutions; and washable working clothes laundered daily)

- (b) Manufacture, mixing, blending and packing of insecticides which are derivatives of benzene or ethane (rubber aprons, and suitable respirations, separate work clothes laundered frequently)

### Schedule III

1. A nitro amino process.
2. The crystal department and the packing room in a chrome process.
3. The process of distilling gas or coal tar (other than blast furnace tar) and any process of chemical manufacture in which such tar is used.
4. Manufacture, mixing, blending and packing of the insecticides mentioned in item 10 of schedule 1.

### Schedule IV

- (i) A glazed sink with hot and cold water always available
- (ii) A table with a smooth top.
- (iii) Means for sterilizing instruments
- (iv) A couch
- (v) A Stretcher
- (vi) Two buckets or containers with close –fitting lids
- (vii) Two rubber hot water bags.
- (viii) A kettle and spirit stove or other suitable means of boiling water.
- (ix) Twelve plain wooden splints 36”x4” ¼”
- (x) Twelve plain wooden splints 14”x3” ¼”
- (xi) Six plain wooden splints 10”x2” ½”
- (xii) Tree woolen blankets
- (xiii) One pair artery of forceps
- (xiv) One bottle of brandy.
- (xv) Two medium size sponges.
- (xvi) Three hand towels.
- (xvii) Two kidney trays
- (xviii) Four carbolic soaps.
- (xix) Two glass tumbler and two wine glasses
- (xx) Two clinical thermometers.
- (xxi) Graduated measuring glass with teaspoon.
- (xxii) One eye batch.
- (xxiii) One bottle (21b.) carbolic lotion 1 in 20
- (xxiv) Two chairs
- (xxv) One screen
- (xxvi) One electric hand torch
- (xxvii) An adequate supply of anti –tetanus serum
- (xxviii) Two first aid boxes, each containing
  - (a) 24 small sterilized dressing
  - (b) medium size sterilized dressing
  - (c) 12 large size sterilized dressing
  - (d) 12 large size sterilized burn dressings
  - (e) 12 half ounce packets sterilized cotton wool
  - (f) one snake bite lancet
  - (g) one pair scissors
  - (h) two (1 oz) bottle of potassium permanganate crystals

- (i) One (4oz.) bottle containing a two per cent alcoholic solution of iodine
- (j) one (4 oz) bottle of sal-volatile having the dose and mode of administration indicated on the label
- (k) One copy of the first aid leaflet issued by the Chief Advisor, Factories, Government of India.

### Special Process Rules 199 to 206

**199. Application.-** Rules 199 to 206 shall apply to works or parts thereof in which.

- (i) Caustic pots are used ; or
- (ii) Chlorate or bleaching powder is manufactured ; or
- (iii) (a) Gas tar or coal tar is distilled or is used in any process of chemical manufacture ; or  
(b) A nitro or amino process is carried on ; or  
(c) A chrome process is carried on; or
- (iv) Crude shale oil is refined or processes incidental thereto are carried on ; or
- (v) Nitric acid is used in the manufacture of nitro compounds;
- (vi) The evaporation of brine in open pans and the stoving of salt are carried on ; and
- (vii) The manufacture or recovery of hydro-fluoric acid or any of its salt are carried on or
- (viii) Work at a furnace where the treatment of zinc ores is carried on ,'
- (ix) Insecticides mentioned in item 10 of schedule I in rule 198, are manufactures mixed, blended or packed

**200. Entry into gas tar or coal tar still.-** Before any person enters a gas tar or coal tar still for any purpose except that of rescue, it shall be completely isolated from adjoining tar stills, either by disconnecting.

**201. Entry into bleaching powder chambers.-** No person shall enter a chamber for the purpose of withdrawing the charge of bleaching powder unless and until

- (i) the chamber is efficiently ventilated , and
- (ii) the air in the chamber has been tested and found to contain no more than 2.5 grains of free chlorine gas per cubic foot.  
A register containing details of all such tests shall kept in a form approved by the Chief Inspector of Factories.

**202. Special precautions for nitro and amido processes.-** In a nitro or amido process-

- (a) If crystallized substances are broken or any liquor agitated by hand, means shall be taken to prevent, as far as practicable, the escape or dust or fume in to the air of any place in which any person in employed. The handles or all implements used in the operations shall be cleansed daily.
- (b) Cartridges shall not be filled by hand except by means of suitable scoop.
- (c) Every drying stove shall be efficiently ventilated to the outside air in such a manner that hot air from the stove shall not be drawn into any work-room
- (d) No person shall enter a stove to remove the contents until a free current of air has been passed through it.
- (e) Every vessel containing nitro or amido derivates of phenol or benzene or its homologues shall, if steam is passed into or around it, or if the temperature of the contents be at or above the temperature of boiling water, be covered in such a way that steam or vapour shall be discharged into the open air at a height of not less than 25 feet from the ground or the working platform, and at a point where it cannot be blown back again into the work-room.

**203. Precautions during caustic grinding, etc.-**

- (a) Every machine used for grinding or crushing caustic shall be enclosed, and
- (b) Where any of the following processes are carried on :-
  - (i) Grinding or crushing of caustic;
  - (ii) Packing of ground caustic;
  - (iii) Grinding, sieving, evaporating or packing in a chrome process;
  - (iv) Crushing, grinding or mixing of material or cartridge filling in a nitro or amido process;
  - (v) The insecticides mentioned in item 10 of schedule I in rule 108 are manufactured, mixed, blended or packed an efficient exhaust draught shall be provided ;

**204. Chlorate manufacture.-**

- (a) Chlorate shall not be crystallized, ground or packed except in a room or place not used for any other purpose, the floor of which room or place shall be of cement or other smooth, impervious and incombustible material, and shall be thoroughly cleansed daily.
- (b) Wooden vessels shall not be used for the crystallization of chlorate, or to contain crystallized or ground chlorate; provided that this rule shall prohibit the packing of chlorate for sale into wooden casks or other wooden vessels.

**205. Restrictions on the employment of young persons and women.-**

- (a) a person under 18 year of age and women shall not be employed in any process in which hydrofluoric acid fumes or ammoniacal vapors are given off or in any of the following operations.
  - (i) evaporation of brine in open pans;
  - (ii) stoving of salt
  - (iii) work at furnace where the treatment of zinc ores is carried on ; and
  - (iv) the cleaning of work-rooms where the process mentioned in (iii) is carried on .
- (b) No person under 18 years of age shall be employed in a chrome or in a nitro or amido process or in a process in which the following materials are used or where the vapour of such materials is given off;  
Carbon disulphide, chlorides of sulphur, benzene, carbon tetrachloride, trichloroethylene, any chlorinated hydro-carbons, or any mixture containing any of such materials.

**206. Duties of employees.- Every person employed-**

- (a) In a process to which Rule 178 applies shall wear the protective clothing footwear, respirators, goggles or gloves provided under Rule 178 and shall deposit overalls or suits or working clothing so provided, as well as clothing put off during working hours, in the places provided under Rule 179.
- (b) In process to which Rule 180 applies shall carefully wash the hands and face before partaking of any food or leaving the premises.
- (c) In any processes to which Rule 199 applies shall use the protective appliances supplied in respect of any process in which he is engaged.

**207. The Travancore –Cochin Factories Rule, 1952 and the Madras Factories Rules 1950, in their application to the territories referred to as Malabar District in sub-section (2) of section 5 of the state Reorganization Act 1956 (Central Act 37 of 1956), are hereby repealed;**

Provided that any order made or action taken under the rules so repealed shall be deemed to have been made or taken under the corresponding provision of these Rules.

\*\*\*\*\*

***Court Rulings:***

**Rule 127:** Merely because the manager of a factory has taken out licence under the Act and had purported to conform to the requirement of the Act and the Rules by submission of returns or by putting up a notice as to hours of work or maintenance of registers, would not bring the establishment within the scope of the Act. It has to be established from circumstances and upon evidence that the factory falls within the definition under s.2(m) of the Act and that the workmen employed in such place come within the definition of Section 2 (1). *Sheshan v. Inspector of Factories, Cannanore. 1967-II-LLJ 423 (Ker.): 1966 KLT 951.*

**Rule 91:** The mere fact that the company had the responsibility to provide and maintain a canteen under the Section, cannot make them the ultimate employer of the workers engaged in the canteen for all purposes. The workers of the canteen run by the controller or co-operative society cannot be treated as workmen of the management and management is not liable to pay any bonus to such workers. *Cominco Binani Zinc Ltd. v. Pappachan 1989-I-LLJ 452 (Ker).*