

INVENTORY OF HAZARDOUS WASTE GENERATING INDUSTRIES

IN

ERNAKULAM, IDUKKI, KOTTAYAM AND THRISSUR DISTRICTS

2017



Prepared by
Kerala State Pollution Control Board
Regional Office, Ernakulam

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ACRONYMS

ABBREVIATIONS	DESCRIPTION
HW	Hazardous Waste
IRE	Indian Rare Earths Ltd.
FACT	Fertilizers and Chemicals Travancore Ltd.
CPCB	Central Pollution Control Board
SPCB	State Pollution Control Board
KSPCB	Kerala State Pollution Control Board
PCC	Pollution Control Committee
MOEF	Ministry of Environmental and Forestry
DGFT	Directorate General of Foreign Trade
UT	Union Territory
HWM	Hazardous Waste Management
TSDF	Treatment , Storage and Disposal Facilities
TCLP	Toxicity Characteristic Leaching Procedure

AAS	Atomic Absorption Spectrometer
KEIL	Kerala Enviro Infrastructure Ltd.
MTA	Metric Ton per Annum
HCL	Hydrochloric Acid
HF	Hydrogen Fluoride
SO	Sulphur Oxide
CO	Carbon Monoxide

Chapter 1

Introduction & Methodology

1.1 Introduction

The industrialization of the country is associated with generation of large quantities of hazardous waste which need to be properly handled and disposed to avoid contamination of soil, ground water and other components of the environment. For ascertaining the nature and extent of mitigate measures and reviewing the policies relating to hazardous wastes, the existing management practices are required to be properly inventorized on regional, state, and national level. Effective management and handling of hazardous waste is of paramount importance for protection of human health and environment.

To enable the authorities to control storage, transportation, treatment and disposal of hazardous wastes in an environmentally sound manner, the Ministry of Environment & Forests, Government of India, notified the Hazardous Waste (Management & Handling) Rules on July 28, 1989 under the provisions of the Environment (Protection) Act , 1986. The Rules were amended in the year 2000 and 2003 and modified as the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules-2008 in 2008, were notified for effective management of hazardous waste (HW), mainly solids, semi-solids and other industrial wastes, which do not come under the purview of the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act 1981 and also to enable the Authorities to control storage, transportation, treatment and disposal of waste in an environmentally sound manner. Final notification of the Hazardous and other Wastes (Management and Transboundary Movement) Rules in 2016 supersession of former notification.

Recognizing its importance, Hon'ble Supreme Court of India by its order dated 14.10.2003 in the Writ Petition No.657/95 has issued directions for management and handling of the hazardous waste and one of the direction was to prepare an inventory of hazardous waste by every State Pollution Control Board. Following this, Central Pollution Control Board directed the State Pollution Control Boards(SPCBs)/Pollution Control Committees(PCCS) to prepare and submit the inventory of hazardous waste generating industries in their respective State/ jurisdiction for preparation of national inventory.

1.2 Methodology for Preparation of National Inventory

Following methodology was adopted for preparation of the National Inventory-

- Standard formats were developed by Central Pollution Control Board and sent to all the SPCBs / PCCs for preparation of inventory of the hazardous wastes generating industries and status of hazardous waste management in the area of their jurisdiction
- The information submitted by the District level offices of the Board at Ernakulam-I, Ernakulam-II, ESC-Eloor, Thrissur, Idukki and Kottayam were scrutinized which are under the control of Regional Office Ernakulam.
- Based on the data submitted by District offices of the Board at Ernakulam-I, Ernakulam-II, ESC-Eloor, Thrissur, Idukki and Kottayam this inventory is prepared.
- The information presented in this report corresponds to the year 2016.

Hazardous waste means any waste which by reason of any of its physical, chemical, reactive, toxic, flammable, explosive or corrosive characteristics causes danger or is likely to cause danger to health or environment, whether alone or when in contact with other wastes or substances. Types of HW is shown in **fig 1.1**



Figure 1.1: Types of Hazardous waste

Chapter 2

HAZARDOUS WASTES MANAGEMENT RULES

2.1 HAZARDOUS WASTE MANGEMENT RULES, 2016

For the first time, in 2016 Rules has been made to distinguish between Hazardous Waste and other wastes. Other wastes include: Waste tyre, paper waste, metal scrap, used electronic items, etc. and are recognized as a resource for recycling and reuse. These resources supplement the industrial processes and reduce the load on the virgin resource of the country. Copy of the HWM Rules 2016 is given as **Annexure II**.

The salient features of Hazardous and Other Waste (Management & Transboundary Movement) Rules, 2016 include the following:-

- The HW Rules has been expanded by including 'Other Waste'.
- Waste Management hierarchy in the sequence of priority of prevention, minimization, reuse, recycling, recovery, co-processing; and safe disposal has been incorporated.

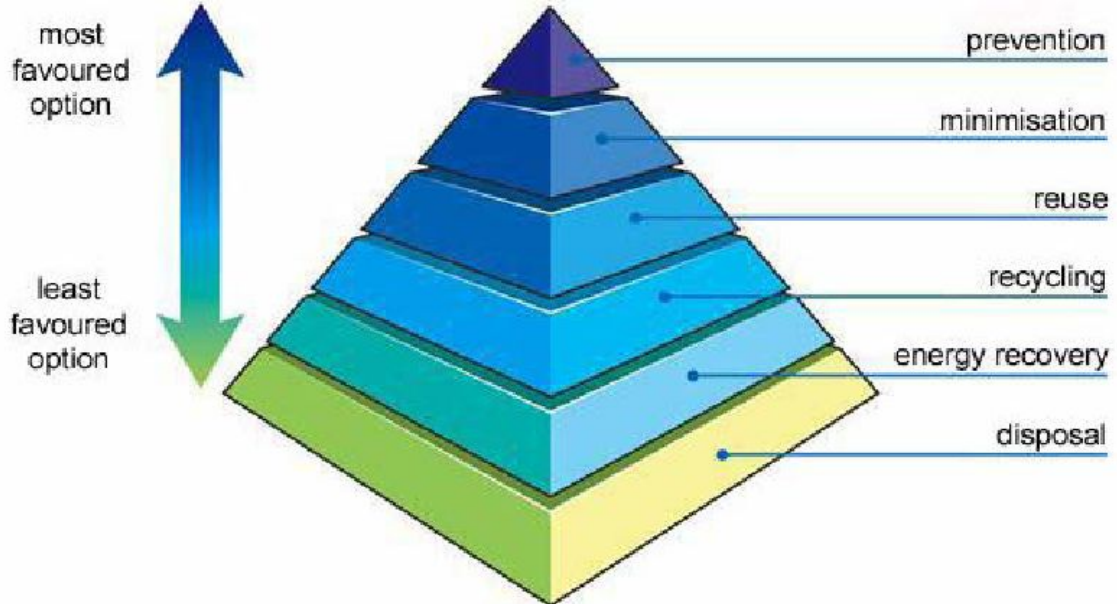


Figure 2.1: Waste Management Hierarchy

- All the forms under the rules for permission, import/export, filing of annual returns, transportation, etc. have been revised significantly, indicating more precise approach for management of such hazardous and other wastes with simultaneous simplification of procedure.

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- The basic necessity of infrastructure to safeguard the health and environment from waste processing industry has been prescribed as Standard Operating Procedure (SOPs), specific to waste type, which has to be complied by the stakeholders and ensured by SPCB/PCC while granting such authorization.
 - Procedure has been simplified to merge all the approvals as a single window clearance for settling up of hazardous waste disposal facility and import of other wastes.
 - Co-processing as preferential mechanism over disposal for use of waste as supplementary resource, or for recovery of energy has been provided.
 - The approval process for co-processing of hazardous waste to recover energy has been streamlined and put on emission norms basis rather than on trial basis.
 - The process of import/export of waste under the Rules has been streamlined by simplifying the document –based procedure and by revising the list of waste regulated for import/export.
 - The import of metal scrap, paper waste and various categories of electrical and electronic equipments for re-use purpose has been exempted from the need of obtaining Ministry's permission.
 - The basic necessity of infrastructure to safeguard the health and environment from waste processing industry has been prescribed as Standard Operating Procedure (SOPs) specific to waste type.
 - Responsibilities of State Government for environmentally sound management of hazardous and other wastes have been introduced as follows:
 - To set up/allot industrial space or sheds for recycling, pre-processing and other utilization of hazardous or other waste.
 - To register the workers involved in recycling, pre-processing and other utilization activities.
 - To form groups of workers to facilitate settling up such facilities.
 - To undertake industrial skill development activities and ensure safety and health of workers.
 - List of processes generating hazardous waste has been reviewed taking into account technological evolution in the industries.
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- List of Waste Constituents with Concentration Limits has been revised as per international standard and drinking water standard.
 - The following items have been prohibited for import:
 - Waste edible fats and oil of animals, or vegetable origin.
 - Household waste.
 - Critical Care Medical equipment.
 - Tyres for direct re-use purpose.
 - Solid Plastic wastes including Pet bottles.
 - Waste electrical and electronic assemblies scrap.
 - Other chemical wastes especially in solvent form.
 - State Government is authorized to prepare integrated plan for effective implementation of these provisions, and have to submit annual report to Ministry of Environment, Forest and Climate Change.
 - State Pollution Control Board(SPCB) is mandated to prepare an annual inventory of the waste generated; waste recycled, recovered, utilized including co-processed; waste re-exported and waste disposed and submit to the Central Pollution Control Board by the 30th of September every year.

These rules shall not apply to

- Waste –water and exhaust gases as covered under the provisions of the Water Prevention and Control of Pollution Control Act, 1974 and the Air prevention and Control of Pollution Act, 1981 and the rules made there under and as amended from time to time.
- Wastes arising out of the operation from ships beyond five kilometers of the relevant baseline as covered under the provisions of the Merchant Shipping Act, 1958 and the rules made there under and as amended from time to time
- Radio-active wastes as covered under the provisions of the Atomic Energy Act, 1962 and the rules made there under and as amended from time to time.
- Bio-medical wastes covered under the Bio-Medical Waste Management Rules, 2016 and the Municipal Solid Waste Management Rules, 2016 as amended from time to time.

Chapter 3

HAZARDOUS WASTE AND ENVIRONMENTAL IMPACTS DUE TO HAZARDOUS WASTES

3.1 Hazardous wastes

Hazardous wastes are wastes with properties that make them harmful to human health or the environment. Hazardous wastes can be liquids, solids or contained gases. They can be by products of manufacturing processes or commercial products, like cleaning fluids or pesticides. The board has classified the hazardous waste generally into three types i.e., land disposable hazardous waste, incinerable hazardous waste and recyclable hazardous waste. Types of HW listed in Table 3.1 with source of waste generation and health effect due to waste.

Table 3.1: Types of hazardous waste

Hazardous waste	Source	Health effect
Asbestos	Old insulation	Health effects of the respiratory system include asbestosis, lung cancer, chronic bronchitis, fibrosis, emphysema and decreased oxygen supply in blood
Radon	The ground	
Cadmium	Old batteries	
Benzene	Degreasers	
Carbon monoxide	Car exhaust, unvented or faulty furnaces	
Soot	furnaces, wood burning stoves	Health effects of the renal system include decreased formation of urine decreased blood flow to kidney, decreased ability to filter the blood prevented urine flow, kidney tissue damage and cancer
Lead	Old paint ,outdated plumbing	
Mercury	Thermostats, thermometers	
Uranium	Food & water, proximity to nuclear testing sites	
Chlorinated hydrocarbon solvents(TCE,PCE,PCT)	Degreasers, paint removers, dry cleaning solutions	
Methyl Mercury	Coal-burning	Health effects of the reproductive system include increased baby
Carbon monoxide	Car exhaust, unvented or faulty furnaces	

Lead	Old paint ,outdated plumbing	deaths, increased birth defects and infertility.
Arsenic	Pressure treated wood	Health effects of the nervous system include inability to move, confusion, decreased speech, sight, memory, muscle strength or coordination
Cadmium	Discarded batteries	
Carbon monoxide	Car exhaust, unvented or faulty furnaces	
Cyanide	Rat poison	
Polychlorinated biphenyls(PCBs)	Industrial waste, fish from contaminated water	Health effects of the immune system include over reaction to environmental substances(allergy), immune system slow down or failure, and auto immunity(Auto immunity causes the body to attack it self- which makes it more likely to have an over -reaction or infection)
Polycyclic aromatic hydrocarbons (PAHs)	Cigarette smoke, vehicle exhaust, asphalt roads	
Pesticides	Consumption of unwashed fruits and vegetables	
Carbon disulfide	Industrial production	
Nitrates	Fertilizers	Health effects include heart failure and the inability of blood to carry the necessary oxygen to the body
Methylene chloride	Auto part cleaners, paint removers	
Nickel	Cement	
Arsenic	Pressure treated wood	Health effects of the skin include irritation ,rash, redness or discoloration, dermatitis and health effect related to other systems and organs due to
Chromium	Paints, industrial production	
VOC(Volatile organic compounds)	Fumes from gasoline, paint adhesives, building supplies	

		contamination through the skin
Carbon tetrachloride	Adhesives	Health effects of the hepatic system include liver damage, tumors, accumulation of fat (steatosis) and death of liver cells
Methylene chloride	Auto part cleaners, paint removers	
Vinyl chloride	Pipe sealer	

3.2 CHARACTERISTICS OF HAZARDOUS WASTE

As per HW management Rules 2016, substances or wastes shall be classified as hazardous waste if it exhibits any of the following characteristics shown in the Figure 3.1 due to the presence of any hazardous constituents.



Figure 3.1 Four basic characteristics of hazardous waste

3.3 ENVIRONMENTAL IMPACTS DUE TO HAZARDOUS WASTES

Impacts to environment is caused by hazardous waste through various ways such as dumping of hazardous waste is open land, inappropriate handling of hazardous wastes at operating facilities, spillage of hazardous wastes during handling or transportation, failures of various engineering systems containing hazardous waste(e.g. secure landfills, storage sumps/containers,etc). Contaminations to soil, ground water, surface, water, air, sea/oceans etc., are the serious environmental issues caused by HW. The long term effects on the natural resources themselves, which if affected by contamination, become unusable by the general public. Once contaminated, natural resources require an inordinately long time to recover to original status. In most cases, even after the remedial measures natural resources can't attain the original (pre-contaminated) state.

Figure 3.2, a conceptual site model, shows different pathways from hazardous waste dumping/leakages contaminant reaching soil, ground water and surface water.

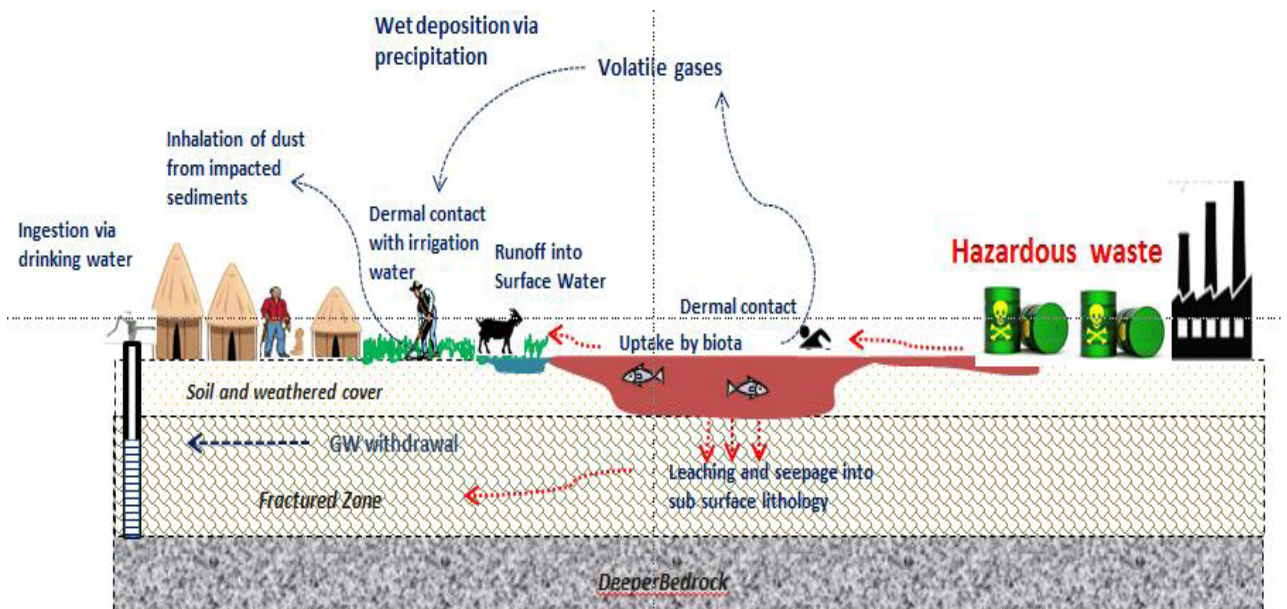


Figure 3.2: Conceptual site model of impact from hazardous waste dumping.

3.4 IMPACTS ON SOIL

Soils are affected by hazardous wastes in the following ways:

- Illegal dumping of hazardous waste on open land.

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- Discharge of liquid hazardous waste into open land.
 - In landfill, hazardous wastes might either get spilled on open land or land fill leachate percolate into the subsoil which ultimately reaches the aquifer.
 - Spills of hazardous solutions/wastes during transportation, leakages from trucks, tanks, pipelines etc.

Impacted soils can lead to indirect impacts including reforming the land such that they become unusable for agricultural purposes, serving as a continuous source of contamination to ground water and also serve as a direct exposure to humans who may come into contact with the contaminated soil media (most significantly children who are most susceptible to Health risks).

3.5. IMPACTS ON SURFACE WATER

Surface waters are common affected natural resource due to illegal disposal or improper handling of hazardous wastes. Surface water, are a highly sensitive receptor for the Indians (used for bathing purposes, washing purposes, irrigation purposes, in some cases drinking purposes etc.). Therefore the risk of damage to the environmental and human health is very high.

- Typical examples of how surface water bodies are impacted with hazardous wastes include.
- Runoff from hazardous waste dumps entering surface water bodies.
- Discharge of liquid hazardous waste directly into nearby streams ultimately discharges into larger surface water bodies

3.6 IMPACTS ON GROUNDWATER

Aquifers being the source of important element of life (drinking water), tend to be most vulnerable and sensitive natural resources.

Aquifers are impacted with hazardous wastes in the following ways:

- Leaching of contaminants from hazardous wastes dumped into open land.
- Leaching of contaminants from hazardous waste storage tanks or leaking underground storage tanks.
- Leaching of contaminants from landfills that are leaking below ground.

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- Leaching of contaminants from underground leaking pipelines carrying liquid hazardous waste.

3.7. IMPACTS ON HUMAN HEALTH

Hazardous waste spillage may cause direct effects that could potentially have a long term health impact on humans. Effects could include injury due to direct contact with hazardous waste or inhalation of noxious gases emitted from hazardous wastes. Loss of life may occur in rare cases due to improper handling or disposal of highly reactive wastes such as wastes containing reactive cyanide, reactive sulfide, long term exposure to wastes containing carcinogenic constituents, etc.

Chapter 4

SEGREGATION AND DISPOSAL OF HAZARDOUS WASTE

Hazardous waste such as lead acid battery scraps, used oil, waste oil, spent catalyst etc. and other waste such as waste tyres, paper waste, metal scrap etc. are used as raw material by the industries involved in recycling of such waste and as supplementary resource for material and energy recovery. Accordingly, it is always preferable to utilize such waste through recycling, or for resource recovery to avoid disposal through landfill or incineration.

Scientific disposal of hazardous waste through collection, storage, packaging, transportation and treatment, in an environmentally sound manner minimizes the adverse impact on human health and on the environment. The hazardous waste can be disposed at captive treatment facility installed by the individual waste generators or at Common Hazardous Waste Treatment, Storage and Disposal Facilities (TSDFs).

HW mainly disposed in India through following three methods:

- By landfill.
- By incinerating it at a high temperature
- By recycling.

4.1 DISPOSAL BY LANDFILL

The hazardous wastes generated by industries are required to be collected in secure landfill. But later this leachate, if not collected and treated properly, can contaminate the ground water resources. In this regard, CPCB has taken up a project on “Development of Standards for leachate from Hazardous Waste Disposal Site”.

The following listed wastes should not be allowed to dispose off directly into the landfill facility:

- Waste, which is a fluid, slurry or past
- Waste, which is delivered under pressure or under vacuum
- Waste, which has an obnoxious odour.
- Waste, which reacts with moisture to produce considerable amount of heat or gases.
- Waste, which is highly inflammable.
- Waste , which contains shock sensitive substances

- Waste, which contains very strong oxidizing agents
- Waste, which contains volatile substances of significant toxicity.
- Waste, which falls below a pH value of 4 and exceeds the value of 13, if evaluated in distilled water in the ratio of 1:10
- Waste, which possess a calorific value of more than 3200 Kcal/kg. These wastes have to go for authorized energy recovery or for incineration.

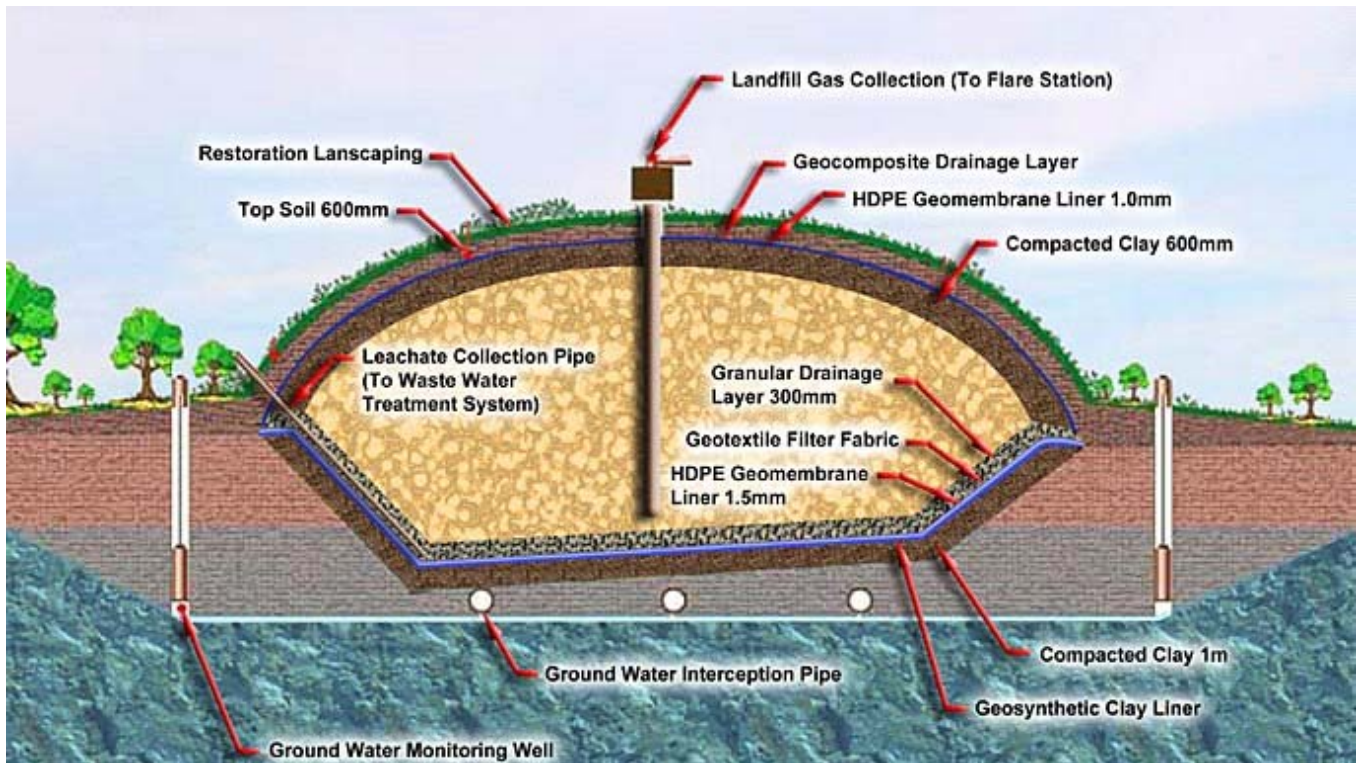


Figure 4.1: Secure hazardous waste land fill

4.2 DISPOSAL BY INCINERATION

A hazardous waste incinerator consists of a rotary kiln, an after burner and an air pollution control system. Both solid and liquid wastes are introduced into the rotary kiln, in which the temperature is usually higher than 1,800 degrees Fahrenheit. The kiln rotates slowly to ensure that the solid wastes are exposed on all sides to the high temperature in the kiln. A large fan draws the excess air into the system to increase its combustion efficiency. This method also minimizes the environmental impact, as it reduces waste from landfill and heat produced via the incineration process is used to power a stream turbine which generates electricity.

CPCB have published a document on “Guidelines for Common Hazardous Waste Incinerators in June 2005” (i.e.HAZWAMS/30/2005-2006), which cover transportation, storage, analytical facilities, feeding systems and combustion systems, pollution control devices and monitoring. Some of the details of the incinerator specified by the CPCB are noted below:

- Incineration plant shall be equipped with at least one auxiliary burner.
- Kiln and secondary combustion chamber of the incinerator may be made of mild steel conforming to IS: 2062 and of suitable thickness lined with high-grade refractory and insulation.
- Combustion chambers (kiln & secondary combustion chamber) shall be supplied with excessive air to ensure complete burning of wastes. The blower shall have the capability to provide appropriate supply of combustion air.
- To maintain designed heat capacity of the rotary kiln, quantity of the solid waste injection package (kg/single injection) shall be adjusted w.r.t.caloric value of the waste feed.
- Minimum temperature requirement in the secondary combustion chamber is 1100°C. This may be ensured by averaging the temperature measurement of three detectors (not exactly positioned in the burner flame) at the same time with in the combustion chamber.
- Pollution control devices are required to comply with prescribed standards for particulate matter, HCl,SO₂,CO, Total Organic Carbon, HF, NO_x (NO and NO₂), Hydrocarbons, Dioxin/Furans.
- Stack Height shall not be less than 30 meters, in any case.

4.2.1 Incinerator Facility owned by Hindustan Insecticides Limited (HIL) at Udyogamandal in Ernakulum district

Hindustan Insecticides Limited (HIL) at Udyogamandal in Ernakulum district is having a solid hazardous waste incinerator of capacity 250 kg/hour for the incineration of solid waste generated from their industry. The process waste and contaminated HDPE bags are the main components undergoing incineration.

The unit engaged in the production of insecticides and fungicides which commissioned in 1957. The unit produces products such as Mancozeb, DDT and dicofol.

The raw materials are ethylene di-amine, carbon disulphide caustic soda, manganese sulphate and zinc sulphate. The process involves chemical reaction, temperature and pH maintenance, filtration, Washing, spray drying, vacuum drying and blending.

Air pollution control measures: - The solid waste generated is disposed off through incinerator with a capacity of 250 kg/hr having air pollution control devices such as ventury scrubber, mist eliminator, ID fan and FD fan. The Primary Chamber of incinerator is maintained at 850°C and Secondary chamber maintained at 1100-1150°C. The flue gas is then vented outside through a chimney of height more than 30m. Flue gas emitted is analyzed for all parameters including Dioxin and Furans. The fuel used for firing the incinerator is diesel. The scrubbed water is taken to the ETP which will be acidic in nature. The unit consists of a furnace oil fired boiler for the production of steam.

Effluent treatment Plant: - The ETP has a capacity to process 600 m³ of waste water per day. During last year they have incinerated (process waste+waste bags) 25.89 MT of waste generated and has disposed 448.235 MT of ETP sludge and 1MT ash via KEIL.



Figure 4.2: Hazardous Waste Incinerator at Hindustan Insecticides Limited (HIL)

4.3. DISPOSAL BY RECYCLING

Commonly recyclable hazardous wastes specified in Schedule IV of the hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016. List of the Units in Kerala Registered with MoEF/CPCB/SPCB as Recyclers/Reprocesses as per Hazardous and other Wastes (Management and Transboundary Movement) Rules in 2016 as on 16.02.2016 are listed in the Table 4.1

Sl. No.	Name of Industry	Quantity	Validity for Registration
1	Southern Refineries Ltd. Kuzhinjanvila, Parassala P.O., Thiruvananthapuram Kerala- 695 502 Ph: 0471-2203073	Used oil 13500 KLA Waste oil 6000 KLA	No expiry date validity as per terms and conditions specified in the registration certificate
2	Cee Jee Lubricants VI/592, IDA, Edayar Binanipuram P.O, Aluva, Kerala – 683 502 Ph:0484-2558486	Used oil 3000 KLA Waste oil 6000 KLA	No expiry date validity as per the terms and conditions specified in the registration certificate
3	Excel Petrochemicals Koonamthai Changampuzha Nagar P.O. Kochi, Kerala – 682 033 Ph: 0484-2540079	Used oil (transformer oil) 1200 KLA	No expiry date validity as per the terms and conditions specified in the registration certificate
4	Best smelters VIII/1208 NIDA, Kanjikode, Palakkad-678 621 0491-2566040, 2566040 89433445332	2.18 t/day of used lead and battery for production of 1.63 t/day of lead ingots and 12.5 kg/day of calcium sulphate	PCB/HO/PLKD/HWM/REG/01/2014 date of issue 02/03/2014 validity – 31.03.2018
5	K.J.Lubes, SIDCO Industrial Park, Athani, Thrissur- 680 581 Ph: 9744483574	Used oil 4000 l/d	PCB/HO/TSR/HW/REG/01/2014 dated 05.03.2014 Upto 31.07.2018

6	T.S. Lead Refineries Plot No.103,KINFRA, Small Industries Park,Seethamgoli Kasaragod, Ph:9447662000	Scrap battery(for producing refined lead 4 t/d)	PCB/HO/KSFD/HWM/REG/01/2014 Dated 10.03.2014 Validity 30.04.2017
7	Peejay Enterprises Kutoor P.O.,Thuruvalla Kerala – 689 106 0469-261425 9447018625	Used lead acid batteries and lead scrap 3000 t/annum	PCB/HO/PTA/HW/REG/01/2013 dated 14.06.2013 Validity 31.03.2018
8	APJ Refineries Pvt. Ltd. Pudussery Central Village New industrial Development Area, Kanjikode – 678 621 Palakkad. Ph: 0491-2566595 9995821648	Used oil 40 t/d Waste oil 24 t/d	PCB/HO/PLKD/HWM/REG/03/2013 dated 04.07.2013 Validity :30.11.2017
9	Aaron International Plot No.-10 Industrial Development Plot Parakkulum,Anakkara P.O. Palakkad – 679 551 Ph:- 9447871237	Cu & Zn Materials- 8 t/d For producing Cu cathode- 1 t/d Zinc sulphate 4 t/d	PCB/HO/PLKD/HWM/REG-PB/01/2015 dated 07.10.2015 validity 31.01.2019
10	Petroliv Petroliums (Angels Group) Erikulam P.O.,Madakkai Nileshtar,Kasaragod Ph:9995000704 9400637673	Used oil: 3600 Kl/annum Waste oil : 3600 Kl/annum	PCB/HO/KSGD/HWM/REG/01/2016 o1/02/2016 Validity : 31.12.2019

Chapter 5

TREATMENT, STORAGE AND DISPOSAL FACILITIES IN KERALA

KERALA ENVIRO INFRASTRUCTURE LTD (KEIL)

5.1 Introduction

Common Treatment, Storage and Disposal Facilities (TSDF) in Kerala Enviro Infrastructure Ltd (KEIL), TSDF Project, Inside FACT – CD Campus, Ambalamedu - 682303 is a public limited Company functioning at the industrial hub of Ambalamedu, situated about 25 KM on the Eastern side of Kochi City. This facility was established on the directive of the Supreme Court Monitoring Committee on hazardous waste for treatment and disposal of hazardous waste generated from industries in the State of Kerala. Consequently Govt. of Kerala appointed Kerala State Industrial Development Corporation (KSIDC) as nodal agency for setting up a Common Hazardous Waste Treatment, Storage and Disposal Facility (CHWTSDF) for management of solid hazardous waste in the State of Kerala. KSIDC established KEIL as a Special Purpose Vehicle with participation of 85 industries in the State. M/s United Phosphorus Ltd (UPL) was appointed as Developers for the project. M/s UPL with a contribution of Rs.6.51 crores, has the majority equity in the Company as on 31.03.2017.

The Company is functioning at the 50 acres of land purchased in the name of Govt. of Kerala from FACT-Cochin Division, and leased to KEIL for 50 years. The company disposes solid hazardous waste in engineered landfills from various industries in the state of Kerala.

5.2 Background

The Hon. Supreme Court of India vide its order dated 14th October 2003 in W.P no 657/95 directed closure of all industries operating in violation of Hazardous Waste Rules. The Court also constituted a Monitoring Committee to oversee that the directions of the Court are implemented timely. As per the Supreme Court Order, all the States generating more than 20,000 tonnes/annum of hazardous wastes are to set up facilities for Treatment, Storage and Disposal (TSDF) of solid hazardous waste. The Hon. Supreme Court also directed that the facility has to be created as per the guidelines and

norms of Central Pollution Control Board (CPCB) and Ministry of Environment & Forest (MoEF), Govt. of India.

The Supreme Court Monitoring Committee (SCMC) in their report to the State Govt. in August 2004, directed Kerala State Pollution Control Board (KSPCB) to order closure of industries which were either working without authorization of KSPCB or in violation of Hazardous Waste Rules. The SCMC had also recommended to the Govt. of Kerala to take steps for setting up of a Common TSDF for disposing hazardous solid waste generated by industrial units in the State.

Consequently Govt. of Kerala appointed Kerala State Industrial Development Corporation (KSIDC) as nodal agency for setting up a Common Hazardous Waste Treatment, Storage and Disposal Facility (CHWTSDF) for management of solid hazardous waste in the State of Kerala. KSIDC promoted the public limited company Kerala Enviro Infrastructure Limited (KEIL) as a Special Purpose Vehicle to establish the TSDF. Besides KSIDC 88 big, medium and small industries in the state are share holders in KEIL. The land meeting the CPCB guidelines for setting up the CHWTSDF was identified at the campus of FACT at Ambalamedu. 50 acres of land belonging to FACT was purchased in the name of Govt. of Kerala and given on long term lease to KEIL for establishing the CHWTSDF. For setting up the common facility Govt. approved proposal of KSIDC to appoint United Phosphorus Ltd (UPL) as Developer for the project and to bring in 51% equity in October 2006. The Developer had to design, finance, construct and operate the CTSDF under Build, Own and Operate (BOO) scheme. BOO period was fixed initially 50 years with provision for further renewal by mutual agreement. The Developer had executed a project agreement / Development agreement with KSIDC for implementation and managing the common facility. MoEF and State government granted 2crores each which has utilized for purchase of land and development of infrastructure facilities.

For availing the grant of Rs 2.0 crore from Central Govt., a Memorandum of Understanding (MoU) was executed between MoEF, KSPCB and KEIL on 15 Feb 2007 which elaborated the terms and condition for setting up and operation of the common TSDF Consent to establish the common TSDF was issued by KSPCB on 27 Dec 2005 with validity up to 26 Dec 2007. After building the necessary infrastructure by KEIL consent to Operate and authorization was issued by KSPCB on 23 Jan 2008 which is being renewed periodically. Now the unit is having a validity up to 30.06.2018.

The authorized share capital of the Company as of today is 15.0 crores. M/s UPL with a contribution of Rs.6.5 crores, has the majority equity in the Company.

The secured Landfill is constructed in phases as per requirement. Each cell of the landfill on filling up with waste is capped as per guidelines issued by Central Pollution Control Board. The total capacity of the landfill is 10,00,000 Metric Tonnes estimated to be disposed over a span of 20 year. KEIL is required to maintain the landfill and monitor for its satisfactory performance for a period of 30 years after closure.

An amount equivalent to 10 % of the Disposal Charges Collected every month is deposited as fixed deposit (FD) in a scheduled bank in lieu of Escrow Fund. As at the end of June 2017, a total amount of Rs 357 lakhs is deposited as FD. This amount is intended for taking care of maintenance upkeep and environmental monitoring of the common TSDF during post closure period.

5.3 Secured Landfill

Engineered landfills are built as per designs and drawings by independent consultant from IIT, Delhi and approved by Kerala State Pollution Control Board. Each cell is inspected by experts before construction, during construction and end of constructions. The cell of the secured landfill is built in a minimum area of 1 acre. The wastes which are suitable for direct disposal in the landfill as per CPCB criteria are disposed directly in the landfill and wastes which require pre-treatment/stabilization are subjected to necessary treatment before disposal in the landfill.

The common TSDF has capacity to dispose 10,00,000 MT of hazardous waste for a period of 20 years. The Common TSDF of KEIL is the only facility in Kerala to collect, transport, treat and dispose hazardous waste as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

5.4 Site layout of KEIL-TSDF

The site layout of KEIL-TSDF is shown in **Annexure I**.

5.5 TSDF Operations

5.5.1 Collection & Transport of Hazardous waste

The hazardous waste is transported in special containers of mild steel with suitable corrosion resistance coating and roll on roll of covers. The transport vehicles were dedicated for transportation of hazardous waste & they will not be used for any other purpose. The picture of special purpose vehicle is shown below.



Figure 5.1. special purpose vehicle for transportation of hazardous waste

5.5.2 The TSDF has two components

1. Temporary Storage facility and stabilization unit

The material which requires stabilization is stored in Temporary Storage Facility. Stabilization is a process by which wastes are converted into an inert state using lime and cement. After addition of lime and cement in a pre determined quantity stabilization takes place and the material become very hard like slag and it is free from leaching. The facilities include a well equipped Laboratory, Common storage and Physical treatment area having 1800 m² with impervious lined floor for temporary storage of the hazardous waste, dedicated vehicles for transportation of hazardous waste complying with environmental regulations, administrative office, secured landfill constructed as per

CPCB guidelines with double composite liner system and multiple effect evaporation plant for leachate treatment.

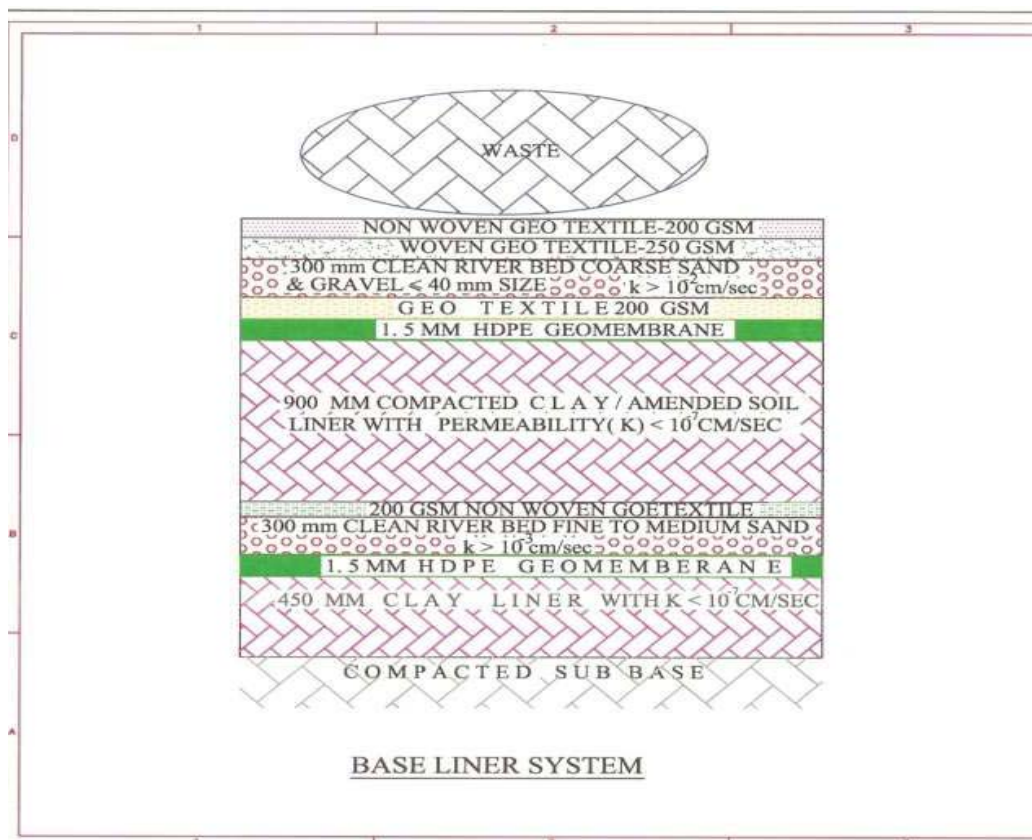
2. Disposal facility-Secured Land Fill (SLF)

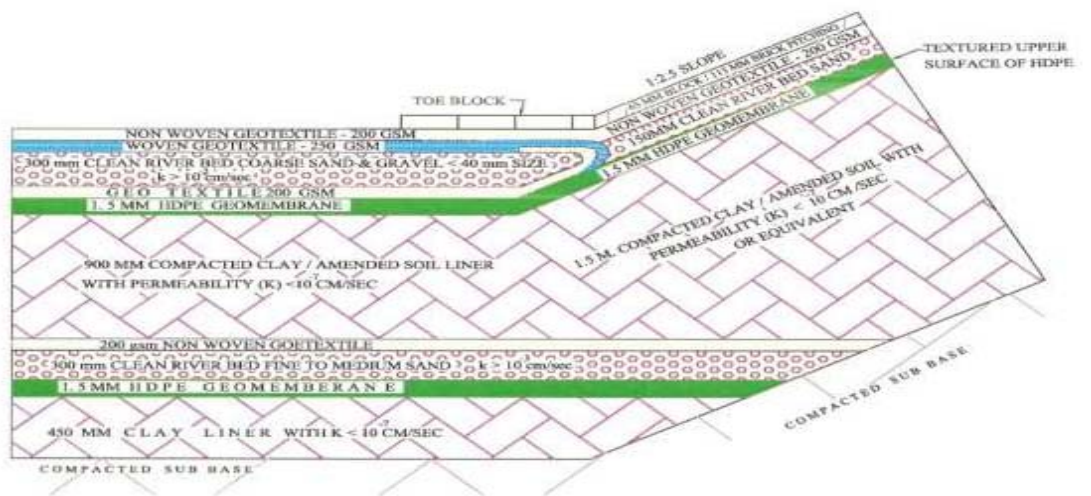
Secured landfill constructed as per CPCB guidelines with double composite liner system. After stabilization Hazardous waste is transferred to SLF.

Hazardous waste landfill shall have the following seven essential components

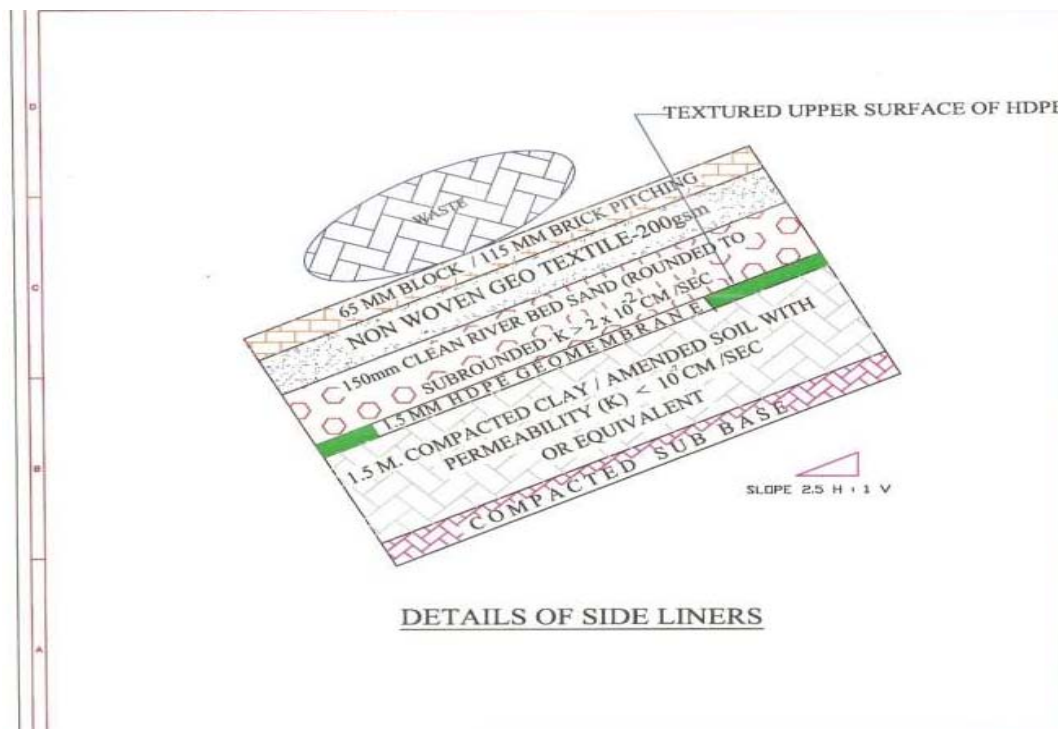
- Liner system at the base and sides of landfill
- A leachate collection and treatment facility
- A gas collection and treatment facility (optional)
- A final cover system at the top of landfill
- A surface water drainage system
- Environmental monitoring system - analysis of air, surface water, soil, gas, groundwater
- Closure and post-closure plan

The liner system for the secured land fill at the base, sides and top cover are shown the figures 5.2 (a,b,c,d)





JUNCTION OF BOTTOM LINERS WITH SIDE LINERS



DETAILS OF SIDE LINERS



Figures 5.2 (a,b,c,d): Liner system for the secured land fills

5.5.3 Facilities in TSDF, Ambalamugal

- ❖ Waste storage shed of 1800 m² (l=60 m, b=30 m) area having RCC flooring with HDPE lining.
- ❖ Stabilization of waste carried out using lime & Cement.
- ❖ Multiple Effect Evaporator for Leachate treatment.
- ❖ DG sets of 100KVA capacity.
- ❖ Four tests bore wells provided for monitoring.
- ❖ The chimney height of boiler 30m with stack monitoring facility and DG set is adequate.
- ❖ Laboratory provided for the testing of parameters major machineries are pH meter, Nephelometer, Conductivity meter, AAS, UV Spectro-photometer, TCLP instrument, Bomb calorimeter etc.

No effluent is generated from the facility. Leachate from the landfill is evaporated in the multiple effect evaporator plant and the residue from multiple effect evaporators in the form of slurry sent back to land fill. The condensate from the multiple effect

evaporator is used for irrigation and gardening. The picture of multiple effect evaporator is shown in figure 5.3.



Figure 5.3 : Multiple effect evaporator

5.6 Current working Status

Currently KEIL has constructed 5 cells for waste disposal out of which 3 cells are filled with waste and capped. The 1st cell having capacity of 89000MT, second cell having capacity of 65000MT and third cell having capacity of 65000MT had been completed filling of waste. The construction of cell 4 having 65000MT capacity is completed and filling of waste is started it is in operation. The construction of 5th cell is also completed. The total waste collected since 2008 is 318000 MT till end of July 2017.



Figure 5.4 : Cell 1 before capping



Figure 5.5 : Cell 1 HDPE top liner



Figure 5.6 : Cell 1 after capping

Total H W received from various industries of Kerala in 2016 at KEIL is shown in Annexure –III.

The year-wise quantity of waste collected and disposed in KEIL landfill so far is shown in the Table. 5.1

Year	Quantity of waste collected (MTA)
2008-09	3,642
2009-10	18,901
2010-11	38,454
2011-12	45,328
2012-13	44,284
2013-14	37,082
2014-2015	53837
2016 – 2017	27,104

5.7 MONITORING OF COMMON HAZARDOUS WASTE TREATMENT STORAGE AND DISPOSAL FACILITY (TSDF) BY REGIONAL OFFICE, ERNAKULAM

As regular monitoring of ground water quality at the TSDF is highly essential, monitoring of ground water from the four bore wells and leachate collection tank of TSDF has been done by analyzing various chemical parameters and pesticides. Kerala State Pollution Control Board Regional office, Ernakulam is analysing water samples from 4 bore wells which dug at the upstream and downstream of landfill for various chemical parameters and pesticides. The monthly monitoring has been carried out during 2013-2014 financial year. From the period of 2014-2015 the monitoring is being carried out quarterly and the project is still continuing. Bore well details are as follows.

1. Upper Bore well having depth 80 m
2. Lower Bore well having depth 30m
3. Lower Bore well having depth 12m
4. Lower Bore well having depth 9 m.

The parameters analysed are pH, SS, TDS, Chloride, Cl_2 residual, Fluoride, Sulphate, NH_3 as Nitrogen, Hardness, BOD, COD, Total Kjeldhal N_2 , Oil and Grease, Phenolic Compounds, Cadmium, Chromium, Copper, Nickel, Lead, Zinc and Organo Chlorine Pesticides such as Alpha BHC, Gamma BHC, Delta BHC, Aldrin, Dicofol, Alpha-Endosulphan, Dieldrin, Beta –Endosulphan, OP-DDT, PP-DDT. The analysis of samples were carried out at central laboratory, Kerala state Pollution Control Board, Ernakulam.

Chapter 6

INVENTORY OF HAZARDOUS WASTE

6.1. BACKGROUND

Industrialization of the Kerala State is associated with generation of large quantities of hazardous waste which need to be properly handled and disposed to avoid contamination of soil, mitigative measures and reviewing the politics relating to hazardous wastes, the existing management practices are required to be properly inventories on regional level, state level. Effective management and handling of hazardous waste give prime importance for protection of human health and Environment.

The State Board has prime responsibility of preparing and submitting such Hazardous waste inventorisation data to Central Pollution Control Board.

6.2. OBJECTIVES

The main objectives of the project include the following:

- ❖ Inventorisation of hazardous waste generating industries in Ernakulam, Thrissur, Idukki, Kottayam Districts which are under the control of Regional Office, Ernakulam.
- ❖ Quantification of hazardous waste based on type.

6.3. QUANTIFICATION OF HAZARDOUS WASTE

Waste generation in HW generating industries depends generally on the following factors.

- Type of establishment
- Type of waste produced
- Waste management methods practiced.

6.4 HAZARDOUS WASTE INVENTORY OF ERNAKULAM DISTRICT

Ernakulam district covers an area of 2407km² located on the Western Coastal Plains of India. It is surrounded by Thrissur district to the north, Idukki district to the east, Alappuzha and Kottayam districts to the south and Arabian sea to the west with a population density of about 1500 inhabitants/Km² comprising

seven taluks. They are Kanayannur, Kochi, Aluva, Paravur, Kunnathunadu, Muvattupuzha and Kothamangalam. The District can be divided geographically into highland, midland, and coastal area.

Ernakulam District comprises of numerous hazardous waste generating industries such as Cochin Port Trust, Cochin Shipyard Ltd., CSEZ, Indian Oil Corporation Ltd., FACT Ltd., Kitex Garments Ltd., Philips Carbon Black Ltd., CMRL Ltd., HIL, BPCL, Nitta Gelatin, vehicle servicing centres etc. The above stated HW generating industries were taken under the scope of this inventory. In Ernakulam there are 328 HW generating industries identified.

6.4.1. CATEGORY-WISE HW GENERATED IN ERNAKULAM DISTRICT

Quantity of HW generated as per the process defined in Schedule I in Ernakulam district is tabulated and shown in the table 6.1. Its graphical representation shown in the figure 6.1

Table 6.1: Category –wise HW generated in Ernakulam District as per Schedule I

HW as per Schedule 1	Quantity generated (in ton/year)
Processes 3	8.18
Processes 4	1145.24
Processes 5	2258.84
Processes 9	0.80
Processes 11	451.47
Processes 12	127.53
Processes 15	5.77
Processes 16	437.92
Processes 17	28.10
Processes 18	528.30
Processes 20	1.68
Processes 21	94.02
Processes 23	0.01
Processes 25	250.86
Processes 31	9.67
Processes 33	3.84
Processes 35	4987.97
Processes 37	1093.28
Total	11433.45

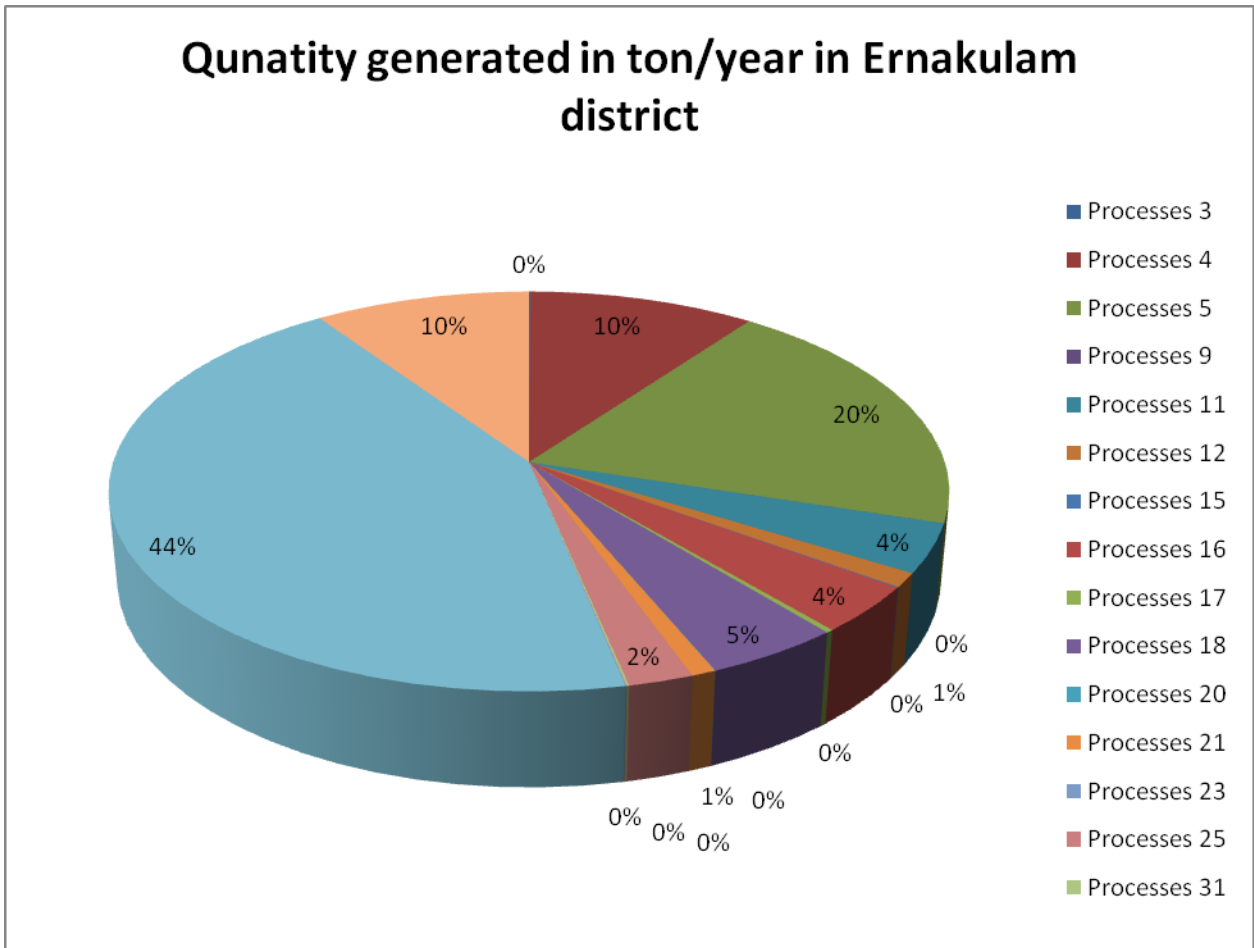


Figure 6.1: Graphical representation of HW generation in Ernakulam District as per Schedule I

Quantity of HW generated as per the process defined in Schedule II in Ernakulam district is tabulated and shown in the table 6.2. Its graphical representation shown in the figure 6.2.

Table 6.2: Category –wise HW generated in Ernakulam District as per Schedule II

HW as per Schedule II	Quantity generated (in ton/year)
Class A	39.4
Class C	1366.8
Total	1406.2

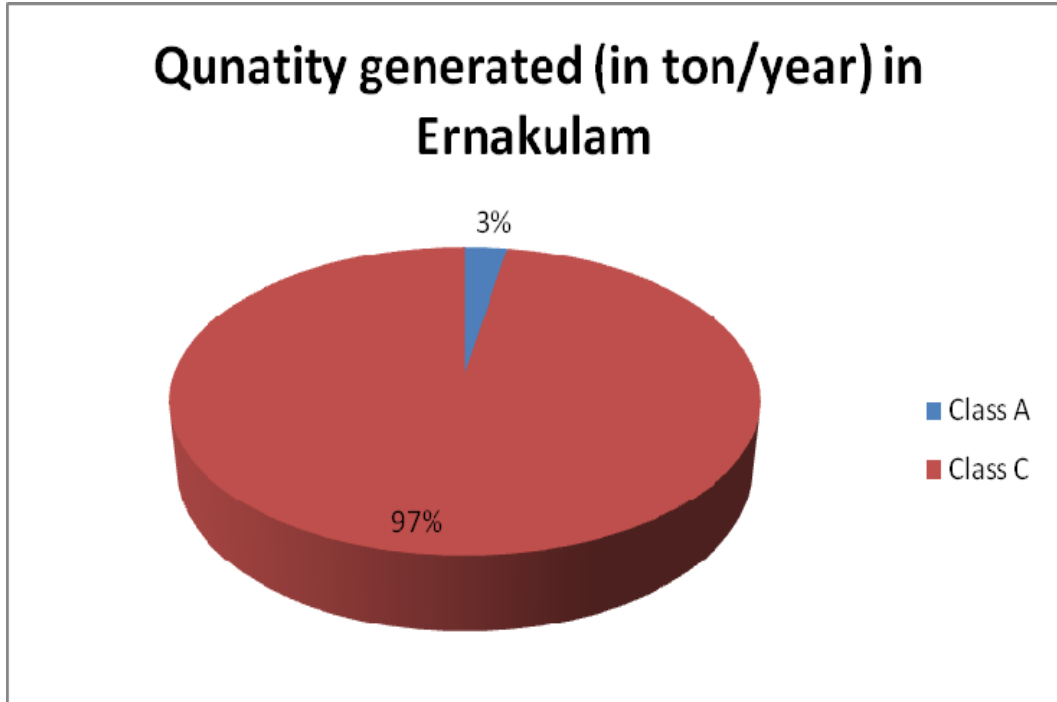


Figure 6.2: Graphical representation of HW generation in Ernakulam District as per Schedule II

Quantity of HW generated in Ernakulam District on the basis of mode of disposal is tabulated in Table 6.3 and its graphical representation shown in the Figure 6.3.

Table 6.3: HW generated in Ernakulam District based on the disposal methods

HW as per the Disposal methods	Quantity generated (in ton/year)
Disposal in landfills	11467.41
Recyclable	1265.025
Incinerable	107.719
TOTAL	12840.154

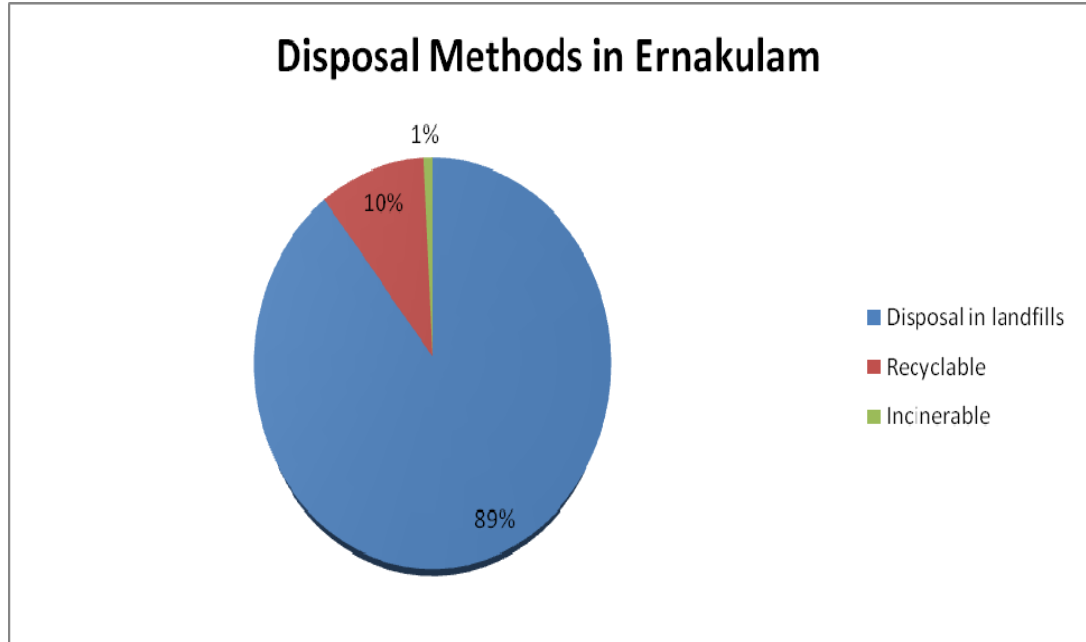


Figure 6.3: Graphical representation of HW generation in Ernakulum district based on the disposal methods.

6.5. HAZARDOUS WASTE INVENTORY OF KOTTAYAM DISTRICT

Kottayam is a district which is located in the south west of Kerala .The district has an area of about 2208 km², with population density of about 896 inhabitants/ km² . It is divided in 5 taluks. They are Kottayam, Meenachil, Changanaserry, Vaikom, and Kanjirapally.

Kottayam district comprises of numerous hazardous waste generating industries mainly Hindustan News Print Ltd, MRF tyres and vehicle servicing centres. In Kottayam 37 HW generating industries are identified.

6.5.1 CATEGORY –WISE HW GENERATED IN KOTTAYAM DISTRICT

Quantity of HW generated as per the process defined in Schedule I in Kottayam district is tabulated and shown in the table 6.4

Table 6.4: Category –wise HW generated in Kottayam District Schedule I

HW as per schedule I	Quantity generated (in ton/year)
Process No:5	5553.47
Process No:32	48506.15
Total	54059.62

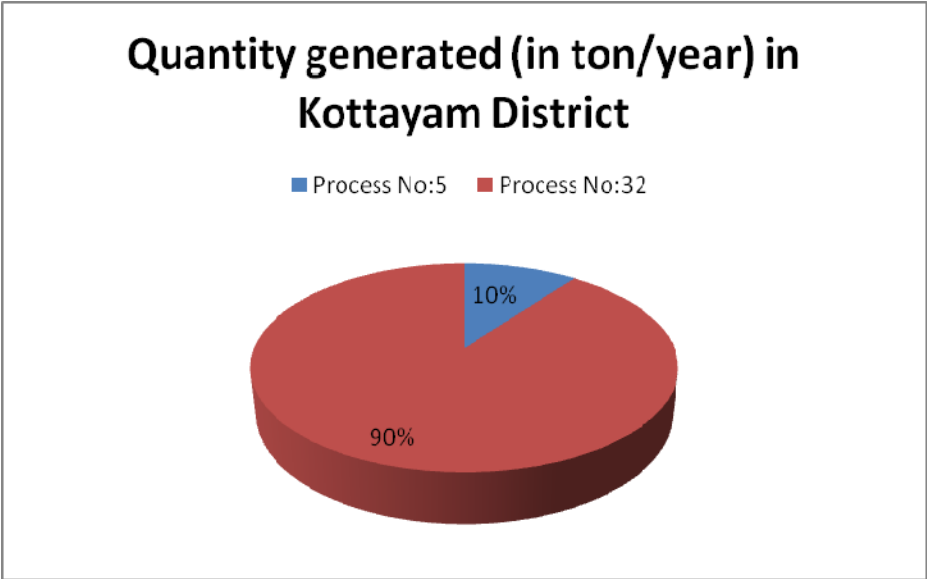


Figure 6.4: Graphical representation of HW generation in Kottayam District as per Schedule I

Quantity of HW generated as per the process defined in Schedule II in Kottayam district is tabulated and shown in the table 6.5. Its graphical representation shown in the figure 6.5.

Table 6.5: Category –wise HW generated in Kottayam District as per Schedule II

HW as per schedule II	Quantity generated (in ton/year)
Class (C1)	11.31
Total	11.31

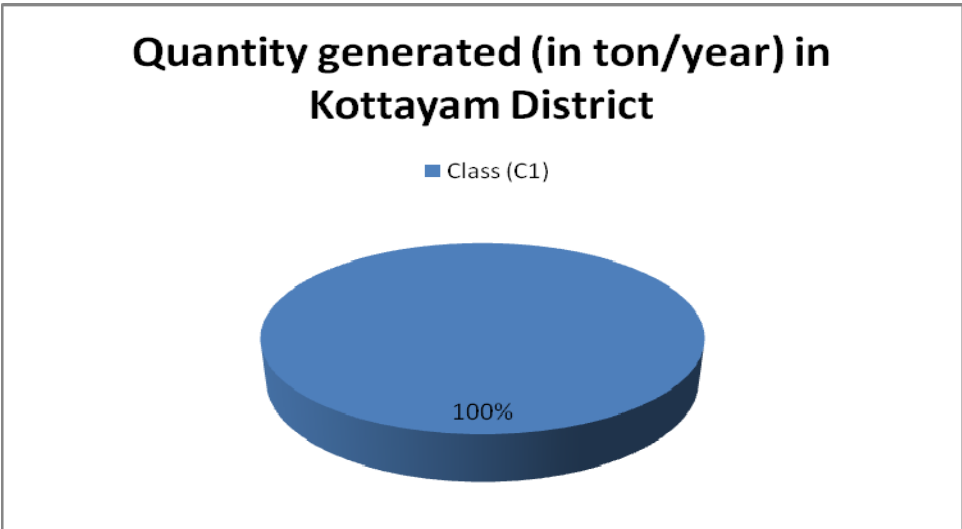


Figure 6.5: Graphical representation of HW generation in Kottayam District as per Schedule II

Quantity of HW generated in Kottayam district on the basis of mode of disposal is tabulated in table 6.6 and its graphical representation shown in Figure 6.6.

Table 6.6: HW generated in Kottayam district based on the disposal methods.

HW as per the Disposal methods	Quantity generated (in ton/year)
HW Disposal by landfill	189.385
Incinerable HW	0
Recyclable HW	54248.995

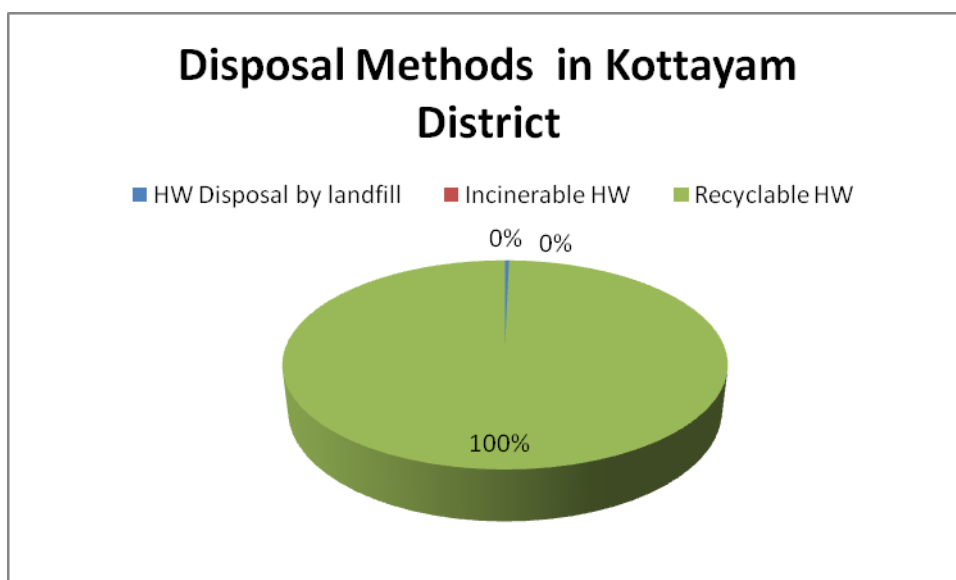


Figure 6.6: Graphical representation of HW generated Kottayam district on the mode of disposal.

6.6 HAZARDOUS WASTE INVENTORY OF IDUKKI DISTRICT

Idukki District has an area of about 4358 Km², with population density of about 254 inhabitants/ km². It is divided in 4 taluks. They are Udumbanchola, Thodupuzha, Devikulam and Peerumade. Idukki district comprises mainly Tuskar Veneers and Plywoods and vehicle serving centres are the main HW generating industries. In Idukki 37 HW generating industries are identified.

6.6.1 CATEGORY-WISE HW GENERATED IN IDUKKI DISTRICT

Quantity of HW generated as per the process defined in Schedule I and Schedule II in Idukki district is tabulated and shown in the table 6.7 Its graphical representation shown in the figure 6.7.

Table 6.7: Category-wise HW generated in Idukki district as per Schedule I

HW as per Schedule I	Quantity generated (in ton/year)
Process No:5	76.82
Process No:25	3.2
Process No: 37	17.93
Total	97.95

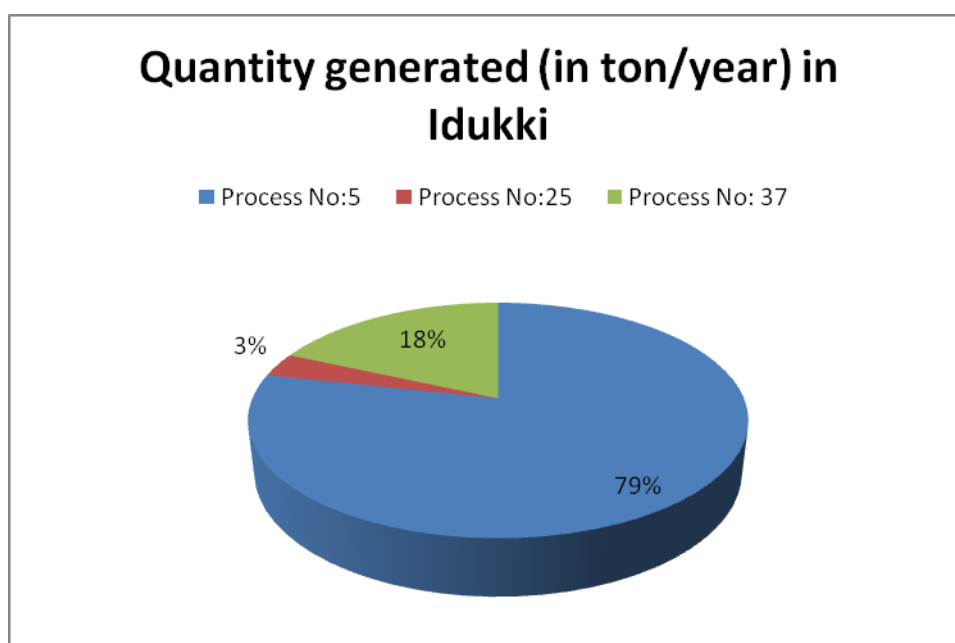


Figure 6.7: Category-wise HW generated in Idukki District as per Schedule I

Quantity of HW generated in Idukki district on the basis of mode disposal is tabulated in Table 6.8 and its graphical representation shown in the figure 6.8.

Table 6.8: HW generated in Idukki district based on the disposal methods

HW as per the Disposal methods	Quantity generated (in ton/year)
HW Disposal by landfill	65.22
Incinerable HW	0
Recyclable HW	135.67

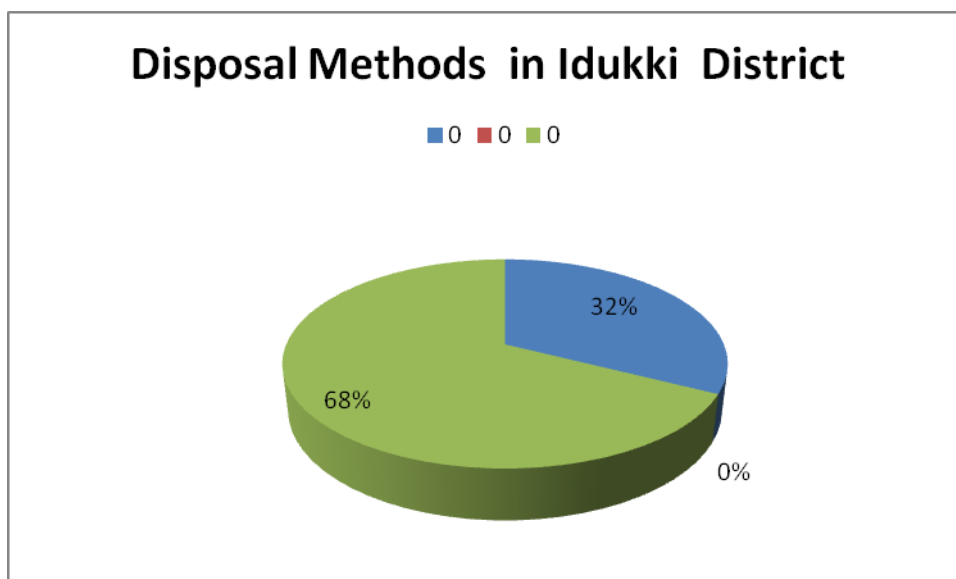


Figure 6.8: Graphical representation of HW generated in Idukki District on the mode of disposal

6.7 HAZARDOUS WASTE INVENTORY OF THRISSUR DISTRICT

Thrissur district has an area of about 3032 Sq.km with population density of about 1504 inhabitants/Km². It is divided in 6 taluks. They are Thrissur, Mukundapuram, Talappilly, Chavakkad and Kodungallur. Thrissur district comprises of numerous hazardous waste generating industries such as Nitta Gelatin India Ltd., Apollo tyres, Carborandum, KSE Ltd., MIL Control India Ltd., K.J.Lubes etc. In Thrissur 67 HW waste generating industries are identified.

6.7.1 CATEGORY-WISE HW GENERATED IN THRISSUR DISTRICT

Quantity of HW generated as per the process defined in Schedule I in Thrissur district is tabulated and shown in the Table 6.9. Its graphical representation shown in the Figure 6.9

Table 6.9: Category-wise HW generated in Thrissur as per Schedule I.

HW as per Schedule 1	Quantity generated (in ton/year)
Process No: 5	1391.151
Process No: 21	8.865
Process No: 35	7064.116
Process No: 37	96.865
Total	8560.997

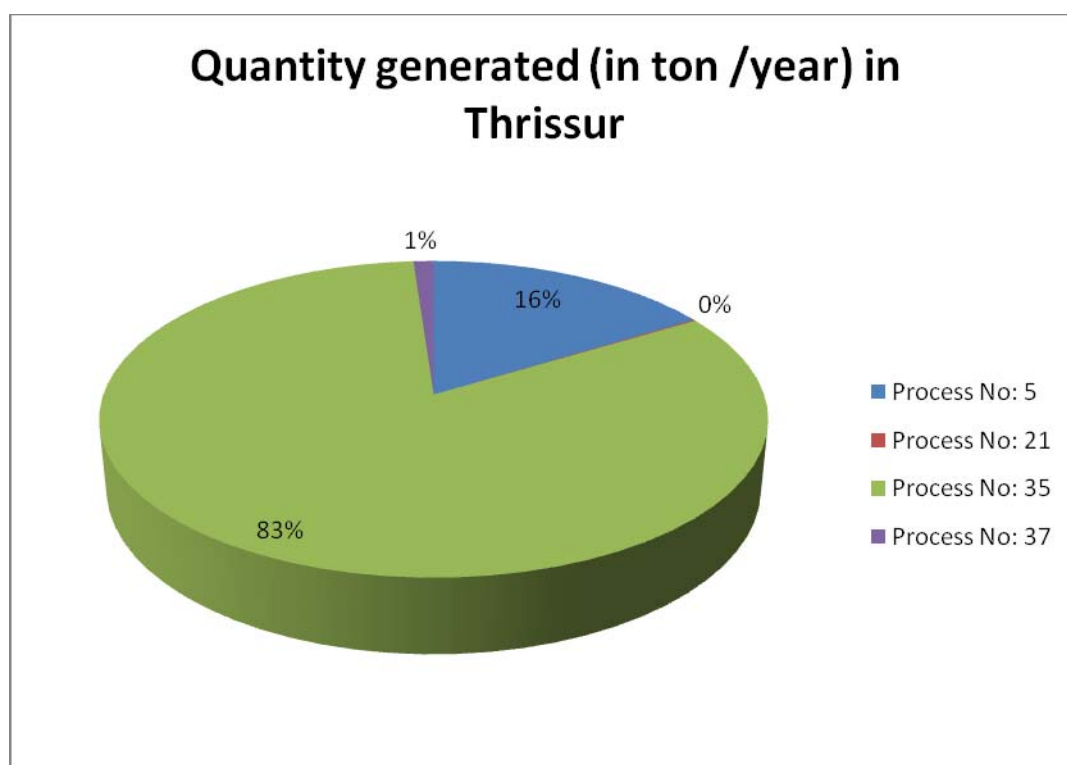


Figure 6.9: Graphical representation of HW generation in Thrissur District as per Schedule I.

Quantity of HW generated in Thrissur district on the basis of mode disposal is tabulated in Table 6.10 and its graphical representation shown in the figure 6.10.

Table 6.10: Category-wise HW generated in Thrissur as per Schedule II.

HW as per Schedule II	Quantity generated (in ton/year)
Class A	31.59
Class C	13.23
Total	44.82

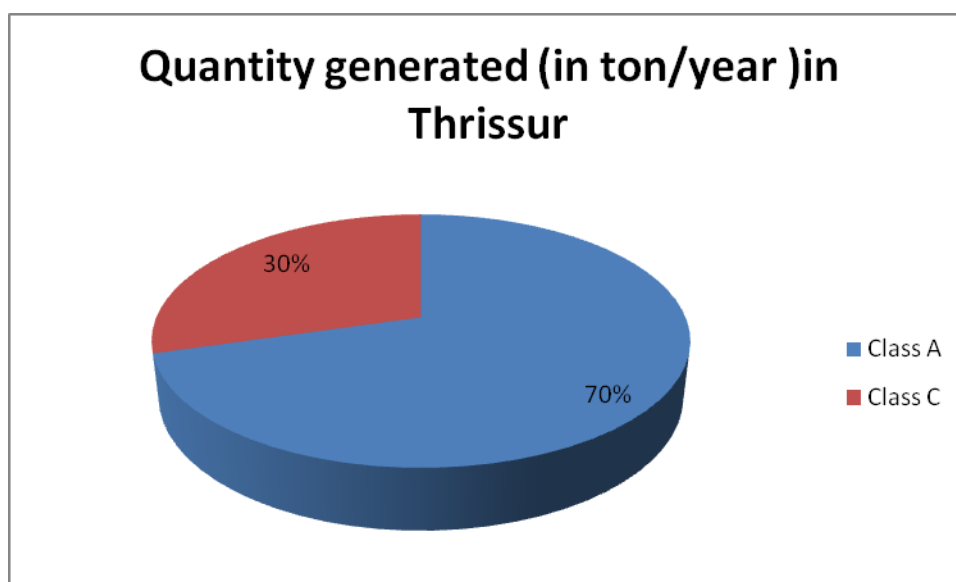


Figure 6.10: Graphical representation of HW generation in Thrissur District as per Schedule II.

Quantity of HW generated in Thrissur district on the basis of mode of disposal is tabulated in Table 6.11. and its graphical representation shown in the figure 6.11.

Table 6.11: HW generated in Thrissur district based on the disposal methods

HW as per Schedule II	Quantity generated in (ton/year)
Disposal in landfills	7190.51
Recyclable	1411.471
Incinerable	0

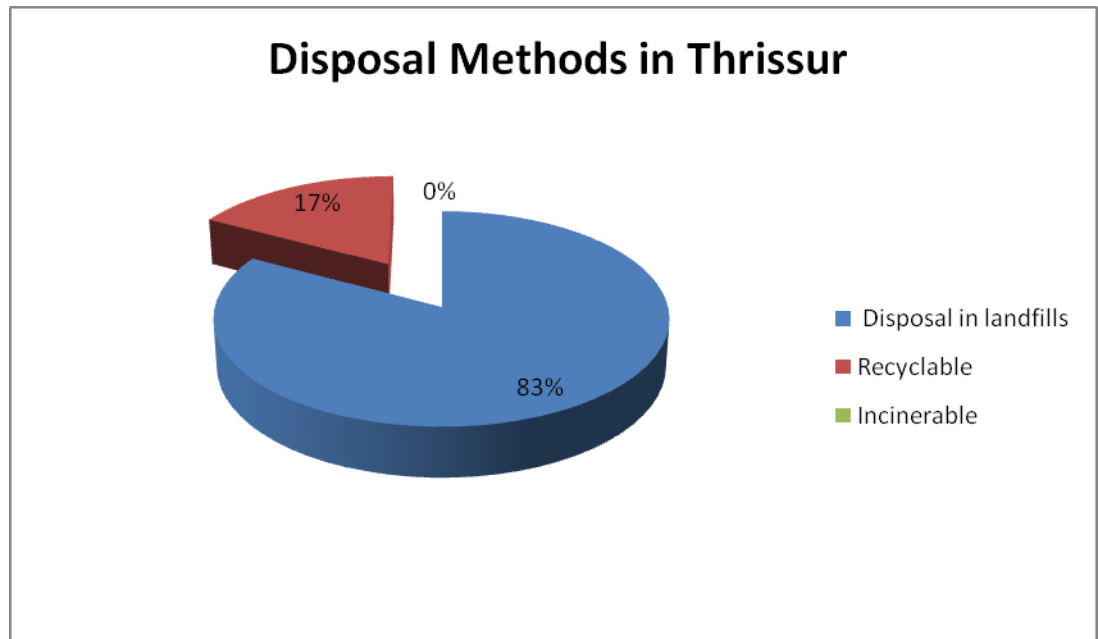


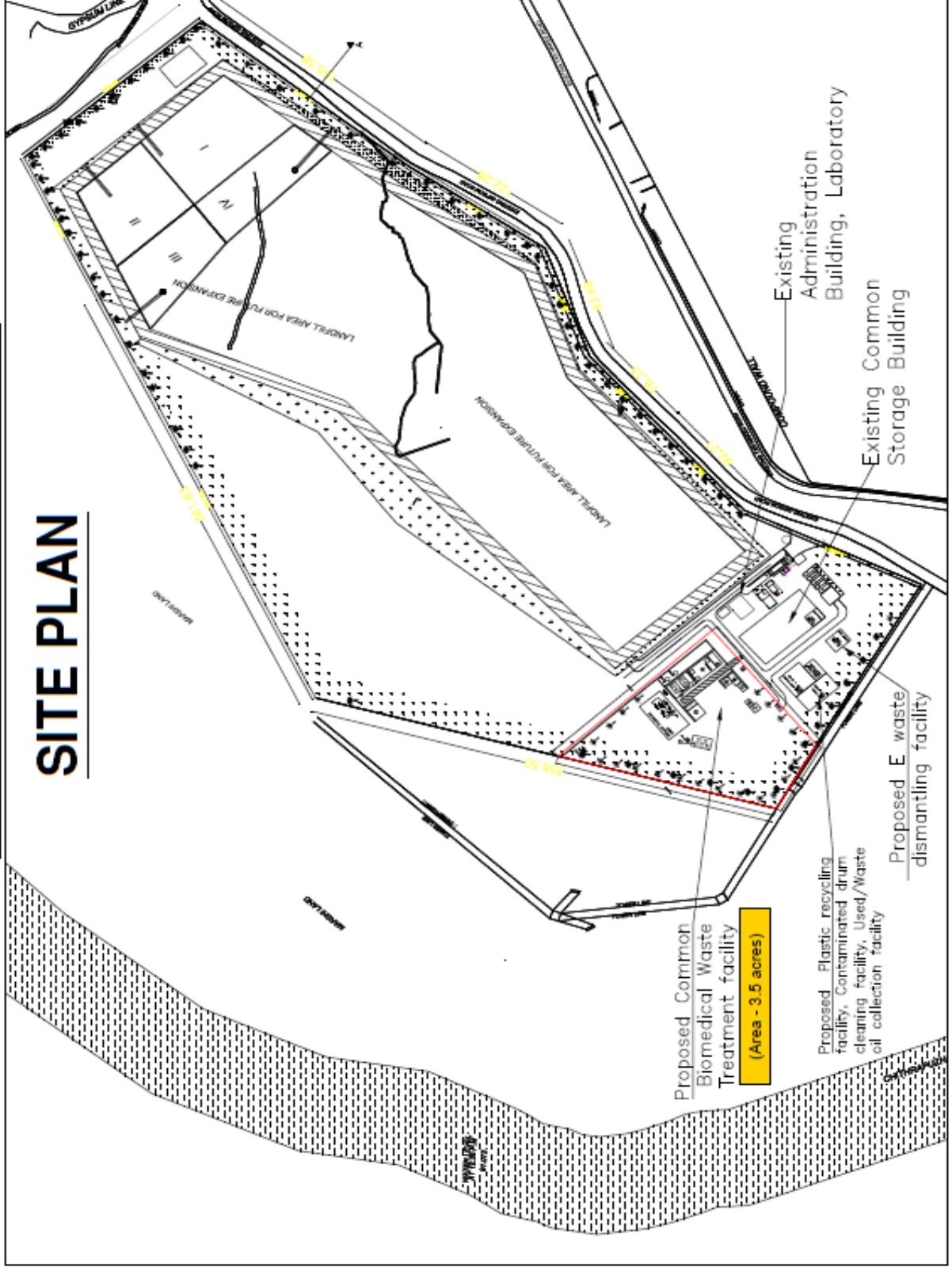
Figure 6.11: Graphical representation of HW generated Thrissur district on the mode of disposal.

ANNEXURE – I

SITE LAYOUT OF KEIL- TSDF

Common Biomedical Waste Treatment Facility (CBWTF)

SITE PLAN



Proposed Common Biomedical Waste Treatment facility (Area - 3.5 acres)

Proposed Plastic recycling facility, Contaminated drum cleaning facility, Used/Waste oil collection facility

Proposed E waste dismantling facility

Existing Administration Building, Laboratory

Existing Common Storage Building

ANNEXURE – II

HAZARDOUS AND OTHER WASTES (MANAGEMENT AND TRANSBOUNDARY MOVEMENT) RULES, 2016

[PUBLISHED IN THE GAZETTE OF INDIA, EXTRAORDINARY, PART II,
SECTION 3, SUB-SECTION (i)]

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 04th April, 2016

G.S.R No. 395 (E). - Whereas the draft rules, namely the Hazardous And Other Wastes (Management and Transboundary Movement) Rules, 2015, were published by the Government of India in the Ministry of Environment, Forest and Climate Change *vide* number G.S.R. 582(E), dated the 24th July, 2015 in the Gazette of India, Extraordinary Part II, section 3, sub-section (ii) inviting objections and suggestions from all persons likely to be affected thereby, before the expiry of the period of sixty days from the date on which copies of the Gazette containing the said notification were made available to the public;

AND WHEREAS the copies of the said Gazette containing the said notification were made available to the public on the 24th day of July, 2015;

AND WHEREAS the objections and suggestions received within the specified period from the public in respect of the said draft rules have been duly considered by the Central Government;

NOW, THEREFORE, in exercise of the powers conferred by sections 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), and in supersession of the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008, except as respects things done or omitted to be done before such supersession, the Central Government hereby makes the following rules, namely:-

CHAPTER I

PRELIMINARY

1. Short title and commencement. - (1) These rules may be called the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. Application. - These rules shall apply to the management of hazardous and other wastes as specified in the Schedules to these rules but shall not apply to -

- (a) waste-water and exhaust gases as covered under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) and the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981) and the rules made thereunder and as amended from time to time;
- (b) wastes arising out of the operation from ships beyond five kilometres of the relevant baseline as covered under the provisions of the Merchant Shipping Act, 1958 (44 of 1958) and the rules made thereunder and as amended from time to time;

- (c) radio-active wastes as covered under the provisions of the Atomic Energy Act, 1962 (33 of 1962) and the rules made thereunder and as amended from time to time;
- (d) bio-medical wastes covered under the Bio-Medical Wastes (Management and Handling) Rules, 1998 made under the Act and as amended from time to time; and
- (e) wastes covered under the Municipal Solid Wastes (Management and Handling) Rules, 2000 made under the Act and as amended from time to time.

3. Definitions. - (1) In these rules, unless the context otherwise requires,-

1. "Act" means the Environment (Protection) Act, 1986 (29 of 1986);
2. "actual user" means an occupier who procures and processes hazardous and other waste for reuse, recycling, recovery, pre-processing, utilisation including co-processing;
3. "authorisation" means permission for generation, handling, collection, reception, treatment, transport, storage, reuse, recycling, recovery, pre-processing, utilisation including co-processing and disposal of hazardous wastes granted under sub-rule (2) of rule 6;
4. "Basel Convention" means the United Nations Environment Programme Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal;
5. "captive treatment, storage and disposal facility" means a facility developed within the premises of an occupier for treatment, storage and disposal of wastes generated during manufacture, processing, treatment, package, storage, transportation, use, collection, destruction, conversion, offering for sale, transfer or the like of hazardous and other wastes;
6. "Central Pollution Control Board" means the Central Pollution Control Board constituted under sub-section (1) of section 3 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974);
7. "common treatment, storage and disposal facility" means a common facility identified and established individually or jointly or severally by the State Government, occupier, operator of a facility or any association of occupiers that shall be used as common facility by multiple occupiers or actual users for treatment, storage and disposal of the hazardous and other wastes;
8. "co-processing" means the use of waste materials in manufacturing processes for the purpose of energy or resource recovery or both and resultant reduction in the use of conventional fuels or raw materials or both through substitution;
9. "critical care medical equipment" means life saving equipment and includes such equipment as specified by the Ministry of Health and Family Welfare from time to time;
10. "disposal" means any operation which does not lead to reuse, recycling, recovery, utilisation including co-processing and includes physico-chemical treatment, biological treatment, incineration and disposal in secured landfill;

11. “export”, with its grammatical variations and cognate expressions, means taking out of India to a place outside India;
12. “exporter” means any person or occupier under the jurisdiction of the exporting country who exports hazardous or other wastes, including the country which exports hazardous or other waste;
13. “environmentally sound management of hazardous and other wastes” means taking all steps required to ensure that the hazardous and other wastes are managed in a manner which shall protect health and the environment against the adverse effects which may result from such waste;
14. “environmentally sound technologies” means any technology approved by the Central Government from time to time;
15. “facility” means any establishment wherein the processes incidental to the generation, handling, collection, reception, treatment, storage, reuse, recycling, recovery, pre-processing, co-processing, utilisation and disposal of hazardous and, or, other wastes are carried out;
16. “Form” means a form appended to these rules;
17. “hazardous waste” means any waste which by reason of characteristics such as physical, chemical, biological, reactive, toxic, flammable, explosive or corrosive, causes danger or is likely to cause danger to health or environment, whether alone or in contact with other wastes or substances, and shall include -
 - (i) waste specified under column (3) of Schedule I;
 - (ii) waste having equal to or more than the concentration limits specified for the constituents in class A and class B of Schedule II or any of the characteristics as specified in class C of Schedule II; and
 - (iii) wastes specified in Part A of Schedule III in respect of import or export of such wastes or the wastes not specified in Part A but exhibit hazardous characteristics specified in Part C of Schedule III;
18. “import”, with its grammatical variations and cognate expressions, means bringing into India from a place outside India;
19. “importer” mean any person or occupier who imports hazardous or other waste;
20. “manifest” means transporting document prepared and signed by the sender authorised in accordance with the provisions of these rules;
21. “occupier” in relation to any factory or premises, means a person who has, control over the affairs of the factory or the premises and includes in relation to any hazardous and other wastes, the person in possession of the hazardous or other waste;
22. “operator of disposal facility” means a person who owns or operates a facility for collection, reception, treatment, storage and disposal of hazardous and other wastes;
23. “other wastes” means wastes specified in Part B and Part D of Schedule III for import or export and includes all such waste generated indigenously within the country;

24. "pre-processing" means the treatment of waste to make it suitable for co-processing or recycling or for any further processing;
25. "recycling" means reclamation and processing of hazardous or other wastes in an environmentally sound manner for the originally intended purpose or for other purposes;
26. "reuse" means use of hazardous or other waste for the purpose of its original use or other use;
27. "recovery" means any operation or activity wherein specific materials are recovered;
28. "Schedule" means a Schedule appended to these rules;
29. "State Government" in relation to a Union territory means, the Administrator thereof appointed under article 239 of the Constitution;
30. "State Pollution Control Board" means the State Pollution Control Board constituted under section 4 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) and includes, in relation to a Union territory, the Pollution Control Committee;
31. "storage" mean storing any hazardous or other waste for a temporary period, at the end of which such waste is processed or disposed of;
32. "transboundary movement" means any movement of hazardous or other wastes from an area under the jurisdiction of one country to or through an area under the jurisdiction of another country or to or through an area not under the jurisdiction of any country, provided that at least two countries are involved in the movement;
33. "transport" means off-site movement of hazardous or other wastes by air, rail, road or water;
34. "transporter" means a person engaged in the off-site transportation of hazardous or other waste by air, rail, road or water;
35. "treatment" means a method, technique or process, designed to modify the physical, chemical or biological characteristics or composition of any hazardous or other waste so as to reduce its potential to cause harm;
36. "used oil" means any oil-
 - (i) derived from crude oil or mixtures containing synthetic oil including spent oil, used engine oil, gear oil, hydraulic oil, turbine oil, compressor oil, industrial gear oil, heat transfer oil, transformer oil and their tank bottom sludges; and
 - (ii) suitable for reprocessing, if it meets the specification laid down in Part A of Schedule V but does not include waste oil;
37. "utilisation" means use of hazardous or other waste as a resource;

38. "waste" means materials that are not products or by-products, for which the generator has no further use for the purposes of production, transformation or consumption.

Explanation.- for the purposes of this clause,

- (i) waste includes the materials that may be generated during, the extraction of raw materials, the processing of raw materials into intermediates and final products, the consumption of final products, and through other human activities and excludes residuals recycled or reused at the place of generation; and
 - (ii) by-product means a material that is not intended to be produced but gets produced in the production process of intended product and is used as such;
39. "waste oil" means any oil which includes spills of crude oil, emulsions, tank bottom sludge and slop oil generated from petroleum refineries, installations or ships and can be used as fuel in furnaces for energy recovery, if it meets the specifications laid down in Part-B of Schedule V either as such or after reprocessing.

(2) Words and expressions used in these rules and not defined but defined in the Act shall have the meanings respectively assigned to them in the Act.

CHAPTER II

PROCEDURE FOR MANAGEMENT OF HAZARDOUS AND OTHER WASTES

4. Responsibilities of the occupier for management of hazardous and other wastes.-

(1) For the management of hazardous and other wastes, an occupier shall follow the following steps, namely:-

- (a) prevention;
- (b) minimization;
- (c) reuse,
- (d) recycling;
- (e) recovery, utilisation including co-processing;
- (f) safe disposal.

(2) The occupier shall be responsible for safe and environmentally sound management of hazardous and other wastes.

(3) The hazardous and other wastes generated in the establishment of an occupier shall be sent or sold to an authorised actual user or shall be disposed of in an authorised disposal facility.

(4) The hazardous and other wastes shall be transported from an occupier's establishment to an authorised actual user or to an authorised disposal facility in accordance with the provisions of these rules.

(5) The occupier who intends to get its hazardous and other wastes treated and disposed of by the operator of a treatment, storage and disposal facility shall give to the operator of that facility, such specific information as may be needed for safe storage and disposal.

(6) The occupier shall take all the steps while managing hazardous and other wastes to-

- (a) contain contaminants and prevent accidents and limit their consequences on human beings and the environment; and
- (b) provide persons working in the site with appropriate training, equipment and the information necessary to ensure their safety.

5. Responsibilities of State Government for environmentally sound management of hazardous and other wastes. – (1) Department of Industry in the State or any other government agency authorised in this regard by the State Government, to ensure earmarking or allocation of industrial space or shed for recycling, pre-processing and other utilisation of hazardous or other waste in the existing and upcoming industrial park, estate and industrial clusters;

(2) Department of Labour in the State or any other government agency authorised in this regard by the State Government shall,-

- (a) ensure recognition and registration of workers involved in recycling, pre-processing and other utilisation activities;
- (b) assist formation of groups of such workers to facilitate setting up such facilities;
- (c) undertake industrial skill development activities for the workers involved in recycling, pre-processing and other utilisation;
- (d) undertake annual monitoring and to ensure safety and health of workers involved in recycling, pre-processing and other utilisation.

(3) Every State Government may prepare integrated plan for effective implementation of these provisions and to submit annual report to the Ministry of Environment, Forest and Climate Change, in the Central Government.

6. Grant of authorisation for managing hazardous and other wastes.- (1) Every occupier of the facility who is engaged in handling, generation, collection, storage, packaging, transportation, use, treatment, processing, recycling, recovery, pre-processing, co-processing, utilisation, offering for sale, transfer or disposal of the hazardous and other wastes shall be required to make an application in **Form 1** to the State Pollution Control Board and obtain an authorisation from the State Pollution Control Board within a period of sixty days from the date of publication of these rules. Such application for authorisation shall be accompanied with a copy each of the following documents, namely:-

- (a) consent to establish granted by the State Pollution Control Board under the Water (Prevention and Control of Pollution) Act, 1974 (25 of 1974) and the Air (Prevention and Control of Pollution) Act, 1981 (21 of 1981);
- (b) Consent to operate granted by the State Pollution Control Board under the Water (Prevention and Control of Pollution) Act, 1974 (25 of 1974) and/or Air (Prevention and Control of Pollution) Act, 1981, (21 of 1981);
- (c) in case of renewal of authorisation, a self-certified compliance report in respect of effluent, emission standards and the conditions specified in the authorisation for hazardous and other wastes:

Provided that an application for renewal of authorisation may be made three months before the expiry of such authorisation:

Provided further that-

- (i) any person authorised under the provisions of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008, prior to the date of commencement

of these rules, shall not be required to make an application for authorisation till the period of expiry of such authorisation;

- (ii) any person engaged in recycling or reprocessing of the hazardous waste specified in Schedule IV and having registration under the provisions of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008, shall not be required to make an application for authorisation till the period of expiry of such registration.

(2) On receipt of an application complete in all respects for the authorisation, the State Pollution Control Board may, after such inquiry as it considers necessary, and on being satisfied that the applicant possesses appropriate facilities for collection, storage, packaging, transportation, treatment, processing, use, destruction, recycling, recovery, pre-processing, co-processing, utilisation, offering for sale, transfer or disposal of the hazardous and other waste, as the case may be, and after ensuring technical capabilities and equipment complying with the standard operating procedure or other guidelines specified by the Central Pollution Control Board from time to time and through site inspection, grant within a period of one hundred and twenty days, an authorisation in **Form 2** to the applicant, which shall be valid for a period of five years subject to such conditions as may be laid down therein. For commonly recyclable hazardous waste as given in Schedule IV, the guidelines already prepared by the Central Pollution Control Board shall be followed:

Provided that in the case of an application for renewal of authorisation, the State Pollution Control Board may, before granting such authorisation, satisfy itself that there has been no violation of the conditions specified in the authorisation earlier granted by it and same shall be recorded in the inspection report.

(3) The authorisation granted by the State Pollution Control Board under sub-rule (2) shall be accompanied by a copy of the field inspection report signed by that Board indicating the adequacy of facilities for collection, storage, packaging, transportation, treatment, processing, use, destruction, recycling, recovery, pre-processing, co-processing, utilisation, offering for sale, transfer or disposal of the hazardous and other wastes and compliance to the guidelines or standard operating procedures specified by the Central Pollution Control Board from time to time.

(4) The State Pollution Control Board may, for the reasons to be recorded in writing and after giving reasonable opportunity of being heard to the applicant, refuse to grant any authorisation under these rules.

(5) Every occupier authorised under these rules, shall maintain a record of hazardous and other wastes managed by him in **Form 3** and prepare and submit to the State Pollution Control Board, an annual return containing the details specified in **Form 4** on or before the 30th day of June following the financial year to which that return relates.

(6) The State Pollution Control Board shall maintain a register containing particulars of the conditions imposed under these rules for management of hazardous and other wastes and it shall be open for inspection during office hours to any interested or affected person.

(7) The authorised actual user of hazardous and other wastes shall maintain records of hazardous and other wastes purchased in a passbook issued by the State Pollution Control Board along with the authorisation.

(8) Handing over of the hazardous and other wastes to the authorised actual user shall be only after making the entry into the passbook of the actual user.

7. Power to suspend or cancel an authorisation.- (1) The State Pollution Control Board, may, if in its opinion the holder of the authorisation has failed to comply with any of the conditions of the authorisation or with any provisions of the Act or these rules and after giving him a reasonable opportunity of being heard and after recording reasons thereof in writing cancel or suspend the authorisation issued under rule 6 for such period as it considers necessary in the public interest.

(2) Upon suspension or cancellation of the authorisation, the State Pollution Control Board may give directions to the person whose authorisation has been suspended or cancelled for the safe storage and management of the hazardous and other wastes, and such occupier shall comply with such directions.

8. Storage of hazardous and other wastes.- (1) The occupiers of facilities may store the hazardous and other wastes for a period not exceeding ninety days and shall maintain a record of sale, transfer, storage, recycling, recovery, pre-processing, co-processing and utilisation of such wastes and make these records available for inspection:

Provided that the State Pollution Control Board may extend the said period of ninety days in following cases, namely:-

- (i) small generators (up to ten tonnes per annum) up to one hundred and eighty days of their annual capacity;
- (ii) actual users and disposal facility operators up to one hundred and eighty days of their annual capacity,
- (iii) occupiers who do not have access to any treatment, storage, disposal facility in the concerned State; or
- (iv) the waste which needs to be specifically stored for development of a process for its recycling, recovery, pre-processing, co-processing or utilisation;
- (v) in any other case, on justifiable grounds up to one hundred and eighty days.

9. Utilisation of hazardous and other wastes.- (1) The utilisation of hazardous and other wastes as a resource or after pre-processing either for co-processing or for any other use, including within the premises of the generator (if it is not part of process), shall be carried out only after obtaining authorisation from the State Pollution Control Board in respect of waste on the basis of standard operating procedures or guidelines provided by the Central Pollution Control Board.

(2) Where standard operating procedures or guidelines are not available for specific utilisation, the approval has to be sought from Central Pollution Control Board which shall be granting approval on the basis of trial runs and thereafter, standard operating procedures or guidelines shall be prepared by Central Pollution Control Board:

Provided, if trial run has been conducted for particular waste with respect to particular utilisation and compliance to the environmental standards has been demonstrated, authorisation may be granted by the State Pollution Control Board with respect to the same waste and utilisation, without need of separate trial run by Central Pollution Control Board and such cases of successful trial run, Central Pollution Control Board shall intimate all the State Pollution Control Board regarding the same.

(3) No trial runs shall be required for co-processing of waste in cement plants for which guidelines by the Central Pollution Control Board are already available; however, the actual users shall

ensure compliance to the standards notified under the Environment (Protection) Act, 1986 (29 of 1986), for cement plant with respect to co-processing of waste:

Provided that till the time the standards are notified, the procedure as applicable to other kind of utilisation of hazardous and other waste, as enumerated above shall be followed.

10. Standard Operating Procedure or guidelines for actual users.- The Ministry of Environment, Forest and Climate Change or the Central Pollution Control Board may issue guidelines or standard operating procedures for environmentally sound management of hazardous and other wastes from time to time.

CHAPTER III

IMPORT AND EXPORT OF HAZARDOUS AND OTHER WASTES

11. Import and export (transboundary movement) of hazardous and other wastes.- The Ministry of Environment, Forest and Climate Change shall be the nodal Ministry to deal with the transboundary movement of the hazardous and other wastes in accordance with the provisions of these rules.

12. Strategy for Import and export of hazardous and other wastes.- (1) No import of the hazardous and other wastes from any country to India for disposal shall be permitted.

(2) The import of hazardous and other wastes from any country shall be permitted only for recycling, recovery, reuse and utilisation including co-processing.

(3) The import of hazardous waste in Part A of Schedule III may be allowed to actual users with the prior informed consent of the exporting country and shall require the permission of the Ministry of Environment, Forest and Climate Change.

(4) The import of other wastes in Part B of Schedule III may be allowed to actual users with the permission of the Ministry of Environment, Forest and Climate Change.

(5) The import of other wastes in Part D of Schedule III will be allowed as per procedure given in rule 13 and as per the note below the said Schedule.

(6) No import of the hazardous and other wastes specified in Schedule VI shall be permitted.

(7) The export of hazardous and other wastes from India listed in Part A and Part B of Schedule III and Schedule VI shall be with the permission of Ministry of Environment, Forest and Climate Change. In case of applications for export of hazardous and other waste listed in Part A of Schedule III and Schedule VI, they shall be considered on the basis of prior informed consent of the importing country.

(8) The import and export of hazardous and other wastes not specified in Schedule III, but exhibiting the hazardous characteristics outlined in Part C of Schedule III shall require prior written permission of the Ministry of Environment, Forest and Climate Change before it is imported to or exported from India, as the case may be.

13. Procedure for import of hazardous and other wastes.- (1) Actual users intending to import or transit for transboundary movement of hazardous and other wastes specified in Part A and Part B of Schedule III shall apply in **Form 5** along with the documents listed therein, to the Ministry of Environment, Forest and Climate Change for the proposed import together with the prior informed consent of the exporting country in respect of Part A of Schedule III waste, and shall send a copy of the application, simultaneously, to the concerned State Pollution Control Board for information and the acknowledgement in this respect from the concerned State Pollution Control Board shall be submitted to the Ministry of Environment, Forest and Climate Change along with the application.

(2) For the import of other wastes listed in Part D of Schedule III, the importer shall not require the permission of the Ministry of Environment, Forest and Climate Change. However, the importer shall furnish the required information as per **Form 6** to the Customs authorities, accompanied with the following documents in addition to those listed in Schedule VIII, wherever applicable. For used electrical and electronic assemblies listed at serial numbers 4 (e) to 4(i) of Schedule VIII (Basel No. B1110), there is no specific requirement of documentation under these rules:

- (a) the import license from Directorate General of Foreign Trade, if applicable;
- (b) the valid consents under the Water (Prevention and Control of Pollution) Act, 1974 (25 of 1974) and the Air (Prevention and Control of Pollution) Act, 1981 (21 of 1981) and the authorisation under these rules as well as the authorisation under the E-Waste (Management and Handling) Rules, 2011, as amended from time to time, whichever applicable;
- (c) importer who is a trader, importing waste on behalf of actual users, shall obtain one time authorisation in **Form 7** and copy of this authorisation shall be appended to **Form 6**.

(3) For Part B of Schedule III, in case of import of any used electrical and electronic assemblies or spares or part or component or consumables as listed under Schedule I of the E-Waste (Management and Handling) Rules, 2011, as amended from time to time, the importer need to obtain extended producer responsibility-authorisation as producer under the said E-Waste (Management and Handling) Rules, 2011.

(4) Prior to clearing of consignment of wastes listed in Part D of Schedule III, the Custom authorities shall verify the documents as given in column (3) of Schedule VIII.

(5) On receipt of the complete application with respect to Part A and Part B of Schedule III, the Ministry of Environment, Forest and Climate Change shall examine the application considering the comments and observations, if any, received from the State Pollution Control Boards, and may grant the permission for import within a period of sixty days subject to the condition that the importer has -

- (i) the environmentally sound facilities;
- (ii) adequate arrangements for treatment and disposal of wastes generated;
- (iii) a valid authorisation and consents from the State Pollution Control Board;
- (iv) prior informed consent from the exporting country in case of Part A of Schedule III wastes.

(6) The Ministry of Environment, Forest and Climate Change shall forward a copy of the permission to the concerned Port and Customs authorities, Central Pollution Control Board and the concerned State Pollution Control Board for ensuring compliance with respect to their respective functions given in Schedule VII.

(7) The importer of the hazardous and other wastes shall maintain records of the hazardous and other waste imported by him in **Form 3** and the record so maintained shall be made available for inspection.

(8) The importer of the hazardous and other wastes shall file an annual return in **Form 4** to the State Pollution Control Board on or before the 30th day of June following the financial year to which that return relates.

(9) Samples of hazardous and other wastes being imported for testing or research and development purposes up to 1000 gm or 1000 ml shall be exempted from need of taking permission for import under these rules.

(10) The Port and Customs authorities shall ensure that shipment is accompanied with the movement document as given in **Form 6** and the test report of analysis of the waste, consignment, wherever applicable, from a laboratory accredited or recognised by the exporting country. In case of any doubt, the customs may verify the analysis.

14. Procedure for Export of hazardous and other wastes from India.- (1) Any occupier intending to export waste specified in Part A of Schedule III, Part B of Schedule III and Schedule VI, shall make an application in **Form 5** along with insurance cover to the Ministry of Environment, Forest and Climate Change for the proposed transboundary movement of the hazardous and other wastes together with the prior informed consent in writing from the importing country in respect of wastes specified in Part A of Schedule III and Schedule VI.

(2) On receipt of an application under sub-rule (1), the Ministry of Environment, Forest and Climate Change may give permission for the proposed export within a period of sixty days from the date of submission of complete application and may impose such conditions as it may consider necessary.

(3) The Ministry of Environment, Forest and Climate Change shall forward a copy of the permission granted under sub-rule (2) to the State Pollution Control Board of the State where the waste is generated and the Pollution Control Board of the State where the port of export is located and the concerned Port and Customs authorities for ensuring compliance of the conditions of the export permission.

(4) The exporter shall ensure that no consignment is shipped before the prior informed consent is received from the importing country, wherever applicable.

(5) The exporter shall also ensure that the shipment is accompanied with movement document in **Form 6**.

(6) The exporter of the hazardous and other wastes shall maintain the records of the hazardous or other waste exported by him in **Form 3** and the record so maintained shall be available for inspection.

15. Illegal traffic.- (1) The export and import of hazardous or other wastes from and into India, respectively shall be deemed illegal, if,-

- (i) it is without permission of the Central Government in accordance with these rules; or
- (ii) the permission has been obtained through falsification, mis-representation or fraud; or
- (iii) it does not conform to the shipping details provided in the movement documents; or

(iv) it results in deliberate disposal (i.e., dumping) of hazardous or other waste in contravention of the Basel Convention and of general principles of international or domestic law.

(2) In case of illegal import of the hazardous or other waste, the importer shall re-export the waste in question at his cost within a period of ninety days from the date of its arrival into India and its implementation will be ensured by the concerned Port and the Custom authority. In case of disposal of such waste by the Port and Custom authorities, they shall do so in accordance with these rules with the permission of the Pollution Control Board of the State where the Port exists.

(3) In case of illegal import of hazardous or other waste, where the importer is not traceable then the waste either can be sold by the Customs authority to any user having authorisation under these rules from the concerned State Pollution Control Board or can be sent to authorised treatment, storage and disposal facility.

CHAPTER - IV

TREATMENT, STORAGE AND DISPOSAL FACILITY FOR HAZARDOUS AND OTHER WASTES

16. Treatment, storage and disposal facility for hazardous and other wastes.- (1) The State Government, occupier, operator of a facility or any association of occupiers shall individually or jointly or severally be responsible for identification of sites for establishing the facility for treatment, storage and disposal of the hazardous and other waste in the State.

(2) The operator of common facility or occupier of a captive facility, shall design and set up the treatment, storage and disposal facility as per technical guidelines issued by the Central Pollution Control Board in this regard from time to time and shall obtain approval from the State Pollution Control Board for design and layout in this regard.

(3) The State Pollution Control Board shall monitor the setting up and operation of the common or captive treatment, storage and disposal facility, regularly.

(4) The operator of common facility or occupier of a captive facility shall be responsible for safe and environmentally sound operation of the facility and its closure and post closure phase, as per guidelines or standard operating procedures issued by the Central Pollution Control Board from time to time.

(5) The operator of common facility or occupier of a captive facility shall maintain records of hazardous and other wastes handled by him in **Form 3**.

(6) The operator of common facility or occupier of a captive facility shall file an annual return in **Form 4** to the State Pollution Control Board on or before the 30th day of June following the financial year to which that return relates.

CHAPTER - V

PACKAGING, LABELLING, AND TRANSPORT OF HAZARDOUS AND OTHER WASTES.

17. Packaging and Labelling.- (1) Any occupier handling hazardous or other wastes and operator of the treatment, storage and disposal facility shall ensure that the hazardous and other wastes are packaged in a manner suitable for safe handling, storage and transport as per the guidelines issued by the Central Pollution Control Board from time to time. The labelling shall be done as per **Form 8**.

(2) The label shall be of non-washable material, weather proof and easily visible.

18. Transportation of hazardous and other wastes.- (1) The transport of the hazardous and other waste shall be in accordance with the provisions of these rules and the rules made by the Central Government under the Motor Vehicles Act, 1988 and the guidelines issued by the Central Pollution Control Board from time to time in this regard.

(2) The occupier shall provide the transporter with the relevant information in **Form 9**, regarding the hazardous nature of the wastes and measures to be taken in case of an emergency and shall label the hazardous and other wastes containers as per **Form 8**.

(3) In case of transportation of hazardous and other waste for final disposal to a facility existing in a State other than the State where the waste is generated, the sender shall obtain 'No Objection Certificate' from the State Pollution Control Board of both the States.

(4) In case of transportation of hazardous and other waste for recycling or utilisation including co-processing, the sender shall intimate both the State Pollution Control Boards before handing over the waste to the transporter.

(5) In case of transit of hazardous and other waste for recycling, utilisation including co-processing or disposal through a State other than the States of origin and destination, the sender shall give prior intimation to the concerned State Pollution Control Board of the States of transit before handing over the wastes to the transporter.

(6) In case of transportation of hazardous and other waste, the responsibility of safe transport shall be either of the sender or the receiver whosoever arranges the transport and has the necessary authorisation for transport from the concerned State Pollution Control Board. This responsibility should be clearly indicated in the manifest.

(7) The authorisation for transport shall be obtained either by the sender or the receiver on whose behalf the transport is being arranged.

19. Manifest system (Movement Document) for hazardous and other waste to be used within the country only.- (1) The sender of the waste shall prepare seven copies of the manifest in **Form 10** comprising of colour code indicated below and all seven copies shall be signed by the sender:

Copy number with colour code	Purpose
(1)	(2)
Copy 1 (White)	To be forwarded by the sender to the State Pollution Control Board after signing all the seven copies.
Copy 2 (Yellow)	To be retained by the sender after taking signature on it from the transporter and the rest of the five signed copies to be carried by the transporter.
Copy 3 (Pink)	To be retained by the receiver (actual user or treatment storage and disposal facility operator) after receiving the waste and the remaining four copies are to be duly signed by the receiver.
Copy 4 (Orange)	To be handed over to the transporter by the receiver after accepting waste.
Copy 5 (Green)	To be sent by the receiver to the State Pollution Control Board.
Copy 6 (Blue)	To be sent by the receiver to the sender.
Copy 7 (Grey)	To be sent by the receiver to the State Pollution Control Board of the sender in case the sender is in another State.

(2) The sender shall forward copy 1 (white) to the State Pollution Control Board, and in case the hazardous or other wastes is likely to be transported through any transit State, the sender shall intimate State Pollution Control Boards of transit States about the movement of the waste.

(3) No transporter shall accept waste from the sender for transport unless it is accompanied by signed copies 3 to 7 of the manifest.

(4) The transporter shall submit copies 3 to 7 of the manifest duly signed with date to the receiver along with the waste consignment.

(5) The receiver after acceptance of the waste shall hand over copy 4 (orange) to the transporter and send copy 5 (green) to his State Pollution Control Board and send copy 6 (blue) to the sender and the copy 3 (pink) shall be retained by the receiver.

(6) The copy 7 (grey) shall only be sent to the State Pollution Control Board of the sender, if the sender is in another State.

CHAPTER VI MISCELLANIOUS

20. Records and returns.- (1) The occupier handling hazardous or other wastes and operator of disposal facility shall maintain records of such operations in **Form 3**.

(2) The occupier handling hazardous and other wastes and operator of disposal facility shall send annual returns to the State Pollution Control Board in **Form 4**.

(3) The State Pollution Control Board based on the annual returns received from the occupiers and the operators of the facilities for disposal of hazardous and other wastes shall prepare an annual inventory of the waste generated; waste recycled, recovered, utilised including co-processed; waste re-exported and waste disposed and submit to the Central Pollution Control Board by the 30th day of September every year. The State Pollution Control Board shall also prepare the inventory of hazardous waste generators, actual users, and common and captive

disposal facilities and shall submit the information to Central Pollution Control Board every two years.

(4) The Central Pollution Control Board shall prepare the consolidated review report on management of hazardous and other wastes and forward it to the Ministry of Environment, Forest and Climate Change, along with its recommendations before the 30th day of December once in every year.

21. Responsibility of authorities. - The authority specified in column (2) of Schedule VII shall perform the duties as specified in column (3) of the said Schedule subject to the provisions of these rules.

22. Accident reporting. - Where an accident occurs at the facility of the occupier handling hazardous or other wastes and operator of the disposal facility or during transportation, the occupier or the operator or the transporter shall immediately intimate the State Pollution Control Board through telephone, e-mail about the accident and subsequently send a report in **Form 11**.

23. Liability of occupier, importer or exporter and operator of a disposal facility.-

(1) The occupier, importer or exporter and operator of the disposal facility shall be liable for all damages caused to the environment or third party due to improper handling and management of the hazardous and other waste.

(2) The occupier and the operator of the disposal facility shall be liable to pay financial penalties as levied for any violation of the provisions under these rules by the State Pollution Control Board with the prior approval of the Central Pollution Control Board.

24. Appeal.- (1) Any person aggrieved by an order of suspension or cancellation or refusal of authorisation or its renewal passed by the State Pollution Control Board may, within a period of thirty days from the date on which the order is communicated to him, prefer an appeal in **Form 12** to the Appellate Authority, namely, the Environment Secretary of the State.

(2) The Appellate Authority may entertain the appeal after expiry of the said period of thirty days, if it is satisfied that the appellant was prevented by sufficient cause from filing the appeal in time.

(3) Every appeal filed under this rule shall be disposed of within a period of sixty days from the date of its filing.

SCHEDULE I

[See rule 3 (1) (17) (i)]

List of processes generating hazardous wastes

S.No.	Processes	Hazardous Waste*
(1)	(2)	(3)
1.	Petrochemical processes and pyrolytic operations	1.1 Furnace or reactor residue and debris 1.2 Tarry residues and still bottoms from distillation 1.3 Oily sludge emulsion 1.4 Organic residues 1.5 Residues from alkali wash of fuels

(1)	(2)	(3)
		1.6 Spent catalyst and molecular sieves 1.7 Oil from wastewater treatment
2.	Crude oil and natural gas production	2.1 Drill cuttings excluding those from water based mud 2.2 Sludge containing oil 2.3 Drilling mud containing oil
3.	Cleaning, emptying and maintenance of petroleum oil storage tanks including ships	3.1 cargo residue, washing water and sludge containing oil 3.2 cargo residue and sludge containing chemicals 3.3 Sludge and filters contaminated with oil 3.4 Ballast water containing oil from ships
4.	Petroleum refining or re-processing of used oil or recycling of waste oil	4.1 Oil sludge or emulsion 4.2 Spent catalyst 4.3 Slop oil 4.4 Organic residue from processes 4.5 Spent clay containing oil
5.	Industrial operations using mineral or synthetic oil as lubricant in hydraulic systems or other applications	5.1 Used or spent oil 5.2 Wastes or residues containing oil 5.3 Waste cutting oils
6.	Secondary production and / or industrial use of zinc	6.1 Sludge and filter press cake arising out of production of Zinc Sulphate and other Zinc Compounds. 6.2 Zinc fines or dust or ash or skimmings in dispersible form 6.3 Other residues from processing of zinc ash or skimmings 6.4 Flue gas dust and other particulates
7.	Primary production of zinc or lead or copper and other non-ferrous metals except aluminium	7.1 Flue gas dust from roasting 7.2 Process residues 7.3 Arsenic-bearing sludge 7.4 Non-ferrous metal bearing sludge and residue. 7.5 Sludge from scrubbers
8.	Secondary production of copper	8.1 Spent electrolytic solutions 8.2 Sludge and filter cakes 8.3 Flue gas dust and other particulates
9.	Secondary production of lead	9.1 Lead bearing residues 9.2 Lead ash or particulate from flue gas 9.3 Acid from used batteries
10.	Production and/or industrial use of cadmium and arsenic and their compounds	10.1 Residues containing cadmium and arsenic
11.	Production of primary and secondary aluminum	11.1 Sludges from off-gas treatment 11.2 Cathode residues including pot lining wastes 11.3 Tar containing wastes 11.4 Flue gas dust and other particulates 11.5 Drosses and waste from treatment of salt sludge

(1)	(2)	(3)
		11.6 Used anode butts 11.7 Vanadium sludge from alumina refineries
12.	Metal surface treatment, such as etching, staining, polishing, galvanizing, cleaning, degreasing, plating, etc.	12.1 Acidic and alkaline residues 12.2 Spent acid and alkali 12.3 Spent bath and sludge containing sulphide, cyanide and toxic metals 12.4 Sludge from bath containing organic solvents 12.5 Phosphate sludge 12.6 Sludge from staining bath 12.7 Copper etching residues 12.8 Plating metal sludge
13.	Production of iron and steel including other ferrous alloys (electric furnace; steel rolling and finishing mills; Coke oven and by products plant)	13.1 Spent pickling liquor 13.2 Sludge from acid recovery unit 13.3 Benzol acid sludge 13.4 Decanter tank tar sludge 13.5 Tar storage tank residue 13.6 Residues from coke oven by product plant.
14.	Hardening of steel	14.1 Cyanide-, nitrate-, or nitrite -containing sludge 14.2 Spent hardening salt
15.	Production of asbestos or asbestos-containing materials	15.1 Asbestos-containing residues 15.2 Discarded asbestos 15.3 Dust or particulates from exhaust gas treatment.
16.	Production of caustic soda and chlorine	16.1 Mercury bearing sludge generated from mercury cell process 16.2 Residue or sludges and filter cakes 16.3 Brine sludge
17.	Production of mineral acids	17.1 Process acidic residue, filter cake, dust 17.2 Spent catalyst
18.	Production of nitrogenous and complex fertilizers	18.1 Spent catalyst 18.2 Carbon residue 18.3 Sludge or residue containing arsenic 18.4 Chromium sludge from water cooling tower
19.	Production of phenol	19.1 Residue or sludge containing phenol 19.2 Spent catalyst
20.	Production and/or industrial use of solvents	20.1 Contaminated aromatic, aliphatic or naphthenic solvents may or may not be fit for reuse. 20.2 Spent solvents 20.3 Distillation residues 20.4 Process Sludge
21.	Production and/or industrial use of paints, pigments, lacquers, varnishes and inks	21.1 Process wastes, residues and sludges 21.2 Spent solvent
22.	Production of plastics	22.1 Spent catalysts 22.2 Process residues
23.	Production and /or industrial use of glues, organic cements,	23.1 Wastes or residues (not made with vegetable or animal materials)

(1)	(2)	(3)
	adhesive and resins	23.2 Spent solvents
24.	Production of canvas and textiles	24.1 Chemical residues
25.	Industrial production and formulation of wood preservatives	25.1 Chemical residues 25.2 Residues from wood alkali bath
26.	Production or industrial use of synthetic dyes, dye-intermediates and pigments	26.1 Process waste sludge/residues containing acid, toxic metals, organic compounds 26.2 Dust from air filtration system 26.3 Spent acid 26.4 Spent solvent 26.5 Spent catalyst
27.	Production of organic-silicone compound	27.1 Process residues
28.	Production/formulation of drugs/pharmaceutical and health care product	28.1 Process Residue and wastes 28.2 Spent catalyst 28.3 Spent carbon 28.4 Off specification products 28.5 Date-expired products 28.6 Spent solvents
29.	Production, and formulation of pesticides including stock-piles	29.1 Process wastes or residues 29.2 Sludge containing residual pesticides 29.3 Date-expired and off-specification pesticides 29.4 Spent solvents 29.5 Spent catalysts 29.6 Spent acids
30.	Leather tanneries	30.1 Chromium bearing residue and sludge
31.	Electronic Industry	31.1 Process residue and wastes 31.2 Spent etching chemicals and solvents
32.	Pulp and Paper Industry	32.1 Spent chemicals 32.2 Corrosive wastes arising from use of strong acid and bases 32.3 Process sludge containing adsorbable organic halides(AOX)
33.	Handling of hazardous chemicals and wastes	33.1 Empty barrels/containers/liners contaminated with hazardous chemicals /wastes 33.2 Contaminated cotton rags or other cleaning materials
34.	De-contamination of barrels / containers used for handling of hazardous wastes/chemicals	34.1 Chemical-containing residue arising from decontamination. 34.2 Sludge from treatment of waste water arising out of cleaning / disposal of barrels / containers
35.	Purification and treatment of exhaust air/gases, water and waste water from the processes in this schedule and common industrial effluent treatment plants (CETP's)	35.1 Exhaust Air or Gas cleaning residue 35.2 Spent ion exchange resin containing toxic metals 35.3 Chemical sludge from waste water treatment 35.4 Oil and grease skimming 35.5 Chromium sludge from cooling water
36.	Purification process for organic	36.1 Any process or distillation residue

(1)	(2)	(3)
	compounds/solvents	36.2 Spent carbon or filter medium
37.	Hazardous waste treatment processes, e.g. pre-processing, incineration and concentration	37.1 Sludge from wet scrubbers 37.2 Ash from incinerator and flue gas cleaning residue 37.3 Concentration or evaporation residues
38.	Chemical processing of Ores containing heavy metals such as Chromium, Manganese, Nickel, Cadmium etc.	38.1 Process residues 38.2 Spent acid

* The inclusion of wastes contained in this Schedule does not preclude the use of Schedule II to demonstrate that the waste is not hazardous. In case of dispute, the matter would be referred to the Technical Review Committee constituted by Ministry of Environment, Forest and Climate Change.

Note: The high volume low effect wastes such as fly ash, Phosphogypsum, red mud, jarosite, Slags from pyrometallurgical operations, mine tailings and ore beneficiation rejects are excluded from the category of hazardous wastes. Separate guidelines on the management of these wastes shall be issued by Central Pollution Control Board.

SCHEDULE II
[See rule 3 (1) (17) (ii)]

List of waste constituents with concentration limits

Class A: Based on leachable concentration limits [Toxicity Characteristic Leaching Procedure (TCLP) or Soluble Threshold Limit Concentration (STLC)]

Class	Constituents	Concentration in mg/l
(1)	(2)	(3)
A1	Arsenic	5.0
A2	Barium	100.0
A3	Cadmium	1.0
A4	Chromium and/or Chromium (III) compounds	5.0
A5	Lead	5.0
A6	Manganese	10.0
A7	Mercury	0.2
A8	Selenium	1.0
A9	Silver	5.0
A10	Ammonia	50*
A11	Cyanide	20*
A12	Nitrate (as nitrate-nitrogen)	1000.0
A13	Sulphide (as H ₂ S)	5.0
A14	1,1-Dichloroethylene	0.7
A15	1,2-Dichloroethane	0.5
A16	1,4-Dichlorobenzene	7.5
A17	2,4,5-Trichlorophenol	400.0
A18	2,4,6-Trichlorophenol	2.0
A19	2,4-Dinitrotoluene	0.13
A20	Benzene	0.5
A21	Benzo (a) Pyrene	0.001
A22	Bromodichloromethane	6.0
A23	Bromoform	10.0
A24	Carbon tetrachloride	0.5
A25	Chlorobenzene	100.0
A26	Chloroform	6.0
A27	Cresol (ortho+ meta+ para)	200.0
A28	Dibromochloromethane	10.0
A29	Hexachlorobenzene	0.13
A30	Hexachlorobutadiene	0.5
A31	Hexachloroethane	3.0
A32	Methyl ethyl ketone	200.0
A33	Naphthalene	5.0
A34	Nitrobenzene	2.0
A35	Pentachlorophenol	100.0
A36	Pyridine	5.0
A37	Tetrachloroethylene	0.7
A38	Trichloroethylene	0.5

(1)	(2)	(3)
A39	Vinyl chloride	0.2
A40	2,4,5-TP (Silvex)	1.0
A41	2,4-Dichlorophenoxyacetic acid	10.0
A42	Alachlor	2.0
A43	Alpha HCH	0.001
A44	Atrazine	0.2
A45	Beta HCH	0.004
A46	Butachlor	12.5
A47	Chlordane	0.03
A48	Chlorpyrifos	9.0
A49	Delta HCH	0.004
A50	Endosulfan (alpha+ beta+ sulphate)	0.04
A51	Endrin	0.02
A52	Ethion	0.3
A53	Heptachlor (& its Epoxide)	0.008
A54	Isoproturon	0.9
A55	Lindane	0.4
A56	Malathion	19
A57	Methoxychlor	10
A58	Methyl parathion	0.7
A59	Monocrotophos	0.1
A60	Phorate	0.2
A61	Toxaphene	0.5
A62	Antimony	15
A63	Beryllium	0.75
A64	Chromium (VI)	5.0
A65	Cobalt	80.0
A66	Copper	25.0
A67	Molybdenum	350
A68	Nickel	20.0
A69	Thallium	7.0
A70	Vanadium	24.0
A71	Zinc	250
A72	Fluoride	180.0
A73	Aldrin	0.14
A74	Dichlorodiphenyltrichloroethane (DDT), Dichlorodipenyldichloroethylene (DDE), Dichlorodipenyldichloroethane (DDD)	0.1
A75	Dieldrin	0.8
A76	Kepone	2.1
A77	Mirex	2.1
A78	Polychlorinated biphenyls	5.0
A79	Dioxin (2,3,7,8-TCDD)	0.001

Class B: Based on Total Threshold Limit Concentration (TTLC)

Class	Constituent	Concentration in mg/kg
(1)	(2)	(3)
B1	Asbestos	10000
B2	Total Petroleum Hydrocarbons (TPH) (C5 - C36)	5,000

Note:

- (1) The testing method for list of constituents at A1 to A61 in Class-A, shall be based on Toxicity Characteristic Leaching Procedure (TCLP) and for extraction of leachable constituents, USEPA Test Method 1311 shall be used.
- (2) The testing method for list of constituents at A62 to A79 in Class- A, shall be based on Soluble Threshold Limit Concentration (STLC) and Waste Extraction Test (WET) Procedure given in Appendix II of section 66261 of Title 22 of California Code regulation (CCR) shall be used.
- (3) In case of ammonia (A10), cyanide (A11) and chromium VI (A64), extractions shall be conducted using distilled water in place of the leaching media specified in the TCLP/STLC procedures.
- (4) A summary of above specified leaching/extraction procedures is included in manual for characterization and analysis of hazardous waste published by Central Pollution Control Board and in case the method is not covered in the said manual, suitable reference method may be adopted for the measurement.
- (5) In case of asbestos, the specified concentration limits apply only if the substances are in a friable, powdered or finely divided state.
- (6) The hazardous constituents to be analyzed in the waste shall be relevant to the nature of the industry and the materials used in the process.
- (7) Wastes which contain any of the constituents listed below shall be considered as hazardous, provided they exhibit the characteristics listed in Class-C of this Schedule :

1.	Acid Amides
2.	Acid anhydrides
3.	Amines
4.	Anthracene
5.	Aromatic compounds other than those listed in Class A
6.	Bromates, (hypo-bromites)
7.	Chlorates (hypo-chlorites)
8.	Carbonyls
9.	Ferro-silicate and alloys
10.	Halogen- containing compounds which produce acidic vapours on contact with humid air or water e.g. silicon tetrachloride, aluminum chloride, titanium tetrachloride
11.	Halogen- silanes
12.	Halogenated Aliphatic Compounds
13.	Hydrazine (s)

14.	Hydrides
15.	Inorganic Acids
16.	Inorganic Peroxides
17.	Inorganic Tin Compounds
18.	Iodates
19.	(Iso- and thio-) Cyanates
20.	Manganese-silicate
21.	Mercaptans
22.	Metal Carbonyls
23.	Metal hydrogen sulphates
24.	Nitrides
25.	Nitriles
26.	Organic azo and azoxy Compounds
27.	Organic Peroxides
28.	Organic Oxygen Compounds
29.	Organic Sulphur Compounds
30.	Organo- Tin Compounds
31.	Organo nitro- and nitroso compounds
32.	Oxides and hydroxides except those of hydrogen, carbon, silicon, iron, aluminum, titanium, manganese, magnesium, calcium
33.	Phenanthrene
34.	Phenolic Compounds
35.	Phosphate compounds except phosphates of aluminum, calcium and iron
36.	Salts of pre-acids
37.	Total Sulphur
38.	Tungsten Compounds
39.	Tellurium and tellurium compounds
40.	White and Red Phosphorus
41.	2-Acetylaminofluorene
42.	4-Aminodiphenyl
43.	Benzidine and its salts
44.	Bis (Chloromethyl) ether
45.	Methyl chloromethyl ether
46.	1,2-Dibromo-3-chloropropane
47.	3,3'-Dichlorobenzidine and its salts
48.	4-Dimethylaminoazobenzene
49.	4-Nitrobiphenyl
50.	Beta-Propiolactone

CLASS C : Based on hazardous Characteristics

Apart from the concentration limit given above, the substances or wastes shall be classified as hazardous waste if it exhibits any of the following characteristics due to the presence of any hazardous constituents:

Class C1: Flammable- A waste exhibits the characteristic of flammability or ignitability if a representative sample of the waste has any of the following properties, namely:-

- (i) flammable liquids, or mixture of liquids, or liquids containing solids in solution or suspension (for example, paints, varnishes, lacquers, etc; but not including substances or wastes otherwise classified on account of their dangerous characteristics), which give off a flammable vapour at temperature less than 60°C. This flash point shall be measured as per ASTM D 93-79 closed-cup test method or as determined by an equivalent test method published by Central Pollution Control Board;
- (ii) it is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns vigorously and persistently creating a hazard;
- (iii) it is an ignitable compressed gas;
- (iv) It is an oxidizer and for the purposes of characterisation is a substance such as a chlorate, permanganate, inorganic peroxide, or a nitrate, that yields oxygen readily to stimulate the combustion of organic matter.

Class C2: Corrosive- A waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties, namely:-

- (i) it is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5;
- (ii) it is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm per year at a test temperature of 55 °C;
- (iii) it is not aqueous and, when mixed with an equivalent weight of water, produces a solution having a pH less than or equal to 2 or greater than or equal to 12.5;
- (iv) it is not a liquid and, when mixed with an equivalent weight of water, produces a liquid that corrodes steel (SAE1020) at a rate greater than 6.35 mm per year at a test temperature of 55 °C.

Note:

For the purpose of determining the corrosivity, the Bureau of Indian Standard 9040 C method for pH determination, NACE TM 01 69 : Laboratory Corrosion Testing of Metals and EPA 1110A method for corrosivity towards steel (SAE1020) to establish the corrosivity characteristics shall be adopted.

Class C3: Reactive or explosive- A waste exhibits the characteristic of reactivity if a representative sample of the waste it has any of the following properties, namely:-

- (i) it is normally unstable and readily undergoes violent change without detonating;
- (ii) it reacts violently with water or forms potentially explosive mixtures with water;
- (iii) when mixed with water, it generates toxic gases, vapours or fumes in a quantity sufficient to present a danger to human health or the environment;
- (iv) it is a cyanide or sulphide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapours or fumes in a quantity sufficient to present a danger to human health or the environmental;
- (v) it is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement;
- (vi) it is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure;
- (vii) it is a forbidden explosive.

Class C4: Toxic- A waste exhibits the characteristic of toxicity, if, :-

- (i) the concentration of the waste constituents listed in Class A and B (of this schedule) are equal to or more than the permissible limits prescribed therein;
- (ii) it has an acute oral LD50 less than 2,500 milligrams per kilogram;
- (iii) it has an acute dermal LD50 less than 4,300 milligrams per kilogram;
- (iv) it has an acute inhalation LC50 less than 10,000 parts per million as a gas or vapour;
- (v) it has acute aquatic toxicity with 50% mortality within 96 hours for zebra fish (*Brachidanio rerio*) at a concentration of 500 milligrams per litre in dilution water and test conditions as specified in BIS test method 6582 – 2001.
- (vi) it has been shown through experience or by any standard reference test- method to pose a hazard to human health or environment because of its carcinogenicity, mutagenicity, endocrine disruptivity, acute toxicity, chronic toxicity, bio-accumulative properties or persistence in the environment.

Class C5: Substances or Wastes liable to spontaneous combustion - Substances or Wastes which are liable to spontaneous heating under normal conditions encountered in transport, or to heating up on contact with air, and being then liable to catch fire.

Class C6: Substances or Wastes which, in contact with water emit flammable gases- Substances or Wastes which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.

Class C5: Oxidizing - Substances or Wastes which, while in themselves not necessarily combustible, may, generally by yielding oxygen cause, or contribute to, the combustion of other materials.

Class C8: Organic Peroxides - Organic substances or Wastes which contain the bivalent O–O structure, which may undergo exothermic self-accelerating decomposition.

Class C9: Poisons (acute) - Substances or Wastes liable either to cause death or serious injury or to harm human health if swallowed or inhaled or by skin contact.

Class C10: Infectious substances - Substances or Wastes containing viable micro-organisms or their toxins which are known or suspected to cause disease in animals or humans.

Class C11: Liberation of toxic gases in contact with air or water - Substances or Wastes which, by interaction with air or water, are liable to give off toxic gases in dangerous quantities.

Class C12: Eco-toxic- Substances or Wastes which if released, present or may present immediate or delayed adverse impacts to the environment by means of bioaccumulation or toxic effects upon biotic systems or both.

Class C13: Capable, by any means, after disposal, of yielding another material, e.g., leachate, which possesses any of the characteristics listed above.

SCHEDULE III

[See rules 3 (1) (17) (iii), 3 (23), 12, 13 and 14]

Part A

List of hazardous wastes applicable for import and export with Prior Informed Consent [Annexure VIII of the Basel Convention*]

Basel No.	Description of Hazardous Wastes
(1)	(2)
A1	Metal and Metal bearing wastes
A1010	Metal wastes and waste consisting of alloys of any of the following but excluding such wastes specifically listed in Part B and Part D
	- Antimony
	- Cadmium
	- Lead
	- Tellurium
A1020	Waste having as constituents or contaminants, excluding metal wastes in massive form, any or the following:
	- Antimony, antimony compounds
	- Cadmium, cadmium compounds
	- Lead, lead compounds
	- Tellurium, tellurium compounds
A1040	Waste having metal carbonyls as constituents
A1050	Galvanic sludges
A1070	Leaching residues from zinc processing, dust and sludges such as jarosite, hematite, etc.
A1080	Waste zinc residues not included in Part B, containing lead and cadmium in concentrations sufficient to exhibit hazard characteristics indicated in Part C
A1090	Ashes from the incineration of insulated copper wire
A1100	Dusts and residues from gas cleaning systems of copper smelters
A1120	Waste sludges, excluding anode slimes, from electrolyte purification systems in copper electrorefining and electrowinning operations
A1140	Waste cupric chloride and copper cyanide catalysts not in liquid form note the related entry in Schedule VI
A1150	Precious metal ash from incineration of printed circuit boards not included in Part B
A1160	Waste lead acid batteries, whole or crushed
A1170	Unsorted waste batteries excluding mixtures of only Part B batteries. Waste batteries not specified in Part B containing constituents mentioned in Schedule II to an extent to render them hazardous
A2	Wastes containing principally inorganic constituents, which may contain metals and organic materials
A2010	Glass waste from cathode-ray tubes and other activated glasses
A2030	Waste catalysts but excluding such wastes specified in Part B
A3	Wastes containing principally organic constituents, which may contain metals and inorganic materials
A3010	Waste from the production or processing of petroleum coke and bitumen
A3020	Waste mineral oils unfit for their originally intended use
A3050	Wastes from production, formulation and use of resins, latex, plasticizers, glues or adhesives excluding such wastes specified in Part B (B4020)
A3120	Fluff-light fraction from shredding

(1)	(2)
A3130	Waste organic phosphorus compounds
A4	Wastes which may contain either inorganic or organic constituents
A4010	Wastes from the production, preparation and use of pharmaceutical products but excluding such waste specified in Part B
A4040	Wastes from the manufacture, formulation and use of wood-preserving chemicals (does not include wood treated with wood preserving chemicals)
A4070	Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers, varnish excluding those specified in Part B (B4010)
A4100	Wastes from industrial pollution control devices for cleaning of industrial off-gases but excluding such wastes specified in Part B
A4120	Wastes that contain, consist of or are contaminated with peroxides.
A4130	Wastes packages and containers containing Schedule II constituents in concentration sufficient to exhibit Part C of Schedule III hazard characteristics.
A4140	Waste consisting of or containing off specification or outdated chemicals (unused within the period recommended by the manufacturer) corresponding to constituents mentioned in Schedule II and exhibiting Part C of Schedule III hazard characteristics.
A4160	Spent activated carbon not included in Part B, B2060

*This List is based on Annexure VIII of the Basel Convention on Transboundary Movement of Hazardous Wastes and comprises of wastes characterized as hazardous under Article I, paragraph 1(a) of the Convention. Inclusion of wastes on this list does not preclude the use of hazard.

Characteristics given in Annexure VIII of the Basel Convention (Part C of this Schedule) to demonstrate that the wastes are not hazardous. **Hazardous wastes in Part-A are restricted and cannot be allowed to be imported without permission from the Ministry of Environment, Forest and Climate Change and the Directorate General of Foreign Trade license, if applicable.**

Part B

List of other wastes applicable for import and export and not requiring Prior Informed Consent [Annex IX of the Basel Convention*]

Basel No.	Description of wastes
(1)	(2)
B1	Metal and metal-bearing wastes
B1010	Metal and metal-alloy wastes in metallic, non-dispersible form: <ul style="list-style-type: none"> - Thorium scrap - Rare earths scrap
B1020	Clean, uncontaminated metal scrap, including alloys, in bulk finished form (sheet, plates, beams, rods, etc.), of: <ul style="list-style-type: none"> - Antimony scrap - Beryllium scrap - Cadmium scrap - Lead scrap (excluding lead acid batteries) - Selenium scrap - Tellurium scrap
B1030	Refractory metals containing residues

(1)	(2)
B1031	Molybdenum, tungsten, titanium, tantalum, niobium and rhenium metal and metal alloy wastes in metallic dispersible form (metal powder), excluding such wastes as specified in Part A under entry A1050, Galvanic sludges
B1040	Scrap assemblies from electrical power generation not contaminated with lubricating oil, PCB or PCT to an extent to render them hazardous
B1050	Mixed non-ferrous metal, heavy fraction scrap, containing cadmium, antimony, lead & tellurium mentioned in Schedule II in concentrations sufficient to exhibit Part C characteristics
B1060	Waste selenium and tellurium in metallic elemental form including powder
B1070	Waste of copper and copper alloys in dispersible form, unless they contain any of the constituents mentioned in Schedule II to an extent that they exhibit Part C characteristics
B1080	Zinc ash and residues including zinc alloys residues in dispersible form unless they contain any of the constituents mentioned in Schedule II in concentration such as to exhibit Part C characteristics
B1090	Waste batteries conforming to a standard battery specification, excluding those made with lead, cadmium or mercury
B1100	<p>Metal bearing wastes arising from melting, smelting and refining of metals:</p> <ul style="list-style-type: none"> - Slags from copper processing for further processing or refining containing arsenic, lead or cadmium - Slags from precious metals processing for further refining - Wastes of refractory linings, including crucibles, originating from copper smelting - Tantalum-bearing tin slags with less than 0.5% tin
B1110	<p>Used Electrical and electronic assemblies other than those listed in Part D of Schedule III</p> <p>Electronic assemblies consisting only of metals or alloys</p> <p>Waste electrical and electronic assemblies or scrap (including printed circuit boards) not containing components such as accumulators and other batteries included in Part A of Schedule III, mercury-switches, glass from cathode-ray tubes and other activated glass and PCB-capacitors, or not contaminated with Schedule II constituents such as cadmium, mercury, lead, polychlorinated biphenyl) or from which these have been removed, to an extent that they do not possess any of the characteristics contained in Part C of Schedule III (note the related entry in Schedule VI, A1180)</p>
B1120	<p>Spent catalysts excluding liquids used as catalysts, containing any of:</p> <p>Transition metals, excluding waste catalysts (spent catalysts, liquid used catalysts or other catalysts) in Part A and Schedule VI:</p> <ul style="list-style-type: none"> - Scandium - Vanadium - Manganese - Cobalt - Copper - Yttrium - Niobium - Hafnium - Titanium - Chromium - Iron - Nickel - Zinc - Zirconium - Molybdenum - Tantalum

(1)	(2)
	<ul style="list-style-type: none"> - Tungsten - Rhenium Lanthanides (rare earth metals): - Lanthanum - Cerium
	<ul style="list-style-type: none"> - Praseodymium - Neodymium - Samarium - Europium - Gadolinium - Terbium - Dysprosium - Holmium - Erbium - Thulium - Ytterbium - Lutetium
B1130	Cleaned spent precious metal bearing catalysts
B1140	Precious metal bearing residues in solid form which contain traces of inorganic cyanides
B1150	Precious metals and alloy wastes (gold , silver, the platinum group but not mercury) in a dispersible form, non-liquid form with appropriate packaging and labelling
B1160	Precious metal ash from the incineration of printed circuit boards (note the related entry in Part A A1150)
B1170	Precious metal ash from the incineration of photographic film
B1180	Waste photographic film containing silver halides and metallic silver
B1190	Waste photographic paper containing silver halides and metallic silver
B1200	Granulated slag arising from the manufacture of iron and steel
B1210	Slag arising from the manufacture of iron and steel including slags as a source of Titanium dioxide and Vanadium
B1220	Slag from zinc production, chemically stabilised, having a high iron content (above 20%) and processed according to industrial specifications mainly for construction
B1230	Mill scale arising from the manufacture of iron and steel
B1240	Copper Oxide mill-scale
B2	Wastes containing principally inorganic constituents, which may contain metals and organic materials
B2010	Wastes from mining operations in non-dispersible form: <ul style="list-style-type: none"> - Natural graphite waste - Slate wastes - Mica wastes - Leucite, nepheline and nepheline syenite waste - Feldspar waste - Fluorspar waste - Silica wastes in solid form excluding those used in foundry operations
B2020	Glass wastes in non-dispersible form: <ul style="list-style-type: none"> - Cullet and other waste and scrap of glass except for glass from cathode-ray tubes and other activated glasses
B2030	Ceramic wastes in non-dispersible form: <ul style="list-style-type: none"> - Cermet wastes and scrap (metal ceramic composites) - Ceramic based fibres
B2040	Other wastes containing principally inorganic constituents: <ul style="list-style-type: none"> - Partially refined calcium sulphate produced from flue gas desulphurization (FGD) - Waste gypsum wallboard or plasterboard arising from the demolition of buildings

(1)	(2)
	<ul style="list-style-type: none"> - Slag from copper production, chemically stabilized, having a high iron content (above 20%) and processed according to industrial specifications mainly for construction and abrasive applications - Sulphur in solid form - Limestone from production of calcium cyanamide (pH<9) - Sodium, potassium, calcium chlorides - Carborundum (silicon carbide) - Broken concrete - Lithium-tantalum and lithium-niobium containing glass scraps
B2060	Spent activated carbon not containing any of Schedule II constituents to the extent they exhibit Part C characteristics, for example, carbon resulting from the treatment of potable water and processes of the food industry and vitamin production (note the related entry in Part A A4160)
B2070	Calcium fluoride sludge
B2080	Waste gypsum arising from chemical industry processes not included in Schedule VI (note the related entry in A2040)
B2090	Waste anode butts from steel or aluminium production made of petroleum coke or bitumen and cleaned to normal industry specifications (excluding anode butts from chlor alkali electrolyses and from metallurgical industry)
B2100	Waste hydrates of aluminium and waste alumina and residues from alumina production, excluding such materials used for gas cleaning, flocculation or filtration processes
B2130	Bituminous material (asphalt waste) from road construction and maintenance, not containing tar (note the related entry in Schedule VI, A3200)
B3	Wastes containing principally organic constituents, which may contain metals and inorganic materials
B3027	Self-adhesive label laminate waste containing raw materials used in label material production
B3030	<p>Textile wastes</p> <p>The following materials, provided they are not mixed with other wastes and are prepared to a specification:</p> <ul style="list-style-type: none"> - Silk waste (including cocoons unsuitable for reeling, yarn waste and garnetted stock) <ul style="list-style-type: none"> • not carded or combed • other - Waste of wool or of fine or coarse animal hair, including yarn waste but excluding garnetted stock <ul style="list-style-type: none"> • noils of wool or of fine animal hair • other waste of wool or of fine animal hair • waste of coarse animal hair - Cotton waste (including yarn waste and garnetted stock) <ul style="list-style-type: none"> • yarn waste (including thread waste) • garnetted stock • other - Flax tow and waste <ul style="list-style-type: none"> • Tow and waste (including yarn waste and garnetted stock) of true hemp (<i>Cannabis sativa</i> L.) of • Tow and waste (including yarn waste and garnetted stock) of jute and other textile bast fibres (excluding flax, true hemp and ramie) • Tow and waste (including yarn waste and garnetted stock) of sisal

(1)	(2)
	<p>and other textile fibres of the genus Agave</p> <ul style="list-style-type: none"> - Tow, noils and waste (including yarn waste and garneted stock) of coconut - Tow, noils and waste (including yarn waste and garneted stock) of abaca (Manila hemp or <i>Musa textilis</i> Nee) - Tow, noils and waste (including yarn waste and garneted stock) of ramie and other vegetable textile fibres, not elsewhere specified or included - Waste (including noils, yarn waste and garneted stock) of man-made fibres <ul style="list-style-type: none"> • of synthetic fibres • of artificial fibres - Worn clothing and other worn textile articles - Used rags, scrap twine, cordage, rope and cables and worn out articles of twine, cordage, rope or cables of textile materials <ul style="list-style-type: none"> • sorted • other
B3035	Waste textile floor coverings, carpets
B3040	<p>Rubber Wastes</p> <p>The following materials, provided they are not mixed with other wastes:</p> <ul style="list-style-type: none"> - Waste and scrap of hard rubber (e.g., ebonite) - Other rubber wastes (excluding such wastes specified elsewhere)
B3050	<p>Untreated cork and wood waste:</p> <ul style="list-style-type: none"> - Wood waste and scrap, whether or not agglomerated in logs, briquettes, pellets or similar forms - Cork waste: crushed, granulated or ground cork
B3060	<p>Wastes arising from agro-food industries provided it is not infectious:</p> <ul style="list-style-type: none"> - Wine lees - Dried and sterilized vegetable waste, residues and by-products, whether or not in the form of pellets, of a kind used in animal feeding, not elsewhere specified or included - Degras: residues resulting from the treatment of fatty substances or animal or vegetable waxes - Waste of bones and horn-cores, unworked, defatted, simply prepared (but not cut to shape), treated with acid or degelatinised - Fish waste - Cocoa shells, husks, skins and other cocoa waste - Other wastes from the agro-food industry excluding by-products which meet national and international requirements and standards for human or animal consumption
B3070	<p>The following wastes:</p> <ul style="list-style-type: none"> - Waste of human hair - Waste straw - Deactivated fungus mycelium from penicillin production to be used as animal feed
B3080	Waste parings and scrap of rubber
B3090	<p>Paring and other wastes of leather or of composition leather not suitable for the manufacture of leather articles, excluding leather sludges, not containing hexavalent chromium compounds and biocides (note the related entry in Schedule VI, A3100)</p>

(1)	(2)
B3100	Leather dust, ash, sludges or flours not containing hexavalent chromium compounds or biocides (note the related entry in Schedule VI, A3090)
B3110	Fellmongery wastes not containing hexavalent chromium compounds or biocides or infectious substances (note the related entry in Schedule VI, A3110)
B3120	Wastes consisting of food dyes
B3130	Waste polymer ethers and waste non-hazardous monomer ethers incapable of forming peroxides
B3140	Waste pneumatic and other tyres, excluding those which do not lead to resource recovery, recycling, reclamation but not for direct reuse
B4	Wastes which may contain either inorganic or organic constituents
B4010	Wastes consisting mainly of water-based or latex paints, inks and hardened varnishes not containing organic solvents, heavy metals or biocides to an extent to render them hazardous (note the related entry in Part A, A4070)
B4020	Wastes from production, formulation and use of resins, latex, plasticizers, glues or adhesives, not listed in Part A, free of solvents and other contaminants to an extent that they do not exhibit Part C characteristics (note the related entry in Part A, A3050)
B4030	Used single-use cameras, with batteries not included in Part A

* This list is based on Annexure IX of the Basel Convention on Transboundary Movement of Hazardous Wastes and comprises of wastes not characterized as hazardous under Article-I of the Basel Convention. **The wastes in Part- B are restricted and cannot be allowed to be imported without permission from the Ministry of Environment, Forest and Climate Change and the Directorate General of Foreign Trade license, if applicable.**

Note:

- (1) **Copper dross containing copper greater than 65% and lead and Cadmium equal to or less than 1.25% and 0.1% respectively; spent cleaned metal catalyst containing copper; and copper reverts, cake and residues containing lead and cadmium equal to or less than 1.25% and 0.1% respectively are allowed for import without Director General of Foreign Trade license to units (actual users) authorised by State Pollution Control Board and with the Ministry of Environment, Forest and Climate Change's permission. Copper reverts, cake and residues containing lead and cadmium greater than 1.25% and 0.1% respectively are under restricted category for which import is permitted only against Director General of Foreign Trade license for the purpose of processing or reuse by units permitted with the Ministry of Environment, Forest and Climate Change (actual users).**

- (2) **Zinc ash or skimmings in dispersible form containing zinc more than 65% and lead and cadmium equal to or less than 1.25% and 0.1% respectively and spent cleaned metal catalyst containing zinc are allowed for import without Director General of Foreign Trade license to units authorised by State Pollution control Board, Ministry of Environment, Forest and Climate Change's permission (actual users) upto an annual quantity limit indicated in registration letter. Zinc ash and skimmings containing less than 65% zinc and lead and cadmium equal to or more than 1.25% and 0.1% respectively and hard zinc spelter and brass dross containing lead greater than 1.25% are under restricted category for which import is permitted against Director General of Foreign Trade license and only for purpose of processing or reuse by units registered with the Ministry of Environment Forest and Climate Change (actual users).**

Part C
List of Hazardous Characteristics

<u>Code</u>	<u>Characteristic</u>
H 1	Explosive An explosive substance or waste is a solid or liquid substance or waste (or mixture of substances or wastes) which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surrounding.
H 3	Flammable liquids The word “flammable” has the same meaning as “inflammable”. Flammable liquids are liquids, or mixtures of liquids, or liquids containing solids in solution or suspension (for example, paints, varnishes, lacquers, etc. but not including substances or wastes otherwise classified on account of their dangerous characteristics) which give off a flammable vapour at temperatures of not more than 60.5°C, closed-cup test, or not more than 65.6°C, open-cup test. (Since the results of open-cups tests and of closed-cup tests are not strictly comparable and even individual results by the same test are often variable, regulations varying from the above figures to make allowance for such differences would be within the spirit of this definition).
H 4.1	Flammable solids Solids, or waste solids, other than those classed as explosives, which under conditions encountered in transport are readily combustible, or may cause or contribute to fire through friction.
H 4.2	Substances or wastes liable to spontaneous combustion Substances or wastes which are liable to spontaneous heating under normal conditions encountered in transport, or to heating up on contact with air, and being then liable to catch fire.
H 4.3	Substances or wastes which, in contact with water emit flammable gases Substances or wastes which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.
H 5.1	Oxidizing Substances or wastes which, while in themselves not necessarily combustible, may, generally by yielding oxygen cause, or contribute to, the combustion or other materials.
H 5.2	Organic Peroxides Organic substances or wastes which contain the bivalent-o-o-structure are thermally unstable substances which may undergo exothermic self-accelerating decomposition.

H 6.1 Poisons (acute)

Substances or wastes liable either to cause death or serious injury or to harm human health if swallowed or inhaled or by skin contact.

H 6.2 Infectious substances

Substances or wastes containing viable micro-organisms or their toxins which are known or suspected to cause disease in animals or humans.

H 8 Corrosives

Substances or wastes which, by chemical action, will cause severe damage when in contact with living tissue, or, in the case of leakage, will materially damage, or even destroy, other goods or the means of transport; they may also cause other hazards.

H 10 Liberation of toxic gases in contact with air or water

Substances or wastes which, by interaction with air or water, are liable to give off toxic gases in dangerous quantities.

H 11 Toxic (delayed or chronic)

Substances or wastes which, if they are inhaled or ingested or if they penetrate the skin, may involve delayed or chronic effects, including carcinogenicity).

H 12 Eco-toxic

Substances or wastes which if released, present or may present immediate or delayed adverse impacts to the environment by means of bioaccumulation or toxic effects upon biotic systems or both.

H 13 Capable, by any means, after disposal, of yielding another material, e.g., leachate, which possesses any of the characteristics listed above.

Part D

List of other wastes applicable for import and export without permission from Ministry of Environment, Forest and Climate Change [Annex IX of the Basel Convention*]

Basel No.	Description of wastes
(1)	(2)
B1	Metal and metal-bearing wastes
B1010	Metal and metal-alloy wastes in metallic, non-dispersible form : <ul style="list-style-type: none"> - Precious metals (gold, silver, platinum but not mercury) * * - Iron and steel scrap * * - Nickel scrap * * - Aluminium scrap* * - Zinc scrap * * - Tin scrap * * - Tungsten scrap * * - Molybdenum scrap * * - Tantalum scrap * * - Cobalt scrap * * - Bismuth scrap * * - Titanium scrap * * - Zirconium scrap * * - Manganese scrap * * - Germanium scrap * * - Vanadium scrap * * - Hafnium scrap * * - Indium scrap * * - Niobium scrap * * - Rhenium scrap * * - Gallium scrap * * - Magnesium scrap * * - Copper scrap * * - Chromium scrap * *
B1050	Mixed non-ferrous metal, heavy fraction scrap, containing metals other than specified in Part B1050 and not containing constituents mentioned in Schedule II in concentrations sufficient to exhibit Part C characteristics* *
B1100	Metal bearing wastes arising from melting, smelting and refining of metals: <ul style="list-style-type: none"> - Hard Zinc spelter * * - Zinc-containing drosses * *: <ul style="list-style-type: none"> ~ Galvanizing slab zinc top dross (>90% Zn) ~ Galvanizing slab zinc bottom dross (>92% Zn) ~ Zinc die casting dross (>85% Zn) ~ Hot dip galvanizers slab zinc dross (batch) (>92% Zn) ~ Zinc skimmings - Aluminium skimmings (or skims) excluding salt slag

(1)	(2)
B1110	<p>Electrical and electronic assemblies (including printed circuit boards, electronic components and wires) destined for direct reuse and not for recycling or final disposal</p> <ul style="list-style-type: none"> - Used electrical and electronic assemblies imported for repair and to be re-exported back after repair within one year of import * * * - Used electrical and electronic assemblies imported for rental purpose and re-exported back within one year of import * * * - Used electrical and electronic assemblies exported for repair and to be re-import after repair - Used electrical and electronic assemblies imported for testing, research and development, project work purposes and to be re-exported back within a period of three years from the date of import * * * - Spares imported for warranty replacements provided equal number of defective or non-functional parts are exported back within one year of the import * * * - Used electrical and electronic assemblies imported by Ministry of Defence, Department of Space and Department of Atomic Energy * * * - Used electrical and electronic assemblies (not in bulk; quantity less than or equal to three) imported by the individuals for their personal uses - Used Laptop, Personal Computers, Mobile, Tablet up to 01 number each imported by organisations in a year - Used electrical and electronic assemblies owned by individuals and imported on transfer of residence - Used multifunction print and copying machines (MFDs)* * * * - Used electrical and electronic assemblies imported by airlines for aircraft maintenance and remaining either on board or under the custodianship of the respective airlines warehouses located on the airside of the custom bonded areas.
B3	Wastes containing principally organic constituents, which may contain metals and inorganic materials
B3020	<p>Paper, paperboard and paper product wastes * *</p> <p>The following materials, provided they are not mixed with hazardous wastes: Waste and scrap of paper or paperboard of:</p> <ul style="list-style-type: none"> - unbleached paper or paperboard or of corrugated paper or paperboard - other paper or paperboard, made mainly of bleached chemical pulp, not coloured in the mass - paper or paperboard made mainly of mechanical pulp (for example newspapers, journals and similar printed matter) - other, including but not limited to <ul style="list-style-type: none"> (1) laminated paperboard (2) unsorted scrap
B3140	Aircraft Tyres exported to Original Equipment Manufacturers for re-treading and re-imported after re-treading by airlines for aircraft maintenance and remaining either on board or under the custodianship of the respective airlines warehouses located on the airside of the custom bonded areas

Note:

* This list is based on Annexure IX of the Basel Convention on Transboundary Movement of Hazardous Wastes and comprises of wastes not characterized as hazardous under Article-I of the Basel Convention.

* * Import permitted in the country to the actual user or to the trader on behalf of the actual users authorised by SPCB on one time basis and subject to verification of documents specified in Schedule VIII of these rules by the Custom Authority.

* * * Import permitted in the country only to the actual users from Original Equipment Manufacturers (OEM) and subject to verification of documents specified in Schedule VIII of these rules by the Custom Authority.

* * * * Import permitted in the country to the actual users or trader on behalf of the actual user in accordance with the documents required and verified by the Custom Authority as specified under Schedule VIII of these rules. The policy for free trade for multifunction print and copying machine to be reviewed once the MFDs are domestically manufactured.

All other wastes listed in Part D of Schedule III having no “Stars” are permitted without any documents from MoEF&CC subject to compliance of the conditions of the Customs Authority, if any.

SCHEDULE IV

[See rules 6 (1) (ii) and 6 (2)]

List of commonly recyclable hazardous wastes

S.No.	Wastes
(1)	(2)
1.	Brass Dross
2.	Copper Dross
3.	Copper Oxide mill scale
4.	Copper reverts, cake and residue
5.	Waste Copper and copper alloys in dispersible form
6.	Slags from copper processing for further processing or refining
7.	Insulated Copper Wire Scrap or copper with PVC sheathing including ISRI-code material namely “Druid”
8.	Jelly filled Copper cables
9.	Spent cleared metal catalyst containing copper
10.	Spent catalyst containing nickel, cadmium, Zinc, copper, arsenic, vanadium and cobalt
11.	Zinc Dross-Hot dip Galvanizers SLAB
12.	Zinc Dross-Bottom Dross
13.	Zinc ash/Skimmings arising from galvanizing and die casting operations
14.	Zinc ash/Skimming/other zinc bearing wastes arising from smelting and refining
15.	Zinc ash and residues including zinc alloy residues in dispersible form
16.	Spent cleared metal catalyst containing zinc
17.	Used Lead acid battery including grid plates and other lead scrap/ashes/residues not covered under Batteries (Management and Handling) Rules, 2001. [Battery scrap, namely: Lead battery plates covered by ISRI, Code word “Rails” Battery lugs covered by ISRI, Code word “Rakes”. Scrap drained/dry while intact, lead batteries covered by ISRI, Code word “rains”.

(1)	(2)
18.	Components of waste electrical and electronic assemblies comprising accumulators and other batteries included in Part A of Schedule III, mercury-switches, activated glass cullets from cathode-ray tubes and other activated glass and PCB-capacitors, or any other component contaminated with Schedule II constituents (e.g. cadmium, mercury, lead, polychlorinated biphenyl) to an extent that they exhibit hazard characteristics indicated in part C of Schedule III.
19.	Paint and ink Sludge/residues
20.	Used oil and waste oil

SCHEDULE V

[See rules 3 (36) and 3 (39)]

PART A

Specifications of Used Oil Suitable for recycling

S.No.	Parameter	Maximum permissible Limits
(1)	(2)	(3)
1.	Polychlorinated biphenyls (PCBs)	< 2ppm *
2.	Lead	100 ppm
3.	Arsenic	5 ppm
4.	Cadmium+Chromium+Nickel	500 ppm
5.	Polyaromatic hydrocarbons (PAH)	6%

Part B

Specification of fuel derived from waste oil

S.No.	Parameter	Maximum permissible limits
(1)	(2)	(3)
1.	Sediment	0.25%
2.	Lead	100 ppm
3.	Arsenic	5 ppm
4.	Cadmium+Chromium+Nickel	500 ppm
5.	Polyaromatic hydrocarbons (PAH)	6%
6.	Total halogens	4000 ppm
7.	Polychlorinated biphenyls (PCBs)	<2 ppm *
8.	Sulfur	4.5%
9.	Water Content	1%

*The detection limit is 2 ppm by gas Liquid Chromatography (GLC) using Electron Capture detector (ECD)

SCHEDULE VI

[See rules 12 (6), 12 (7) and 14(1)]

Hazardous and Other wastes prohibited for import

Basel No	Description of hazardous and other wastes
(1)	(2)
A1	Metal and Metal bearing wastes
A1010	Metal wastes and waste consisting of alloys of any of the following but excluding such wastes specifically listed in Part B and Part D of Schedule III - Arsenic - Beryllium - Mercury - Selenium - Thallium
A1020	Wastes having as constituents or contaminants, excluding metal wastes in massive form, any of the following: - Beryllium; beryllium compounds - Selenium; selenium compounds
A1030	Wastes having as constituents or contaminants any of the following: - Arsenic; arsenic compounds - Mercury; mercury compounds - Thallium; thallium compounds
A1040	Waste having hexavalent chromium compounds as constituents
A1140	Waste cupric chloride and copper cyanide catalysts in liquid form (note the related entry in Part A of Schedule III)
A1060	Wastes liquors from the pickling of metals
A1110	Spent electrolytic solutions from copper electrorefining and electrowinning operations
A1130	Spent etching solutions containing dissolved copper
A1180	Waste electrical and electronic assemblies or scrap (does not include scrap assemblies from electric power generation) containing components such as accumulators and other batteries included in Part A of Schedule III, mercury-switches, glass from cathode-ray tubes and other activated glass and PCB-capacitors, or contaminated with Schedule II constituents (e.g. cadmium, mercury, lead, polychlorinated biphenyl) to an extent that they exhibit hazard characteristics indicated in Part C of Schedule III (note the related entry in Part B B1110)
A1190	Waste metal cables coated or insulated with plastics containing or contaminated with coal tar, PCB, lead, cadmium, other organohalogen compounds or other constituents as mentioned in Schedule II to the extent that they exhibit hazard characteristics indicated in Part C of Schedule III
A2	Wastes containing principally inorganic constituents, which may contain metals and organic materials
A2020	Waste inorganic fluorine compounds in the form of liquids or sludges but excluding such wastes specified in Part B

(1)	(2)
A2040	Waste gypsum arising from chemical industry processes, if it contains any of the constituents mentioned in Schedule 2 to the extent that they exhibit hazard characteristics indicated in Part C of Schedule III (note the related entry in Part B B2080)
A2050	Waste asbestos (dusts and fibres)
A2060	Coal-fired power plant fly-ash containing Schedule II constituents in concentrations sufficient to exhibit Part C characteristics
A3	Wastes containing principally organic constituents, which may contain metals and inorganic materials
A3030	Wastes that contain, consist of or are contaminated with leaded anti-knock compounds sludges.
A3040	Waste thermal (heat transfer) fluids
A3060	Waste nitrocellulose
A3070	Waste phenols, phenol compounds including chlorophenol in the form of liquids or sludges
A3080	Waste ethers not including those specified in Part B
A3090	Waste leather dust, ash, sludges and flours when containing hexavalent chromium compounds or biocides (note the related entry in Part B B3100)
A3100	Waste paring and other waste of leather or of composition leather not suitable for the manufacture of leather articles, containing hexavalent chromium compound and biocides (note the related entry in Part B B3090)
A3110	Fellmongery wastes containing hexavalent chromium compounds or biocides or infectious substances (note the related entry in Part B B3110)
A3140	Waste non-halogenated organic solvents but excluding such wastes specified in Part B
A3150	Waste halogenated organic solvents
A3160	Waste halogenated or unhalogenated non-aqueous distillation residues arising from organic solvent recovery operations
A3170	Waste arising from the production of aliphatic halogenated hydrocarbons (such as chloromethane, dichloro-ethane, vinyl chloride, vinylidene chloride, allyl chloride and epichlorhydrin)
A3180	Wastes, substances and articles containing, consisting of or contaminated with polychlorinatedbiphenyl(PCB), polychlorinatedterphenyl(PCT), polychlorinated naphthalene (PCN) or polybrominated biphenyl (PBB) or any other polybrominated analogues of these compounds
A3190	Waste tarry residues (excluding asphalt cements) arising from refining, distillation and any pyrolytic treatment of organic materials
A3200	Bituminous material (asphalt waste) from road construction and maintenance, containing tar (note the related entry in Part B, B2130)
A4	Wastes which may contain either inorganic or organic constituents
A4020	Clinical and related wastes; that is wastes arising from medical, nursing, dental, veterinary, or similar practices, and wastes generated in hospitals or other facilities during the investigation or treatment of patients, or research projects.
A4030	Waste from the production, formulation and use of biocide and phyto-pharmaceuticals, including waste pesticides and herbicides which are off-specification, out-dated (unused within the period recommended by the manufacturer), or unfit for their originally intended use,

(1)	(2)
A4050	Wastes that contain, consist of, or are contaminated with any of the following: <ul style="list-style-type: none"> - Inorganic cyanides, excepting precious-metal-bearing residues in solid form containing traces of inorganic cyanides. - Organic cyanides
A4060	Waste oils/water, hydrocarbons/water mixtures, emulsions
A4080	Wastes of an explosive nature (but excluding such wastes specified in Part B)
A4090	Waste acidic or basic solutions, other than those specified at B2120 of this Schedule
A4110	Wastes that contain, consist of or are contaminated with any of the following: <ul style="list-style-type: none"> - Any congener of polychlorinated dibenzo-furan. - Any congener of polychlorinated dibenzo-P-dioxin.
A4150	Waste chemical substances arising from research and development or teaching activities which are not identified and /or are new and whose effects on human health and /or the environment are not known
B1	Metal and Metal bearing wastes
B 1110	Used critical care medical equipment for re-use
B1115	Waste metal cables coated or insulated with plastics, not included in A1190 of this schedule, excluding those destined for operations which do not lead to resource recovery, recycling, reclamation, direct re-use or alternative uses or any other disposal operations involving, at any stage, uncontrolled thermal processes, such as open-burning.
B1250	Waste end-of-life motor vehicles, containing neither liquids nor other hazardous components
B2	Wastes containing principally inorganic constituents, which may contain metals and organic materials
B2050	Coal-fired power plant fly-ash, note the related entry at A2060 of this Schedule
B2110	Bauxite residue (red mud) (pH moderated to less than 11.5)
B2120	Waste acidic or basic solutions with a pH greater than 2 and less than 11.5, which are not corrosive or otherwise hazardous (note the related entry at A4090 of this schedule)
B3	Wastes containing principally organic constituents, which may contain metals and inorganic materials
B3010	Solid plastic waste The following plastic or mixed plastic waste, prepared to a specification: <ul style="list-style-type: none"> - Scrap plastic of non-halogenated polymers and co-polymers, including but not limited to the following: Ethylene, Styrene, Polypropylene, polyethylene terephthalate, Acrylonitrile, Butadiene, Polyacetals, Polyamides, polybutylene terephthalate, Polycarbonates, Polyethers, polyphenylene sulphides, acrylic polymers, alkanes C10-C13 (plasticiser), polyurethane (not containing CFC's), Polysiloxanes, polymethyl methacrylate, polyvinyl alcohol, polyvinyl butyral, Polyvinyl acetate - Cured waste resins or condensation products including the following: urea formaldehyde resins, phenol formaldehyde resins, melamine formaldehyde resins, epoxy resins, alkyd resins, polyamides - The following fluorinated polymer wastes (excluding post-consumer wastes):

(1)	(2)
	perfluoroethylene/ propylene, perfluoro alkoxy alkane, tetrafluoroethylene/per fluoro vinyl ether (PFA), tetrafluoroethylene/per fluoro methylvinyl ether (MFA), polyvinylfluoride , polyvinylidene fluoride
B3026	The following waste from the pre-treatment of composite packaging for liquids, not containing constituents mentioned in Schedule II in concentrations sufficient to exhibit Part C characteristics: <ul style="list-style-type: none"> - Non-separable plastic fraction - Non-separable plastic-aluminium fraction -
B3065	Waste edible fats and oils of animal or vegetable origin (e.g. frying oil)
B3140	Waste pneumatic tyres for direct reuse
Y 46	Wastes collected from household/municipal waste
Y 47	Residues arising from the incineration of household wastes

SCHEDULE VII

[See rules 13 (6) and 21]

List of authorities and corresponding duties

S. No.	Authority	Corresponding Duties
(1)	(2)	(3)
1.	Ministry of Environment, Forests and Climate Change under the Environment (Protection) Act, 1986	<ul style="list-style-type: none"> (i) Identification of hazardous and other wastes (ii) Permission to exporters of hazardous and other wastes (iii) Permission to importer of hazardous and other wastes (iv) Permission for transit of hazardous and other wastes through India. (v) Promote environmentally sound management of hazardous and other waste. (vi) Sponsoring of training and awareness programme on Hazardous and Other Waste Management related activities.
2.	Central Pollution Control Board constituted under the Water (Prevention and Control of Pollution) Act, 1974	<ul style="list-style-type: none"> (i) Co-ordination of activities of State Pollution Control Boards (ii) Conduct training courses for authorities dealing with management of hazardous and other wastes (iii) Recommend standards and specifications for treatment and disposal of wastes and leachates, recommend procedures for characterisation of hazardous wastes.

(1)	(2)	(3)
		<ul style="list-style-type: none"> (iv) Inspection of facilities handling hazardous waste as and when necessary. (v) Sector specific documentation to identify waste for inclusion in these rules. (vi) Prepare and update guidelines to prevent or minimise the generation and handling of hazardous and other wastes. (vii) Prepare and update guidelines/ Standard Operating Procedures (SoPs) for recycling, utilization, pre-processing, co-processing of hazardous and other wastes. (viii) To prepare annual review report on management of hazardous waste. (ix) Any other function assigned by the Ministry of Environment, Forest and Climate Change, from time to time.
3.	State Government/Union Territory Government/Administration	<ul style="list-style-type: none"> (i) Identification of site (s) for common Hazardous and Other Waste Treatment Storage and Disposal Facility (TSDF) (ii) Asses Environment Impact Assessment (EIA) reports and convey the decision of approval of site or otherwise Acquire the site or inform operator of facility or occupier or association of occupiers to acquire the site (iii) Notification of sites. (iv) Publish periodically an inventory of all potential or existing disposal sites in the State or Union Territory
4.	State Pollution Control Boards or Pollution Control Committees constituted under the Water (Prevention and Control of Pollution) Act, 1974	<ul style="list-style-type: none"> (i) Inventorisation of hazardous and other wastes (ii) Grant and renewal of authorisation (iii) Monitoring of compliance of various provisions and conditions of permission including conditions of permission for issued by Ministry of Environment, Forest and Climate Change for exports and imports (iv) Examining the applications for imports submitted by the importers and forwarding the same to Ministry of Environment, Forest and Climate Change (v) Implementation of programmes to prevent or reduce or minimise the generation of hazardous and other wastes. (vi) Action against violations of these rules. (vii) Any other function under these Rules assigned by Ministry of Environment, Forest and Climate Change from time to time.
5.	Directorate General of Foreign	(i) Grant of licence for import of hazardous

(1)	(2)	(3)
	Trade constituted under the Foreign Trade (Development and Regulation) Act, 1992	and other wastes (ii) Refusal of licence for hazardous and other wastes prohibited for imports and export
6.	Port authority under Indian Ports Act, 1908 (15 of 1908) and Customs Authority under the Customs Act, 1962 (52 of 1962)	(i) Verify the documents (ii) Inform the Ministry of Environment, Forests and Climate Change of any illegal traffic and exports, wherever required. (iii) Analyse wastes permitted for imports and exports, wherever required. (iv) Train officials on the provisions of these rules and in the analysis of hazardous and other wastes (v) Take action against exporter or importer for violations under the Indian Ports Act, 1908 or Customs Act, 1962

SCHEDULE VIII

[See rules 13(2) and 13 (4)]

List of documents for verification by Customs for import of other wastes specified in Part D of Schedule III

S. No.	Basel No.	Description of other wastes	List of Documents
(1)	(2)	(3)	(4)
1	B1010	Metal and metal-alloy wastes in metallic, non-dispersible form: - Precious metals (gold, silver, platinum) - Iron and steel scrap - Nickel scrap - Aluminium scrap - Zinc scrap - Tin scrap - Tungsten scrap - Molybdenum scrap - Tantalum scrap - Cobalt scrap - Bismuth scrap - Titanium scrap - Zirconium scrap - Manganese scrap - Germanium scrap - Vanadium scrap - Hafnium scrap - Indium scrap - Niobium scrap - Rhenium scrap - Gallium scrap - Magnesium scrap - Copper scrap - Chromium scrap	(a) Duly filled up Form 6 - Movement document; (b) The import license from Directorate General of Foreign Trade, wherever applicable; (a) Pre-shipment inspection certificate issued by the inspection agency of the exporting country or the inspection and certification agency approved by Directorate General of Foreign Trade; (c) The valid consents to operate under the Air and Water Acts and the authorisation under these rules, for actual users. For traders, only valid one time authorisation from concerned SPCB is required; (d) The chemical analysis report of the waste being imported; (e) an acknowledged copy of the annual return filed with concerned State Pollution Control Board for import in the last financial year.

(1)	(2)	(3)	(4)
2	B1050	Mixed non-ferrous metal, heavy fraction scrap, containing metals other than specified in Part B1050 and not containing constituents mentioned in Schedule II in concentrations sufficient to exhibit Part C characteristics* *	<ul style="list-style-type: none"> (a) Duly filled up Form 6 - Movement document; (b) The import license from Directorate General of Foreign Trade, wherever applicable; (b) Pre-shipment inspection certificate issued by the inspection agency of the exporting country or the inspection and certification agency approved by Directorate General of Foreign Trade; (c) The valid consents to operate under the Air and Water Acts and the authorisation under these rules, for actual users. For traders, only valid authorisation from concerned SPCB is required; (d) The chemical analysis report of the waste being imported; (e) An acknowledged copy of the annual return filed with concerned SPCB for import in the last financial year.
3	B1100	<p>Metal bearing wastes arising from melting, smelting and refining of metals:</p> <ul style="list-style-type: none"> - Hard Zinc spelter - Zinc-containing drosses: <ul style="list-style-type: none"> ~ Galvanizing slab zinc top dross (>90% Zn) ~ Galvanizing slab zinc bottom dross (>92% Zn) ~ Zinc die casting dross (>85% Zn) ~ Hot dip galvanizers slab zinc dross (batch) (>92% Zn) ~ Zinc skimmings - Aluminium skimmings (or skims) excluding salt slag 	<ul style="list-style-type: none"> (c) Duly filled up Form 6 - Movement document; (d) The import license from Directorate General of Foreign Trade, wherever applicable; (e) Pre-shipment inspection certificate issued by the inspection agency of the exporting country or the inspection and certification agency approved by Directorate General of Foreign Trade; (f) The valid consents to operate under the Air and Water Acts and the authorisation under these rules, for actual users. For traders, only valid authorisation from concerned SPCB is required; (g) The chemical analysis report of the waste being imported; (h) An acknowledged copy of the annual return filed with concerned SPCB for import in the last financial year.
4	B1110	Electrical and electronic assemblies (including printed circuit boards, electronic components and wires) destined for direct reuse and not for recycling or final disposal	
(a)		Used electrical and electronic assemblies imported for repair and	(a) Duly filled up Form 6 - Movement document;

(1)	(2)	(3)	(4)
		to be re-exported after repair within one year of import	<ul style="list-style-type: none"> (b) Undertaking for re-export; (c) Details of previous import, if there has been any and confirmation regarding their re-export; (d) An acknowledged copy of the annual return filed with concerned SPCB for import in the last financial year (e) Certificate from exporting company for accepting the repaired and unrepairable electrical and electronic assemblies and the spares or part or component or consumables being re-exported.
(b)		Used electrical and electronic assemblies imported for rental purpose and re-exported back within one year of import	<ul style="list-style-type: none"> (a) Duly filled up Form 6 - Movement document; (b) Undertaking for re-export; (c) Details of previous import, if there has been any and confirmation regarding their re-export; (d) An acknowledged copy of the annual return filed with concerned SPCB for import in the last financial year
(c)		Used electrical and electronic assemblies exported for repair and to be re-imported after repair	<ul style="list-style-type: none"> (a) Duly filled up Form 6 - Movement document; (b) Proof of export of the defective electrical and electronic assemblies i.e. shipping or airway document authenticated by Customs
(d)		Used electrical and electronic assemblies imported for testing, research and development, project work purposes and to be re-exported back within a period of three years from the date of import	<ul style="list-style-type: none"> (a) Duly filled up Form 6 - Movement document; (b) Undertaking for re-export; (c) Details of previous import, if there has been any and confirmation regarding their re-export; (d) Chartered Engineer Certificate or certificate from accredited agency of exporting country indicating the functionality, manufacturing date, residual life and serial number; (e) an acknowledged copy of the annual return filed with concerned SPCB for import in the last financial year; (f) Certificate from exporting company for accepting the second hand functional or non-functional electrical and electronic assemblies and/or the spares or part or component or consumables being

(1)	(2)	(3)	(4)
			re-exported at the end of three years.
(e)		Spares imported for warranty replacements provided equal number of defective / non-functional parts are exported back within one year of the import.	<p>(a) Duly filled up Form 6 - Movement document;</p> <p>(b) if refurbished components being imported as replacement to defective component then undertaking for export of equivalent numbers of defective components;</p> <p>(c) Details of previous import, if there has been any and confirmation regarding their re-export;</p> <p>(d) Certificate from exporting company for accepting the re-export of defective or non-functional spares or part or component or consumables being re-exported;</p> <p>(e) Documents on the declared policy regarding the use of second hand or refurbished spare parts for repair of electrical and electronic assemblies during warranty period.</p>
(f)		Used electrical and electronic assemblies imported by Ministry of Defence, Department of Space and Department of Atomic Energy.	---
(g)		Used electrical and electronic assemblies (not in bulk; quantity less than or equal to three) imported by the individuals for their personal uses.	---
(h)		Used Laptop, Personal Computers, Mobile, Tablet up to 03 number each imported by organisations in a year.	---
(i)		Used electrical and electronic assemblies owned by individuals and imported on transfer of residence.	As per existing guidelines of Custom Authority
(j)		Used electrical and electronic assemblies, spares, imported by airlines for aircraft maintenance and remaining either on board or under the custodianship of the respective airlines warehouses located on the airside of the custom bonded areas.	----

(1)	(2)	(3)	(4)
(j)		Used multifunction print and copying machines (MFDs)*	<p>(a) The country of Origin Certificate along with bill of lading and packaging;</p> <p>(b) The certificate issued by the inspection agency as certified by the exporting country or the inspection and certification agency approved by Directorate General Foreign Trade (DGFT) for functionality, having residual life of not less than five years and serial number;</p> <p>(c) Extended Producer Responsibility-Authorisation under e-waste (Management and Handling) Rules, 2011 as amended from time to time as Producer;</p> <p>(d) The MFDs shall be for printing A 3 size and above;</p> <p>(e) An acknowledged copy of the annual return filed with concerned SPCB for import in the last financial year.</p>
5	B3020	<p>Paper, paperboard and paper product wastes</p> <p>The following materials, provided they are not mixed with hazardous wastes:</p> <p>Waste and scrap of paper or paperboard of:</p> <ul style="list-style-type: none"> - unbleached paper or paperboard or of corrugated paper or paperboard - other paper or paperboard, made mainly of bleached chemical pulp, not coloured in the mass - paper or paperboard made mainly of mechanical pulp (for example newspapers, journals and similar printed matter) - other, including but not limited to <ul style="list-style-type: none"> (1) laminated paperboard (2) unsorted scrap 	<p>(a) Duly filled up Form 6 – Movement document;</p> <p>(b) The import license from Directorate General of Foreign Trade, wherever applicable;</p> <p>(i) Pre-shipment inspection certificate issued by the inspection agency of the exporting country or the inspection and certification agency approved by Directorate General of Foreign Trade;</p> <p>(c) The valid consents to operate under the Air and Water Acts and the authorisation under these rules, for actual users. For traders, only valid authorisation from concerned SPCB is required;</p> <p>(d) The chemical analysis report of the waste being imported;</p> <p>(e) an acknowledged copy of the annual return filed with concerned State Pollution Control Board for import in the last financial year.</p>
6.	B3140	Aircraft Tyres exported to Original Equipment Manufacturers for re-treading and re-imported after re-treading by airlines for aircraft	As per existing guidelines of Custom Authority

(1)	(2)	(3)	(4)
		maintenance and remaining either on board or under the custodianship of the respective airlines warehouses located on the airside of the custom bonded areas	

Note: * The policy for free trade for multifunction print and copying machine to be reviewed once the MFDs are domestically manufactured.

FORM 1
[See rule 6 (1)]

Application required for grant/renewal of authorisation for generation or collection or storage or transport or reception or recycling or reuse or recovery or pre-processing or co-processing or utilisation or treatment or disposal of hazardous and other waste

Part A: General (to be filled by all)

1. (a) Name and address of the unit and location of facility :
(b) Name of the occupier of the facility or operator of disposal facility with designation, Tel, Fax and e-mail:
(c) Authorisation required for (Please tick mark appropriate activity or activities:
 - (i) Generation
 - (ii) Collection
 - (iii) Storage
 - (iv) Transportation
 - (v) Reception
 - (vi) Reuse
 - (vii) Recycling
 - (viii) Recovery
 - (ix) Pre-processing
 - (x) Co-processing
 - (xi) Utilisation
 - (xii) Treatment
 - (xiii) Disposal
 - (xiv) Incineration
 - (d) In case of renewal of authorisation previous authorisation numbers and dates and provide copies of annual returns of last three years including the compliance reports with respect to the conditions of Prior Environmental Clearance, wherever applicable:
2. (a) Nature and quantity of waste handled per annum (in metric tonne or kilo litre)
(b) Nature and quantity of waste stored at any time (in metric tonne or kilo litre)
3. (a) Year of commissioning and commencement of production:
(b) Whether the industry works:
 - (i) 01 Shift
 - (ii) 02 Shifts
 - (iii) Round the clock
4. Provide copy of the Emergency Response Plan (ERP) which should address procedures for dealing with emergency situations (viz. Spillage or release or fire) as specified in the guidelines of Central Pollution Control Board. Such ERP shall comprise the following, but not limited to:
 - Containing and controlling incidents so as to minimise the effects and to limit danger to the persons, environment and property;
 - Implementing the measures necessary to protect persons and the environment;
 - Description of the actions which should be taken to control the conditions at events and to limit their consequences, including a description of the safety equipment and resources available;
 - Arrangements for training staff in the duties which they are expected to perform;

- Arrangements for informing concerned authorities and emergency services; and
- Arrangements for providing assistance with off-site mitigatory action.

5. Provide undertaking or declaration to comply with all provisions including the scope of submitting bank guarantee in the event of spillage, leakage or fire while handling the hazardous and other waste.

Part B: To be filled by hazardous waste generators

1. (a) Products and by-products manufactured (names and product wise quantity per annum):

(b) Process description including process flow sheet indicating inputs and outputs (raw materials, chemicals, products, by-products, wastes, emissions, waste water etc.) Please attach separate sheets:

(c) Characteristics (waste-wise) and Quantity of waste generation per annum:

(d) Mode of management of (c) above:

- Capacity and mode of secured storage within the plant;
- Utilisation within the plant (provide details);
- If not utilised within the plant, please provide details of what is done with this waste;
- Arrangement for transportation to actual users/ TSDF;

(e) Details of the environmental safeguards and environmental facilities provided for safe handling of all the wastes at point (c) above;

2. Hazardous and other wastes generated as per these rules from storage of hazardous chemicals as defined under the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989

Part C: To be filled by Treatment, storage and disposal facility operators

1. Provide details of the facility including:

- Location of site with layout map;
- Safe storage of the waste and storage capacity;
- The treatment processes and their capacities;
- Secured landfills;
- Incineration, if any;
- Leachate collection and treatment system;
- Fire fighting systems;
- Environmental management plan including monitoring; and
- Arrangement for transportation of waste from generators.

2. Provide details of any other activities undertaken at the Treatment, storage and disposal facility site.

3. Attach a copy of prior Environmental Clearance.

Part D: To be filled by recyclers or pre-processors or co-processors or users of hazardous or other wastes

1. Nature and quantity of different wastes received per annum from domestic sources or imported or both:
2. Installed capacity as per registration issued by the District Industries Centre or any other authorised Government agency. Provide copy:
3. Provide details of secured storage of wastes including the storage capacity:
4. Process description including process flow sheet indicating equipment details, inputs and outputs (input wastes, chemicals, products, by-products, waste generated, emissions, waste water, etc.). Attach separate sheets:
5. Provide details of end users of products or by-products:
6. Provide details of pollution control systems such as Effluent Treatment Plant, scrubbers, etc. including mode of disposal of waste:
7. Provide details of occupational health and safety measures:
8. Has the facility been set up as per Central Pollution Control Board guidelines? If yes, provide a report on the compliance with the guidelines:
9. Arrangements for transportation of waste to the facility:

**Signature of the Applicant
Designation**

Date.....

Place.....

FORM 2
[See rule 6(2)]

FORM FOR GRANT OR RENEWAL OF AUTHORISATION BY STATE POLLUTION CONTROL BOARD TO THE OCCUPIERS, RECYCLERS, REPROCESSORS, REUSERS, USER AND OPERATORS OF DISPOSAL FACILITIES

1. Number of authorisation and date of issue :
2. Reference of application (No. and date) :
3.ofis hereby granted an authorisation based on the enclosed signed inspection report for generation, collection, reception, storage, transport, reuse, recycling, recovery, pre-processing, co-processing, utilisation, treatment, disposal or any other use of hazardous or other wastes or both on the premises situated at.....

Details of Authorisation

Sl. No.	Category of Hazardous Waste as per the Schedules I, II and III of these rules	Authorised mode of disposal or recycling or utilisation or co-processing, etc.	Quantity (ton/annum)

- (1) The authorisation shall be valid for a period of
- (2) The authorisation is subject to the following general and specific conditions (Please specify any conditions that need to be imposed over and above general conditions, if any):

A. General conditions of authorisation:

1. The authorised person shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.
2. The authorisation or its renewal shall be produced for inspection at the request of an officer authorised by the State Pollution Control Board.
3. The person authorised shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this authorisation.
4. Any unauthorised change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.
5. The person authorised shall implement Emergency Response Procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time;
6. The person authorised shall comply with the provisions outlined in the Central Pollution Control Board guidelines on “Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Waste and Penalty”
7. It is the duty of the authorised person to take prior permission of the State Pollution Control Board to close down the facility.
8. The imported hazardous and other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation.

9. The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
10. The hazardous and other waste which gets generated during recycling or reuse or recovery or pre-processing or utilisation of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorisation.
11. The importer or exporter shall bear the cost of import or export and mitigation of damages if any.
12. An application for the renewal of an authorisation shall be made as laid down under these Rules.
13. Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
14. Annual return shall be filed by June 30th for the period ensuring 31st March of the year.

B. Specific conditions:

Date:

**Signature of Issuing Authority
Designation and Seal**

FORM 3

[See rules 6(5), 13(7), 14(6), 16(5) and 20 (1)]

FORMAT FOR MAINTAINING RECORDS OF HAZARDOUS AND OTHER WASTES

- 1. Name and address of the facility :
- 2. Date of issuance of authorisation and its reference number :
- 3. Description of hazardous and other wastes handled (Generated or Received)

Date	Type of waste with category as per Schedules I, II and III of these rules	Total quantity (Metric Tonnes)	Method of Storage	Destined to or received from

* Fill up above table separately for indigenous and imported waste.

- 4. Date wise description of management of hazardous and other wastes including products sent and to whom in case of recyclers or pre-processor or utiliser:
- 5. Date of environmental monitoring (as per authorisation or guidelines of Central Pollution Control Board):

Signature of occupier

Date.....

Place.....

FORM 4

[See rules 6(5), 13(8), 16(6) and 20 (2)]

FORM FOR FILING ANNUAL RETURNS

[To be submitted to State Pollution Control Board by 30th day of June of every year for the preceding period April to March]

1. Name and address of facility:
2. Authorisation No. and Date of issue:
3. Name of the authorised person and full address with telephone, fax number and e-mail:
4. Production during the year (product wise), wherever applicable

Part A. To be filled by hazardous waste generators

1. Total quantity of waste generated category wise
2. Quantity dispatched
 - (i) to disposal facility
 - (ii) to recycler or co-processors or pre-processor
 - (iii) others
3. Quantity utilised in-house, if any -
4. Quantity in storage at the end of the year –

Part B. To be filled by Treatment, storage and disposal facility operators

1. Total quantity received -
2. Quantity in stock at the beginning of the year -
3. Quantity treated –
4. Quantity disposed in landfills as such and after treatment –
5. Quantity incinerated (if applicable) -
6. Quantity processed other than specified above -
7. Quantity in storage at the end of the year -

Part C. To be filled by recyclers or co-processors or other users

1. Quantity of waste received during the year –
 - (i) domestic sources
 - (ii) imported (if applicable)
2. Quantity in stock at the beginning of the year -

3. Quantity recycled or co-processed or used –
4. Quantity of products dispatched (wherever applicable) –
5. Quantity of waste generated -
6. Quantity of waste disposed -
7. Quantity re-exported (wherever applicable)-
8. Quantity in storage at the end of the year -

**Signature of the Occupier or
Operator of the disposal facility**

Date.....

Place.....

FORM 5*[See rules 13 (1) and 14 (1)]***APPLICATION FOR IMPORT OR EXPORT OF HAZARDOUS AND OTHER WASTE
FOR REUSE OR RECYCLING OR RECOVERY OR CO-PROCESSING OR UTILISATION****TO BE FILLED IN BY APPLICANT**

S. No.	Description	Details to be furnished by the importer or exporter
(1)	(2)	(3)
1.	Importer or Exporter (name and address) in India	
	Contact person	
	Tel, fax and e-mail	
	Facility location/address	
	Reason for import or export	
2.	Importer or exporter (name and address) outside of India	
3.	Details of waste to be imported or exported	
	(a) Quantity	
	(b) Basel No.	
	(c) Single/multiple movement	
	(d) Chemical composition of waste (attach details), where applicable	
	(e) Physical characteristics	
	(f) Special handling requirements, if applicable	
4.	For Schedule III A hazardous waste whether Prior Informed Consent has been obtained	
5.	For importer (a) Process details along with environmental safeguard measures (attach separate sheet) (b) Capacity of recycling or co-processing or recovery or utilization Enclose a copy each of valid authorisation and valid consent to operate from SPCB	
6.	Details of import against the Ministry of Environment, Forest and Climate Change permission in the previous three years	
7.	Port of entry	

9. Undertaking

:

I hereby solemnly undertake that:

- (i) The information is complete and correct to the best of my knowledge and legally-enforceable written contractual obligations have been entered into and that my applicable insurance or other financial guarantees are or shall be in force covering the transboundary movement.
- (ii) The waste permitted shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation.

- (iii) The record of consumption and fate of the imported waste shall be recorded and report sent to the SPCB every quarter.
- (iv) The hazardous or other waste which gets generated in our premises by the use of imported hazardous or other wastes in the form of raw material shall be treated and disposed of as per conditions of authorisation.
- (v) I agree to bear the cost of export and mitigation of damages if any.
- (vi) I am aware that there are significant penalties for submitting a false certificate/ undertaking/ disobedience of the rules and lawful orders including the possibility of fine and imprisonment.
- (vii) The exported wastes shall be taken back, if it is not acceptable to the importer.

**Signature of the Applicant
Designation**

Date.....

Place.....

FORM – 6

[See rules 13(2), 13 (10) and 14 (5)]

TRANSBOUNDARY MOVEMENT- MOVEMENT DOCUMENT

S.No	Description	Details to be furnished by the exporter or importer
(1)	(2)	(3)
1	Exporter (Name and Address) Contact Person Tele, Fax and email	:
2.	Generator(s) of the waste (Name and Address) ¹ Contact Person Tele, Fax and email Site of generation	:
3.	Importer or Actual user (Name and Address) Contact person Tele, Fax and email	:
4.	Trader (Name and Address) Contact person Tele, Fax and email Details of actual user (Name, Address, Telephone and email)	:
5.	Corresponding to applicant Ref. No., If any	:
6.	Bill of lading (attach copy)	:
7.	Country of import/export	:
8.	General description of waste (a) Quantity (b) Physical characteristics (c) Chemical composition of waste (attach details), where applicable (d) Basel No. (e) UN Shipping name (f) UN Class (g) UN No (h) H Number (i) Y Number (j) ITC (HS) (k) Customs Code (H.S.) (l) Other (specify)	:
9.	Type of packages	:
	Number	:
10.	Special handling requirements including emergency provision in case of accidents	:
11.	Movement subject to single/multiple consignment In case of multiple movement- (a) Expected dates of each shipment or expected frequency of the shipments (b) Estimated total quantity and quantities for each individual shipment	:

(1)	(2)	(3)
12.	Transporter of waste (Name and Address) ¹ Contact Person Tele, Fax and email Registration number Means of transport (road, rail, inland waterway, sea, air) ⁴ Date of Transfer Signature of Carrier's representative	: : : : :
13.	Exporter's declaration for hazardous and other waste: I certify that the information in Sl. Nos. 1 to 12 above are complete and correct to my best knowledge. I also certify that legally-enforceable written contractual obligations have been entered into and are in force covering the transboundary movement regulations/rules. Date:..... Signature:..... Name:.....	
TO BE COMPLETED BY IMPORTER (ACTUAL USER OR TRADER)		
14.	Shipment received by importer/ actual user/trader ^{2/3} Quantity received.....Kg/litres Date: Name: Signature:	
15.	Methods of recovery R code* Technology employed (Attached details if necessary)	
16.	I certify that nothing other than declared goods covered as per these rules is intended to be imported in the above referred consignment and will be recycled /utilized. Signature: Date:	
17.	SPECIFIC CONDITIONS ON CONSENTING TO THE MOVEMENT if applicable.	(attach details)
Notes:- (1) Attach list, if more than one; (2) Select appropriate option; (3) Immediately contact competent authority in case of any emergency; (4) If more than one transporter carriers, attach information as required in SL. No. 12.		

List of abbreviations used in the Movement Document

Recovery Operations (*)

R1 Use as a fuel (other than in direct incineration) or other means to generate energy. **R2** Solvent reclamation/regeneration.

- R3** Recycling/reclamation of organic substances which are not used as solvents. **R4** Recycling/reclamation of metals and metal compounds.
- R5** Recycling/reclamation of other inorganic materials.
- R6** Regeneration of acids or bases.
- R7** Recovery of components used for pollution abatement.
- R8** Recovery of components from catalysts.
- R9** Used oil re-refining or other reuses of previously used oil.
- R10** Land treatment resulting in benefit to agriculture or ecological improvement
- R11** Uses of residual materials obtained from any of the operations numbered R 1 to R 10

Date:

Signature:

Place:

Designation:

FORM 7
[See rule 13 (2) (c)]

**APPLICATION FORM FOR ONE TIME AUTHORISATION OF TRADERS FOR PART- D OF
SCHEDULE III, WASTE**

[To be submitted by trader to the State Pollution Control Board]

1.	Name and address of trader : with Telephone, Fax Number and e-mail		
2.	TIN/VAT Number/Import/ Export Code	:	
3.	Description and quantity of other waste to be imported	:	
4.	Details of storage, if any	:	
5.	Names and address of authorised actual user (s)	:	

Signature of the authorised person

Date:

Place:

FORM 8*[See rules 17 (1) and 18 (2)]***LABELLING OF CONTAINERS OF HAZARDOUS AND OTHER WASTE**

Handle with care

Waste category and characteristics as per Part C of Schedules II and III of these rules	Incompatible wastes and substances
Total quantity	Date of storage
Physical State of the waste (Solid/Semi-solid/liquid):	
Sender's name and address	Receiver's name and address
Phone.....	Phone.....
E-mail.....	E-mail.....
Tel. and Fax No.....	Tel. and Fax No.....
Contact person.....	Contact person.....
In case of emergency please Contact	

Note:

1. *Background colour of label - fluorescent yellow.*
2. *The word, 'HAZARDOUS WASTES' and 'HANDLE WITH CARE' to be prominent and written in red, in Hindi, English and in vernacular language.*
3. *The word 'OTHER WASTES' to be written prominently in orange, in Hindi, English and in vernacular language.*
4. *Label should be of non-washable material and weather proof.*

FORM 9
[See rule 18 (2)]

TRANSPORT EMERGENCY (TREM) CARD

[To be carried by the transporter during transportation of hazardous and other wastes, provided by the sender of waste]

1. Characteristics of hazardous and other wastes:

S. No.	Type of waste	Physical properties/	Chemical constituents	Exposure hazards	First Aid requirements

2. Procedure to be followed in case of fire :
3. Procedure to be followed in case of spillage/accident/explosion :
4. For expert services, please contact :
(i) Name and Address :
(ii) Telephone No. :

(Name, contact number and signature of sender)

Date.....

Place.....

FORM 11
[See rule 22]

FORMAT FOR REPORTING ACCIDENT

[To be submitted by the facility or sender or receiver or transporter to the State Pollution Control Board]

1. The date and time of the accident :
2. Sequence of events leading to accident :
3. Details of hazardous and other wastes involved in accident :
4. The date for assessing the effects of the accident on health or the environment :
5. The emergency measures taken :
6. The steps taken to alleviate the effects of accidents :
7. The steps take to prevent the recurrence of such an accident :

Date:

Signature:

Place:

Designation:

FORM 12
[See rule 24 (1)]

**APPLICATION FOR FILING APPEAL
AGAINST THE ORDER PASSED BY STATE POLLUTION CONTROL BOARD**

- | | | | |
|----|---|---|---|
| 1. | Name and address of the person making the appeal | : | |
| 2. | Number, date of order and address of the authority which passed the order, against which appeal is being made | : | (certified copy of the order be attached) |
| 3. | Ground on which the appeal is being made | : | |
| 4. | Relief sought for | : | |
| 5. | List of enclosures other than the order referred in point 2 against which the appeal is being filed. | : | |

Signature.....

Name and address.....

Date:

-----X-----X-----

[23-16/2009- HSMD]

(Bishwanath Sinha)
Joint Secretary to Government of India

ANNEXURE –III

**TOTAL HAZARDOUS WASTE RECEIVED FROM
VARIOUS INDUSTRIES OF KERALA IN 2016
AT KEIL**

Total Hazardous Waste received from various industries of Kerala in 2016 at KEIL

SL No	Customer Name	Waste Type	District	Schedule	Total waste collected in t/year
1	A - One Plywoods & Boards (NO:131)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.005
2	A One Boards & Panels (NO:159)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.05
3	A P K Plywoods (NO:288)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.94
4	A P M Terminal India (P) Ltd	Split Cassia	EKM	Schedule - II Class C1	14.69
5	Aaron International	Acid Free mud	PALAKKAD	Schedule - II Class C4	10.915
6	ABS Plywoods (No:259)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.255
7	Afra Plywoods (Knr No:01)	Glue and Boiler Ash	KANNUR	Schedule - I 25.1, 25.2	2.455
	Agappe Diagnostics Ltd.	Glass Bottles	EKM	Schedule -I 33.1	2.755
8	Agappe Diagnostics Ltd.	General Waste	EKM	Schedule -II Class C1	39.07
9	AIMS (Amritha)	Incineration Ash	EKM	Schedule - I 37.2	31.51
10	Air Oil Flare Gas (P) Ltd.	Insulation Waste	EKM		1.985
11	Aiswarya Ply Products	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.015
12	Aiswarya Plywood Industries (No:80)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.11
13	Ajmal Industries	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.02

14	Akay Flavours & Aromatics Pvt Ltd	ETP sludge	EKM	Schedule - I 35.3	19.755
15	Aksons Plywood (NO:289)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.275
16	Alleppey Fibre Tuft (P) Ltd	Coir mat waste	ALAPUZHA	Schedule -II Class C1	4.7
17	Ambadan Timber Industries (No:265)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.96
18	Amcos XL Paints (India) Pvt. Ltd.	Fillers and residue	EKM	Schedule - I 21.1	6.57
19	Anand Textiles(KHA:14)	ETP sludge	KANNUR	Schedule - I 24.1	5.284
20	Anna Aluminium Company Pvt. Ltd.	Sediments	EKM	Schedule - I 11.5	284.44
21	Apollo Tyres Ltd ,Kalamassery	Solid waste	EKM	Schedule -II Class C1	1.69
22	Apollo Tyres Ltd., TCR	Paint Can	THRISSUR	Schedule -II Class C1	1.635
23	Arafa Plywood & Veneers (No:103)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.87
23	Arjuna Natural Extracts Ltd	PVC Cut Waste	EKM	Schedule - II Class C1	0.7
24	Arjuna Natural Extracts Ltd	Boiler Ash, Extraction waste	EKM	Schedule - I 37.2	117.355
25	Ashan Exports & Furnishers	Tallow waste	EKM		61.86
26	Ashique Timber (No:142)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.07
27	Ashok Metal Crafts	ETP sludge	THRISSUR	Schedule - I 35.3	7.315
28	Asian Boards & Veneers (No:42)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.045
29	Aswathy Timbers	Solid Sludge	EKM	Schedule - I 25.1, 25.2	1.198
30	Augustan Textiles Colours Limited	ETP sludge	PALAKKAD	Schedule - I 24.1	0.86
31	AVT McCORMICK INGREDIENTS PVT.LTD.	ETP sludge	EKM	Schedule - I 35.3	249.265
32	AVT Natural Products Ltd	ETP sludge	EKM	Schedule - I 35.3	566.03
33	Beacon Power Systems	ETP sludge	EKM	Schedule - I 35.3	1.825

	Bharath Petroleum Coporation Ltd.	Insulation Waste	EKM		29.17
	Bharath Petroleum Coporation Ltd.	T11 solid sludge	EKM	Schedule - I 4.1	131.735
	Bharath Petroleum Coporation Ltd.	FCCU Catalyst ESP	EKM	Schedule - I 4.2	73.865
	Bharath Petroleum Coporation Ltd.	CRV 9/12	EKM	Schedule - I 4.2	47.33
	Bharath Petroleum Coporation Ltd.	DHV 12 CI guard	EKM	Schedule - I 4.2	1.87
	Bharath Petroleum Coporation Ltd.	DHH11	EKM	Schedule - I 4.2	6.54
	Bharath Petroleum Coporation Ltd.	DHV 13	EKM	Schedule - I 4.2	15.18
	Bharath Petroleum Coporation Ltd.	DHV13, DHH11, DHV 11	EKM	Schedule - I 4.2	9.47
	Bharath Petroleum Coporation Ltd.	Spent Catalyst DHV 12 ZnO and CI guard	EKM	Schedule - I 4.2	7.4
	Bharath Petroleum Coporation Ltd.	Alumina Ball	EKM	Schedule - I 4.2	26.48
	Bharath Petroleum Coporation Ltd.	Cataltyst Waste	EKM	Schedule - I 4.2	22.24
	Bharath Petroleum Coporation Ltd.	Wood and Plastic waste	EKM	Schedule - II ClassC1	39.55
35	Binu's Car Boutique	Rexine Waste	EKM	Schedule - II ClassC1	3.335
36	Bisiya Veneers and Plywoods	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.94
37	Bismi Timbers & Plywood (No:100)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1

38	Bismi Timebr Industries (No:67)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.07
39	Bombay Plywood Industries (No:220)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.72
40	Brahmins Foods India Pvt Ltd	Ash and Curry powder	IDUKKI	Schedule - II ClassC1	19.525
	Brahmins Foods India Pvt Ltd	Boiler Ash	IDUKKI	Schedule - I 37.2	17.925
	Brahmins Foods India Pvt Ltd	Plastic waste	IDUKKI	Schedule - II ClassC1	24.565
41	Brothers Veneer (No:248)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.975
42	BSES Kerala Power Ltd.,	Plastic waste, Asbestose	EKM	Schedule - II ClassC1	3.485
43	C.R Textiles (KHA:4)	ETP sludge	KANNUR	Schedule - I 24.1	3.88
44	Cannanore Handlooms Exports (KHA:1)	ETP sludge	KANNUR	Schedule - I 24.1	5.51
45	Century Plywood (No:257)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.01
46	Chandrika Plywood (NO:37)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	4.04
47	Chandrika Saw Mills (No:38)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	3.52
48	Changanacheriyil Veneers (No:56)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.965
49	Chikoos Colour Coats	Powder Coating waste	EKM	Schedule - II Class A	4.135
50	Classic Concepts Home India Pvt. Ltd.	ETP sludge	EKM	Schedule - I 35.3	0.05
51	Classic Wood and Veneers (No:24)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.78
52	CNA Tex Processors (P) Ltd	Sludge	PALAKKAD	Schedule - I 24.1	8.695
53	Cochin International Airport	Discarded items	EKM	Schedule - II ClassC1	0.11
54	Cochin Shipyard Ltd	Industrial Waste	EKM	Schedule - I 3.1	5044.72
	Cochin Shipyard Ltd	Paint sludge	EKM	Schedule - I 21.1	3.99
	Cochin Shipyard Ltd	Used Copper Slag	EKM	Schedule - I 3.1	2572.37
55	Cochin Special Economic Zone	ETP sludge	EKM	Schedule - I 35.3	302.8
56	Cochin Veneers (No:23)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.78

57	Colour India Paints & Inks Pvt Ltd	Paint sludge	EKM	Schedule - I 21.1	5.7
58	Comfoams Limited	ETP sludge	THRISSUR	Schedule - I 35.3	76.585
59	Cosmos Powder Coating	Powder Coating waste	THRISSUR	Schedule - II Class A , A68,71,66	0.555
60	Crescent Ply Products	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.995
61	D K V Enterprises (P) Ltd	Cataltyst Waste	EKM	Schedule - I 4.2	388.45
62	Decan Plywood (No:244)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.905
63	Deepak Rubber & Coir Products	Rubber and Plastic Waste	EKM	Schedule - II ClassC1	1.875
64	Delphi Connection Systems India Ltd	General Waste	EKM	Schedule - II ClassC1	3.2
65	Delta Plywoods(No:245)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.19
66	Delta Wood Panels	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.19
67	Dent Care Dental Lab Ltd	Ceramic Waste	EKM		64.97
68	Dynamic Techno Medical Pvt. Ltd.	General Waste	EKM	Schedule - II ClassC1	41.42
69	Elavumkudy Veneers (17)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.16
70	Elite Foods (P) Ltd	Plastic waste	EKM	Schedule - II ClassC1	2.11
71	English Indian Clay Ltd	ETP sludge	TVM	Schedule - I 35.3	296.015
72	Enjakudy Industries (No:117)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.93
73	Epees Plywoods	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.93
74	Everest Wood Industries(No:263)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	3.05
75	Everest Plywoods (No:262)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	3.16
76	Excelearthings	ETP sludge	EKM	Schedule - I 35.3	1.36
77	Extra Weave-Cherthala	ETP sludge	ALAPUZHA	Schedule - I 35.3	36.195
78	F.A.C.T., Ambalamedu	Spent Catalyst	EKM	Schedule - I 18.1	10.3
79	Falcon Industries (No:196)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.265
80	FCI OEN Connectors Ltd	ETP sludge	EKM	Schedule - I 35.3	40.455
81	Fibre World	Coir mat waste	ALAPUZHA	Schedule - II Class C1	42.595
82	Fiza Plywoods(NO:183)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	2.595

83	Footpro Solutions (P) Ltd	Rubber Scrap Waste	EKM	Schedule - II Class C1	1.155
84	Galilea Chemicals	Packing Paper, Cotton Waste	EKM	Schedule - II ClassC1	1.95
85	Gama Colour Coats	ETP sludge	EKM	Schedule - II Class A , A71	17.17
86	Geeyem Motors (P) Ltd.	Oile soaked cotton waste	EKM	Schedule - II ClassC1	48.89
87	Gek Wood Pvt Ltd (No:193)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.93
88	Global Thermal Control Systems (P) Ltd	Insulation Waste	EKM		7.315
89	Global Veneers & Ply (No:222)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.668
90	Golden Wood Industries (NO:67)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	2.625
91	Great Indian Textiles (KHA:8)	ETP sludge	KANNUR	Schedule - I 24.1	0.086
92	Greenland Plywood (No:219)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.85
93	Green Gold Panels	Glue and Boiler Ash	KANNUR	Schedule - I 25.1, 25.2	1.102
94	Green Zone Industries	Glue and Boiler Ash	KOTTAYAM	Schedule - I 25.1, 25.2	1.855
95	Greenfield Chemicals Footwearts	ETP sludge	EKM	Schedule - II ClassC1	17.32
96	Greenland Particle Boards Pvt Ltd	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.935
97	Greenland Plywood (No:292)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.9
98	Harrisons Malayalam Ltd., Trichur	ETP sludge	THRISSUR	Schedule - I 35.3	2.07
99	Herbal Isolates (P) Ltd	ETP sludge	EKM	Schedule - I 35.3	25.195
100	Hi Build Coatings Pvt. Ltd.	Fillers and residue	EKM	Schedule - I 21.1	79.7
101	High Range Ply & Boards (No:217)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.666
102	Hindalco Industries Ltd.,	Cryolite waste	EKM	Schedule - I 11.1	8.745
	Hindalco Industries Ltd.,	Alkaline Residue	EKM	Schedule - I 11.1	158.28
103	Hindustan Insecticides Ltd	ETP sludge	EKM	Schedule - I 35.3	342.325
104	Hindustan Petroleum Corporation	Oil Contaminated soil	EKM	Schedule - I 4.5	82.44

	Ltd, Kadava					
105	Hindustan Petroleum Corporation Ltd	Paint sludge	EKM	Schedule - I 21.1	1.46	
106	Hindustan Textiles (KHA:13)	ETP sludge	KANNUR	Schedule - I 24.1	1.241	
107	Hindusthan Plywood (No:43)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.945	
108	Hitech Industries	Production Waste	EKM		2.185	
109	HI-Tech Plywoods (No:171)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.975	
110	HLL Lifecare Limited	White Colour powder	EKM	Schedule - I 28.4	148.89	
	HLL Lifecare Limited	Sponge Waste	EKM	Schedule - II ClassC1	1.36	
	HLL Lifecare Limited	ETP sludge	EKM	Schedule - I 35.3	19.16	
	HLL Lifecare Limited	White Colour Slurry	EKM	Schedule - I 28.1	195.885	
111	I G M WOOD PRODUCTS (No:20)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	10.875	
112	Ibson Industries (No:123)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	2.785	
114	Ibson Plywoods	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	3.13	
115	IGA Tech Electronics Pvt. Ltd.	Thermocol	EKM	Schedule - II ClassC1	0.1	
116	Indian Institute of Science Education & Research	Sillica	TVM		1.175	
117	Indian Medical Association	Incineration Ash	PALAKKAD	Schedule - I 37.2	893.005	
118	Indiana Plywoods (No:302)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.25	
119	Indus Ply and Boards	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.043	
120	Inter Decor Industries Ltd.	Used Plastic Waste	EKM	Schedule - II ClassC1	4.005	
	Inter Decor Industries Ltd.	Powder Coating waste	EKM	Schedule - II Class A , A71,68	10.665	
121	Intercon Wood Industries (No:299)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	3.08	
122	ISGEC Heavy Engineering Ltd	Insulation Waste	EKM		46.61	

123	J B L Timber Industries (No:149)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.09
124	J.J Plywood (No:253)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.02
125	J.J Plywood Industries (No:116)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.97
126	J.J Timber Industries (NO:311)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.98
127	Jalin Timbers (No:144)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.905
128	Jawan Ply Boards (No:41)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.99
129	Jismy Timber Products (No:167)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.16
130	Jubily Plywoods (No:112)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.095
131	Jumbo Plywood	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.905
132	K K A Plywoods (No:260)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.13
133	Kabsons India Plywoods (102)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.96
134	Kaisons Plywood (No:293)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.895
135	Kalarickal Plywood (No:66)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.14
136	Kalyan Plywood (No:168)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.05
137	Kalyan Plywood Industries (NO:77)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.955
138	Kanampuram Industries	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.043
139	Kanampuram Veneers (No:133)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.265
140	Kancor Ingredients Ltd	ETP sludge	EKM	Schedule - I 35.3	16.32
141	Kannagayathu Metals	ETP sludge	EKM	Schedule - II Class A , A71	23.19
142	Kemi Veneers (No:114)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	2.7

143	Kera Fibre Tex International Pvt. Ltd	Coir mat waste	EKM	Schedule - II ClassC1	491.985
144	Kerala Agro Machinery Corporation Ltd	Paint sludge	EKM	Schedule - I 21.1	17.305
145	Kerala Balers Pvt Ltd	Coir mat waste	ALAPUZHA	Schedule - II ClassC1	380.205
146	Kerala Swamill & Plywoods (No:246)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.905
147	KIMS AL SHIFA HEALTHCARE (P) LTD	Mercury	MALAPPURAM	Schedule - II Class A , A7	0.002
148	KIMS Hospital	Plastic Waste	EKM	Schedule - II ClassC1	10.49
149	Kings Plywoods	Solid Sludge	EKM	Schedule - I 25.1, 25.2	1.197
150	Kitex Garments Ltd.	ETP sludge	EKM	Schedule - I 35.3	1811.07
151	Kitex Limited	ETP sludge	EKM	Schedule - I 35.3	8.47
152	Kokkadan Plywood(No:242)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.7
153	Kottakkal Arya Vaidyasala	Non Hazardous waste	EKM	Schedule - II Class C1	38.31
154	Kuncharath Viva Carpets	Coir mat waste	ALAPUZHA	Schedule - II ClassC1	3.075
155	Kunnathan Chip Boards Pvt Ltd	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.98
156	Kunnathan Industries	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.99
157	Kunnathan Wood Product(No:229)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.95
158	Kuttikkattukudiyil Sawmill and Veneers (58)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	2.585
159	Kuttiyuzha Wood Products (Nos: 61)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.54
160	Kutty Ply (No:60)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.37
161	Lakeshore Hospital & Research Centre Ltd	Lead Apron	EKM	Schedule - II Class A , A5	0.105

162	Leighton Welpsun Contractors (P) Ltd	Oil filters	EKM	Schedule - II Class C1	0.29
163	M & S Enterprises (No:94)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.735
164	M A B Veneers & Plywood (No:86)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.96
165	M A M Plywood Industries (No:266)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.1
166	M.S Boards & Panels (NO:121)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.08
167	M.S Plywood (No: 120)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.19
168	M.Star Plywood (No:195)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.01
169	Makkarson Ply Boards (No:104)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.345
170	Mampilly Plywood Industries (No:52)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	11.59
171	Marangattu Plywoods	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	3.305
172	Mardec R.K. Latex (P) Ltd.	Laminated Paking Cover	THRISSUR	Schedule - II Class C1	2.525
	Mardec R.K. Latex (P) Ltd.	Lime residue	THRISSUR	Schedule - II Class C3	4.31
173	Mayithara Home Decor (P) Ltd.	Coir mat waste	ALAPUZHA	Schedule - II Class C1	21.68
174	Mayur Plywood(No:140)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.91
175	Mekha Ply Boards (No:227)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.95
176	Metal Tech Industries	ETP sludge	THRISSUR	Schedule - I 35.3	3.69
177	Microtrol Sterilisation Services (P)Ltd	Process waste	EKM	Schedule - II Class C3	14.495
178	Middle East Rubber & Engineering	Used Plastic waste, GeneralWaste	EKM	Schedule - II Class C1	5.055
179	MIL Controls Ltd.,	ETP sludge	THRISSUR	Schedule - I 35.3	7.5
	MIL Controls Ltd.,	Paint sludge	THRISSUR	Schedule - I 21.1	8.865
180	Mina Wood Industries	Glue and Boiler Ash	KANNUR	Schedule - I 25.1, 25.2	1.101

181	Modern Veneers (No:264)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	3.355
182	Modern Veneers (No:14)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.125
183	Moothedam Veneer&Industries (No:59)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	3.97
184	Mother India Plywood (No:303)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.305
185	Mundackal Industries (No:78)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.09
186	Naas Plywood Industries (No:73)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	4.445
187	National Ply & Boards (NO:31)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.205
188	NATIONAL PLY WOOD INDUSTRIES (No:163)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.37
189	NC John & Sons Pvt Ltd	ETP sludge	ALAPUZHA		19.665
190	Neerakkal Latex (P) Ltd.,	ETP sludge	ALAPUZHA		41.41
191	Neogen Food and Animal Security (India) Pvt Ltd	Expired materials	KOTTAYAM	Schedule - II Class C1	0.045
192	Nest Wood Industries (No:93)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.78
193	Nikson Ply & Veneers (NO:154)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.948
194	Nippon Motor Corporation Pvt. Ltd.,	Oile soaked cotton waste	EKM	Schedule - II Class C1	104.235
	Nitta Gelatin India Limited	Industrial Waste	THRISSUR	Schedule - I 35.3	395.34
195	Nitta Gelatin India Limited - Kakkanadu	ETP sludge and ash	EKM	Schedule - I 35.3	581.52
196	Nitta Gelatin India Limited- Koratty	Industrial Waste	THRISSUR	Schedule - I 35.3	6531.81
197	Njavallil Latex (P) Ltd.,	ETP sludge	EKM	Schedule - I 35.3	4.16
198	Nova Plywoods (No:90)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.85
199	OEN India Ltd	Metal Hydroxise sludge	EKM	Schedule - I 31.1	14.45

	Offshore Infrastructure Limited	Industrial Waste	EKM	Schedule - II Class C1	2.26
200	Offshore Infrastructure Limited	Shoe,plastic,Cloth	EKM	Schedule - II ClassC1	2.735
	Offshore Infrastructure Limited	Insulation Waste	EKM		77.74
201	P.A Boards (No:54)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.99
202	P.K Trading Company (No:186)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.535
203	P.K Wood Industries (No:177)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.125
204	P.K.A Plywood (NO:126)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.02
205	Pallipuram Electro Plating Industries	Sludge	EKM	Schedule - II Class A	4.635
	Pepsico India Holdings Pvt Ltd	Bio sludge	PALAKKAD	Schedule - I 35.3	232.635
	Pepsico India Holdings Pvt Ltd	ETP sludge	PALAKKAD	Schedule - I 35.3	204.21
	Pepsico India Holdings Pvt Ltd	General Waste	PALAKKAD	Schedule - II Class C1	18.58
206	Pepsico India Holdings Pvt Ltd	Sludge	PALAKKAD	Schedule - I 35.3	11.845
	Pepsico India Holdings Pvt Ltd	Used Carbon	PALAKKAD	Schedule - II Class C1	9.335
	Pepsico India Holdings Pvt Ltd	WTP	PALAKKAD	Schedule - I 35.3	39.365
207	Perfect Alloys	Lead Slag	ALAPUZHA	Schedule - II Class A , A5	64.065
208	Perfetti Van Melle India Pvt. Ltd.	Expired Food Products	EKM	Schedule - II ClassC1	12.465
209	Petronet LNG Limited	Solid waste	EKM	Schedule - II Class C1	7.065
210	Phillips Carbon Black Ltd	ETP sludge	EKM	Schedule - I 35.3	8.23
211	PKM Metal Building Company (P) Ltd	Asbestose Sheet	KOTTAYAM	Schedule - I 15.2	175.685
	PKM Metal Building Company (P) Ltd	ETP sludge	KOTTAYAM		0

212	Plant Lipids Pvt. Ltd.,	Ash and ETP Sludge	EKM		553.875
213	Plycon Lamination (No:96)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.985
214	Polyformalin Ltd.,	ETP sludge	EKM	Schedule - I 25.1, 25.2	8.425
215	Pooppally Coir Mills	Coir mat waste	ALAPUZHA	Schedule - II Class C1	27.96
216	Pooram Foods	ETP sludge	THRISSUR	Schedule - II Class C1	4.76
217	Popular Mega Motors (India)Pvt Ltd	Oile soaked cotton waste	EKM	Schedule - II Class C1	13.1
218	Power Coat Aluminium Electro Colouring	Electrocolouring waste	THRISSUR	Schedule - II Class A	0.99
219	Premier Timber Suppliers (No:48)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.69
220	Premier Veneers (NO:29)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.635
221	Prodair Air Products India (P) Ltd	Wood and Plastic waste	EKM	Schedule - II Class C1	223.29
222	PSN Automobiles Pvt. Ltd.	Oile soaked cotton waste	EKM	Schedule - II Class C1	72.36
223	Punchiri Plywoods	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.8
224	Puthukkattu Wood Products	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.76
225	Pyary Products	Paper and Plastic	EKM		2.02
226	Rabee- Wood Industries	Glue and Boiler Ash	KANNUR	Schedule - I 25.1, 25.2	1.101
227	Ram Coir Mills	Coir mat waste	ALAPUZHA	Schedule - II Class C1	4.39
228	Ramanand Electro Coats	Phosphate waste	EKM	Schedule - II Class A , A71	0.49
229	Ramla Match Works (No:124)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.63
230	Ras Plywood and Boards (No:313)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.65
231	Rasiya Timber Industries (No:44)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.985
232	Razlin Veneers and Plywoods (110)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.005

233	Real Wood Industries (No:240)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.03
234	Riotech Industries	Glue and Boiler Ash	IDUKKI	Schedule - I 25.1, 25.2	0.52
235	Rolex Ply and Boards (NO:238)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.8
236	Royal Wood Industries (25)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	3.815
237	Rubber Park India Private Ltd.	ETP sludge	EKM	Schedule - I 35.3	317.74
238	Rubfila International Ltd.,	ETP sludge	PALAKKAD	Schedule - I 35.3	159.28
239	S.B Plywoods (No:290)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.68
240	S.M. Ply, Muvattupuzha	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.73
241	Sajitha Wood Industries (No:125)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.14
242	Salah Plywood (No:65)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.88
243	Samson Ply Boards (No:152)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.965
244	Sandram Powder Coatings	Powder Coating waste	THRISSUR	Schedule - II Class A	1.485
245	Sangrose Laboratories Pvt Ltd	ETP sludge	ALAPUZHA	Schedule - II Class C1	43.035
246	Santro Wood Product (NO:226)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.95
247	Saraswathi Weaving Factory (KHA:11)	ETP sludge	KANNUR	Schedule - I 24.1	4.301
248	Saraswati Construction	Insulation Waste	EKM		5.52
249	Sathyam Ply Boards (No:221)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.72
250	Sea Wood Ply and Boards (No:286)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.93
251	Seven Star Plywoods and Block Boards(NO:228)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.95
252	Shabari Cottons (P) Ltd (KHA:2)	ETP sludge	KANNUR	Schedule - I 24.1	13.385
253	Sharp Plywood (No:202)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.96

254	Shifa Plywoods (162)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	4.486
255	Simons Plywoods (No:181)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.08
256	Skol Breweries Ltd.	Boiler Ash	THRISSUR	Schedule - I 37.2	96.865
257	Skyblue Plywoods (No:11)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.06
258	Sonia Industries (NO:187)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.685
259	Southern Electro Colouring	Sludge	THRISSUR	Schedule - II Class A	26.1
260	Southern Plywoods (NO:40)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.275
261	Southern Surface Finishers	ETP sludge	EKM	Schedule - I 12.6	0.175
262	Spectra Plywoods & Doors	Glue and Boiler Ash	KASARGODE	Schedule - I 25.1, 25.2	1.101
263	Sree Ganesh Industries	Sludge	KASARGODE	Schedule - II Class A , A71	0.335
264	Sree Sastha Plywoods (No:7)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	5.275
265	St Ann's Electro Coloured Products	Sludge	THRISSUR	Schedule - II Class A	1.56
266	Steel Industrials Kerala Limited	Solid waste, Glass, Wood	KOZHIKODE	Schedule - I 12.6	0.335
267	Steel Industries Kerala Ltd	Glass wool, Asbestose	KANNUR	Schedule - I 12.6	1.775
	Sud- Chemie India Pvt Ltd	Asbestose Sheet	EKM	Schedule - I 15.2	5.77
	Sud- Chemie India Pvt Ltd	Catalyst Waste	EKM	Schedule - I 4.2	144.87
268	Sud- Chemie India Pvt Ltd	Catalyst Waste- V2O5	EKM	Schedule - I 4.2	97.49
	Sud- Chemie India Pvt Ltd	Wood ash	EKM	Schedule - I 37.2	127.11
	Sud- Chemie India Pvt Ltd	Used Plastic bag	EKM	Schedule - II ClassC1	66.865
269	SUPERNOVA ELECTROCHEMICALS	ETP sludge	KASARGODE	Schedule - I 12.6	0.025
270	Swadeshi Cottage Industries (KHA:09)	ETP sludge	KANNUR	Schedule - I 24.1	4.513
271	Swapna Plywoods (No:57)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.995
272	Swaraj Saw Mills (No:18)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.98

273	Symega Savoury Technology Ltd.	Used Plastic bag	EKM	Schedule - II ClassC1	245.195
274	Synthite Industries Ltd	Production Waste	EKM	Schedule - I 36.6	609.015
275	Taj Ply and Boards	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.075
276	Tata Ceramics Ltd	Sludge	EKM		895.335
277	Technip KT I Ltd C/o B P C L Ambalamugal	Ceramic Fibre and Plastic waste	EKM	Schedule - II ClassC1	6.49
278	Tech-Sharp Engineering (P) Ltd	Insulation Waste	EKM		4.79
279	Tens Rubber Company Pvt Ltd (NO:15)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	4.487
280	The Alleppey Company Ltd	Coir mat waste	ALAPUZHA	Schedule - II ClassC1	315.025
281	The Mathrubhumi Printing & Publishing Co.Ltd	Printing Waste	EKM	Schedule - II Class C3	21.4
282	The Taj Coir Mills	Coir mat waste	ALAPUZHA	Schedule - II Class C1	49.66
283	Thermax Limited	Ceramic Fibre and Plastic waste	EKM		49.365
284	Thomson Ply and Boards(NO:153)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.948
285	Three Star Plywood (106)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	4.507
286	Tierra Food India Pvt Ltd	Packing cover	PATHANAMTHITTA	Schedule - II ClassC1	2.655
287	TMS Leathers	ETP sludge	EKM	Schedule - I 35.3	16.05
288	Travancore Veneers &Plywood (No:99)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.705
289	Travancore Cochin Chemicals Ltd	Brine Residue	EKM	Schedule - II Class C2	226.05
290	Travancore Cocotuft Pvt Ltd	Coir mat waste	ALAPUZHA	Schedule - II ClassC1	208.975
291	Travancore Mats&Matting Co.	ETP sludge	ALAPUZHA	Schedule - I 35.3	73.845

292	Travancore Titanium Products Ltd	Sulphur muck	TVM	Schedule - II Class C3	69.085
293	Tufko International	Coir mat waste	KOTTAYAM	Schedule - II Class C1	11.225
294	Turbo Veneers (No:19)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	11.765
295	Tuskar Veneers & Ply Boards	Glue and Boiler Ash	IDUKKI	Schedule - I 25.1, 25.2	3.2
296	U Star Plywoods	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.43
297	UMMANI VENEERS AND PLYWOODS (No:281)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.945
298	Unique Electro Colouring	Electrocolouring waste	PALAKKAD	Schedule - II Class A	1.175
299	United Breweries Limited	ETP sludge	PALAKKAD	Schedule - I 35.3	336.495
300	Universal Industries	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.985
301	V.M Veneers & Boards (No:274)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.955
302	Vajra Steels	Glass wool	EKM		4.095
303	Valeth Hightech Composites (P) Ltd	FRP waste	EKM		4.92
304	Vanchinadu Plywood Industries (No:45)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.945
305	Varkey's Industries	Tallow waste	EKM		217.74
306	Vasulal Textiles (KHA:5)	ETP sludge	KANNUR	Schedule - I 24.1	0.5
307	Veenus Ply and Boards (No:28)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.17
308	Victory Wood Industries (No:51)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	2.985
309	Vikram Sarabhai Space Centre (TVM)	Incineration Ash	TVM	Schedule - I 37.2	36.825
310	Vision Motors (P) Ltd (Calicut)	Hazardous Waste	KOZHIKODE	Schedule - II Class C1	5.12
311	W F B Baird & Company (India) PVT Ltd	Colour Waste Glass Wool	EKM		98.095

	W F B Baird & Company (India) PVT Ltd	ETP sludge	EKM	Schedule - I 35.3	7.395
312	Western Ply Boards (NO:39)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	1.485
313	Western Plywoods (NO:97)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.845
314	Win Ply & Boards (NO:218)	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.666
315	WIPRO Limited	Thermocol	EKM	Schedule - II ClassC1	2.355
	Wonderla Holidays Ltd	ETP sludge	EKM	Schedule - I 35.3	26.11
	Wonderla Holidays Ltd	FRP waste	EKM	Schedule - II ClassC1	6.5
316	Wonderla Holidays Ltd	Sludge	EKM	Schedule - I 35.3	6.385
	Wonderla Holidays Ltd	WTP sludge	EKM	Schedule - I 35.3	28.125
317	Yem Tee Veneers & Plywoods	Glue and Boiler Ash	EKM	Schedule - I 25.1, 25.2	0.965
318	Zaina Wood Products	Boiler Ash	KANNUR	Schedule - I 37.2	1.09
Grand Total					30291.22

ANNEXURE –IV

INVENTORY OF HAZARDOUS WASTE

GENERATING INDUSTRIES

IN

ERNAKULAM, IDUKKI, KOTTAYAM AND

THRISSUR DISTRICTS

ERNAKULAM

Sl. No	Name and Address	Products	HW generating process as per schedule e-1	HW generating stream as per schedule e-1	HW generating stream as per schedule -2	HW generating as per schedule e-1 in ton/year	HW generating as per schedule e-2	Total quantity of HW in ton/year	Disposal in ton/year landfills	Recyclable in ton/year	Incinerable in ton/year
1	Platino Classic Motors India Pvt. Ltd. (Koyenko Prestige Motors) NH 47, Bye Pass Road Maradu P O Kochi	Servicing of vehicles	5	5.1	0	3.7	0	3.7	0	3.7	0
2	Concorde motors india limited, Door No.1/41B, Near Agastya Ashramam Kureekkadu PO Kureekkadu Ernakulam	Servicing of vehicles	5	5.1	0	2.64	0	2.64	0	2.64	0
3	M/s V.O AUTOMOBILES, EDATHALA P.O, PUKKATTUPADY, ERNAKULAM	Servicing of vehicles	5	5.1	0	4.02	0	4.02	0	4.02	0
4	EMIRATES MOTORS, SEAPORT AIRPORT ROAD, CUSAT P.O, KALAMASSERY	Servicing of vehicles	5	5.1	0	0.85	0	0.85	0	0.85	0

5	PATEL CARS PRIVATE LTD (PENISULAR HONDA) NH- 47,VYTTILA AROOR BY PASS ROAD MARADU,KOCHI -682 304.	Servicing of vehicles	5	5.1	0	12.69	0	12.69	0	12.69	0	0
6	Geeyem Motors (P) Ltd, 11/336, NH 47 By-pass, Nettoor P.O., Ernakulam.	Servicing of vehicles	5	5.2	0	0.05	0	0.05	0	0.05	0	0
7	POPULAR HYUNDAI, 33/2361-A,GEETHANJALI JN.; BY PASS,VYTTILA	Servicing of vehicles	5	5.2	0	0.79	0	0.79	0	0.79	0	0
8	M/s. EVM Automotive India Pvt Ltd, Angels Plaza, XXIII/1&1A, NH -47 TVS Junction South Kalamassery Cochin-682022	Servicing of vehicles	5	5.1	0	3.17	0	3.17	0	3.17	0	0
9	MEGA MOTORS, MEGA CENTRE NH BYE PASS ROAD PULICHODE ALUVA	Servicing of vehicles	5	5.1	0	3.17	0	3.17	0	3.17	0	0
10	Jackson Auto Garage III/371- B, Parakkatu Temple Road Kakkanad	Servicing of vehicles	5	5.1	0	0.69	0	0.69	0	0.69	0	0

11	EXCELSIOR MOTORS PVT LTD, SYNO:228/5 VYTTILA, AROOR BYEPASS ROAD KUNDANNOOR, MARADU ERNAKULAM-682304	Servicing of vehicles	5	5.1	0	0.63	0	0.63	0	0.63	0
12	M SQUARED MOTORS PVT LTD, 37/724 ACEL TOWER, AMBADI LANE, S A ROAD, KADAVANTHARA, KOCHY	Servicing of vehicles	5	5.2	0	0.96	0	0.96	0	0.96	0
13	KUNNATH AUTO SERVICE STATION, ELANKUNNAPUZ HASREE VILAS ELANKUNNAPUZHA VYPIN ERNAKULAM	Servicing of vehicles	5	5.1	0	0.79	0	0.79	0	0.79	0
14	ELAVUNGAL AUTO SERVICE, SEMINARYPADY ROAD, U.C.COLLEGE P.O, ALUVA	Servicing of vehicles	5	5.1	0	1.06	0	1.06	0	1.06	0
15	K.P.CARS PVT. LTD AROOR BYPASS ROAD MARADU COCHIN	Servicing of vehicles	5	5.1	0	2.33	0	2.33	0	2.33	0

16	FOCUZ AUTOMOBILE SERVICES LTD, TATA MOTORS AUTHORISED SERVICE CENTRE DOOR NO.XXVII/D1 OPP.LULU MALL NEAR TRINITY APARTMENTS EDAPPILLY KOCHI	Servicing of vehicles	5	5.1	0	0.44	0	0.44	0	0.44	0	0
17	PSN AUTOMOBILES PVT LTD, 1/197,CHENGAL ,KANJOOR ROAD KALADY , ERNAKULAM	Servicing of vehicles	5	5.1	0	0.53	0	0.53	0	0.53	0	0
18	T. V SUNDARAM IYENGAR & SONS PVT. LTD, DOOR NO. 23/649 A2, ANGELS ARCADE, T.V.S JUNCTION, S. KALAMASSERY, COCHIN	Servicing of vehicles	5	5.1	0	1.76	0	1.76	0	1.76	0	0
19	M/s. EVM Motors & Vehicles (India) Pvt Ltd, 11/4C, Opp: BTH Sarovaram, NH Bypass Kannadikadu, Maradu, Kochi-682304	Servicing of vehicles	5	5.1	0	3.17	0	3.17	0	3.17	0	0
20	WHEEL AND WHEELS, 16/530 NEAR NIPPON TOYOTA NH 47 BYEPASS NETOOR	Servicing of vehicles	5	5.1	0	0.09	0	0.09	0	0.09	0	0

21	M/s T.V. SUNDARAM IYENGAR & SONS (P) LTD, D.NO.50/1897-1899, CHERANALLOOR ROAD, AIMS P.O, EDAPPALLY,	Servicing of vehicles	5	5.1	0	0.26	0	0.26	0	0.26	0
22	Mangalath Auto Service, Ochanthuruth P.O, Ernakulam	Servicing of vehicles	5	5.1	0	0.9	0	0.9	0	0.9	0
23	M/s.AUTOWASCHE, BLDG.NO.III/148 B & C, EDAPPALLY-PARAVOOR NH-17, CHERANALLOOR.P.O. KOCHI-682034	Servicing of vehicles	5	5.1	0	1.06	0	1.06	0	1.06	0
24	PSN AUTOMOBILES PVT.LTD, 2/330 CHERANELOOR KOCHI PIN - 682034	Servicing of vehicles	5	5.1	0	1.06	0	1.06	0	1.06	0
25	GREEN AUTOMOBILE AND ENGINEERING WORKSHOP, MANJAPARA,ALUVA TALUK,ERNAKULAM	Servicing of vehicles	5	5.1	0	1.06	0	1.06	0	1.06	0
26	PSN AUTOMOBILES PVT.LTD, SREE PARVATHY A&B 25/505 POOKATTUPADY ROAD UNICHIRA KOCHI-24	Servicing of vehicles	5	5.1	0	1.27	0	1.27	0	1.27	0

27	POPULAR MOTOR WORLD PVT LTD, POPULAR HYUNDAI REFINERY ROAD TRIPUNITHURA P O ERNAKULAM	Servicing of vehicles	5	5.1	0	1.59	0	1.59	0	1.59	0	0
28	VEETEEJAY MOTORS PVT. LTD, 1/575 K, KUNDANNOOR, MARADU P O, KOCHI	Servicing of vehicles	5	5.2	0	6.34	0	6.34	0	6.34	0	0
29	Concordemotors india limited, #10/256/C, opp.masjid,nettoor,kerala	Servicing of vehicles	5	5.2	0	2.64	0	2.64	0	2.64	0	0
30	SAI SERVICE PVT LTD, KETTEZHUTH ROAD NETTOOR MARADU	Servicing of vehicles	5	5.2	0	2.11	0	2.11	0	2.11	0	0
31	M/s.E V M CARS, I N T U C Junction Nettoor ,Ernakulam	Servicing of vehicles	5	5.2	0	0.53	0	0.53	0	0.53	0	0
32	M/S POPULAR MEGA MOTORS(INDIA) PVT LTD, KALADY- AIR PORT MATTOOR (P.O) KALADY	Servicing of vehicles	5	5.2	0	2.11	0	2.11	0	2.11	0	0
33	TOPLINE AUTOMOTIVE GARAGEMANIMALA ROAD,NEAR GANAPATHY TEMPLE,EDAPPALLY	Servicing of vehicles	5	5.1	0	0.95	0	0.95	0	0.95	0	0

34	M/s. MALIAKKAL AUTO SERVICES, VIII/24, CHERUMKAVALA, KIDANGOOR P. O., ANGAMALI	Servicing of vehicles	5	5.1	0	1.06	0	1.06	0	1.06	0	0
35	FOUR ONE GROUP SERVICES, NEAR OBRON MALL, N.H BY PASS ROAD, EDAPPALLY P.O,	Servicing of vehicles	5	5.1	0	1.06	0	1.06	0	1.06	0	0
36	AUTOMATIC CAR SPA, NEAR KSRTC GARAGE, IOC PUMP, THAIKKATUKARA P.O,ALUVA	Servicing of vehicles	5	5.1	0	2.64	0	2.64	0	2.64	0	0
37	SYS Services LLP, II/632C, Chettu Parambil, Udayamperoor PO nadakkavu, Thripunithara, Ernakulam	Servicing of vehicles	5	5.1	0	2.11	0	2.11	0	2.11	0	0
38	M/S.WHEEL & BODY,Ernakulam	Servicing of vehicles	5	5.1	0	5.29	0	5.29	0	5.29	0	0
39	POOMKUDY MOTORS PVT. LTD.POOMKUDY IND-ZONE MUNDAMPALAM THRIKKAKARA P.O, KOCHI	Servicing of vehicles	5	5.1	0	6.34	0	6.34	0	6.34	0	0

40	M/s. Autobahn Trucking Corporation Pvt. Ltd. NH47, Near Athani Junction, Nedumbasserry P.O., Kottayi, Aluva	Servicing of vehicles	5	5.1	0	1.27	0	1.27	0	1.27	0
41	EXPRESS AUTOMATIC CAR WASH, SAHODARAN AYAPPAN ROAD, NEAR KADAVANTHARA JUNCTION	Servicing of vehicles	5	5.1	0	2.11	0	2.11	0	2.11	0
42	NIPPON MOTOR CORPORATION PVT LTD, NETTOOR P O KOCHI - 682040	Servicing of vehicles	5	5.1	0	1.59	0	1.59	0	1.59	0
43	M/s Popular Vehicles & Services Ltd, Punnakkal, Elamakkara, Ernakulam	Servicing of vehicles	5	5.1	0	4.23	0	4.23	0	4.23	0
44	Focus Biwheelers, Showroom/ service centre, INTUCC Junction, Vyttila-aroor By-pass	Servicing of vehicles	5	5.1	0	0.05	0	0.05	0	0.05	0
45	M/s. Poomkudy Force, A division of Poomkudy Motors Pvt. Ltd., BMC P.O., Thrikkakara, Kochi, 682021	Servicing of vehicles	5	5.1	0	2.11	0	2.11	0	2.11	0

46	M/s Rajasree Motors Pvt. Ltd, 2/393 C, NH47, Near Kundanoor Junction, Bye pass, Maradu P.O, Ernakulam 682304	Servicing of vehicles	5	5.1	0	38.06	0	38.06	0	38.06	0
47	M/s Excelsior Motors (P) Ltd, Sy. No.228/5, Vyttila-Aroor Bye Pass road, Kundannoor, Maradu, Ernakulam-682 304	Servicing of vehicles	5	5.1	0	0.63	0	0.63	0	0.63	0
48	Sai Service Station Ltd. Pathadipalam, NH-47,Ernakulam 682024	Servicing of vehicles	5	5.1	0	3.17	0	3.17	0	3.17	0
49	M/s India Techs Ltd. Kottayi, Nedumbassery P.O., Ernakulam 683 585	Servicing of vehicles	5	5.1	0	0.26	0	0.26	0	0.26	0
50	Sai Service Station Ltd. 50/1115 L, NH 17, Cheranalloor Road, Edappally P.O, Kochi 682 024	Servicing of vehicles	5	5.1	0	2.11	0	2.11	0	2.11	0
51	M/s T V Sundaram Iyengar & Sons Ltd. D.No.50/1897-1899, Cheranalloor Road, AIMS P.O. Edappally, Kochi	Servicing of vehicles	5	5.1	0	10.57	0	10.57	0	10.57	0

52	M/s Carnatin Auto India Pvt. Ltd., 135/7, Near Mahindra Showroom, Kannadikadavu, Maradu P.O 682304	Servicing of vehicles	5	5.1	0	2.11	0	2.11	0	2.11	0	0
53	Sri. Babu Mooppan Chariman & MD M/s Geeyem Motors, Ernakulam	Servicing of vehicles	5	5.1	0	0.05	0	0.05	0	0.05	0	0
54	M/s Poomkudy Motors Pvt. Ltd., Poomkudy House, NH 47 Road, Edapally, Kochi 682024	Servicing of vehicles	5	5.1	0	6.34	0	6.34	0	6.34	0	0
55	M/s Carborandum Universal Ltd., Plot No.7, CSEZ, Kochi 37	Silicon Carbide Micro Grains	5	5.1	0	1.27	0	1.27	0	1.27	0	0
56	M/s Concorde Motors (India) Ltd. Plot No.1/41B, Kureekad P.O. Ernakulam	Servicing of vehicles	5	5.1	0	2.64	0	2.64	0	2.64	0	0
57	M/s Southern Surface Finishers, Erumelikkara, Kumarapuram P.O, Ernakulam 683 565	Powder Coated Aluminium Vessels	12	12.6	0	0.05	0	0.05	0	0.05	0	0

58	M/s Ultra Tech Cement Ltd. (unit: Cochin Bulk Terminal) Survey No.2578/4, Indira Gandhi Road, Willingdon Island, Kochi 682003	Cement	5	5.1	0	0.95	0	0.95	0	0.95	0	0
59	M/s Appolo Tyres Ltd, Kalamassery, Ernakulam	Automatic tyres	5	5.1	0	1.2	0	1.2	0	1.2	0	0
60	M/s BPCL, Irumpanam, Ernakulam	Storage of petroleum , Diesel,Kerosene, furnace oil	3	3.3	0	2	0	2	0	2	0	0
61	M/s CII Guardian International Ltd., Plot No.16, B1, CSEZ, Kakkanad, Ernakulam	Relays	5	5.1	0	5.1	0	22.5	5.1	15	2.4	0
			12	12.3,12.4		17.4						
62	M/s Cochin kagaz Ltd. Karukutty, Angamaly, Ernakulam	Kraft paper	5	5.1	0	0.75	0	0.75	0	0.75	0	0
63	M/s Cochin Port Trust, Kochi, Ernakulam	Maintenance of ship	5	5.1	0	10	0	10	0	10	0	0

64	M/s Cochin Shipyard Ltd. Post Box No.1653, Cochin, Ernakulam 682 015	Vessels, bulk carriers, tugs etc	5	5.1	0	1636	0	1636	1500	136	0
65	Common ETP, CSEZ, Kakkanad, Cochin-37	Common ETP	35	35.3	0	273	0	1030.3	1030.3	0	0
			37	37.1,37. 2		757.30					
66	Edathala Polymers Pvt. Ltd. North Edathala P.O. Aluva, Ernakulam 683564	Block rubber (IISNR)	5	5.1	0	7.3	0	7.3	0	7.3	0
67	M/s EVM Automobiles, 31/635A, Kachappilly Road, Vytilla, Ernakulam 682019	Servicing of vehicles	5	5.1	0	2.4	0	2.4	0	2.4	0
68	M/s FCI OEN connectors Ltd. Electrogiri, Mulanthuruthy, Ernakulam	Connector es	5	5.1	0	3	0	15	12	3	0
			35	35.3		12					
69	M/s Ganesh Benzoplast Pvt. Ltd, Willington, Ernakulam 29	storage of petroleum products	3	3.3	0	0.001	0	0.001	0	0.001	0

70	M/s GTN Textiles Ltd., Erumathala P.O, Aluva, Ernakulam 683112	yarn	5	5.1	0	2.4	0	2.4	0	2.4	0	0
71	H.H.A Tank Terminal Pvt. Ltd. CC24/1869, Muraf Area, Indhira gandhi Road, Willington island, Ernakulam	petroleum oil storage	3	3.3	0	0.001	0	0.001	0	0.001	0	0
72	M/s Hindustan Machine Tools Ltd. HMT Colony P.O, Ernakulam 683503	Machine tools, Printing Machine,C utting machine tool	5	5.1	0	270	0	272	2	270	0	0
			12	12.8		2						
73	M/s Indian Oil Corporation Ltd., Cochin Marketing terminal, Irumpanam, Ernakulam	petroleum products	3	3.3	0	1.6	0	1.6	0	1.6	0	0
74	Indian oil corporation Ltd., Karshaka Road, Ernakulam	petroleum products	3	3.3	0	2.58	0	2.58	0	2.58	0	0
75	Indian oil corporation Ltd., Willington Island, Ernakulam	petroleum products	3	3.3	0	2	0	2	0	2	0	0

76	M/s J & J Bio tech and speciality chemicals Pvt. Ltd., IDA, Erumathala, Aluva, Ernakulam	Flocculant, wate water treatment chemicals, biocides	35	35.3	0	0.001	0	0.001	0	0.001	0	0	0
77	M/s Kancor Ingredients Ltd., Post box no.3, Angamaly South, Ernakulam 678573	Oleroesins, spice emulsions and flavours- extracted spice waste,	5	5.1	0	5	0	8	0	3	5	0	0
			35	35.3		3							
78	M/s Kerala Agro Machinery Corporation Ltd. (KAMCO), Athani, Ernakulam 683585	KAMCO power tillers	5	5.1	0	0.8	0	1.9	0.3	0.8	0.8	0	0.8
			12	12.5		0.9							
			35	35.3		0.2							
79	M/s Marikar Motors Ltd. NH-47 Bye pass, 34/231, Edappally, Ernakulam	Servicing of vehicles	5	5.1	0	1.5	0	1.5	0	0	1.5	0	0
80	M/s Modern Food Industries, Edappally, Ernakulam 24	Bread, Bun, cakes	5	5.1	0	0.06	0	0.06	0	0	0.06	0	0
81	M/s Moopan Motors Pvt. Ltd, NH-47, Bye pass, Nettoor, Ernakulam	Servicing of vehicles	5	5.1	0	45	0	45	0	0	45	0	0

82	Muthoot APT, Ceramics Ltd, CSEZ, Kakkanad, Ernakulam	Vitreous china sanitary wares	5	5.1	0	43.8	0	43.8	0	43.8	0	43.8	0
83	M/s Nest power Electronics, Plot No.43A, CSEZ, Ernakulam	Printed circuit board assemblies	5	5.1	A5	0.05	0.6	1.123	0	1.111	0.012	0	0
			20	20.2		0.161							
			23	23.1		0.012							
			33	33.1		0.3							
84	M/s Nitta Gelatin India Ltd., KINFRA, Kakkanad, Ernakulam	Gelatin , Peptide	5	5.1	0	0.14	0	0.14	0	0.14	0	0.14	0
85	M/s OEN India Ltd., Electogiri, P.B No.1, Mulamthuruthy, Ernakulam	Relays , switches ,Potentiom eter, other electromec hanical items	5	5.1	A5	2	1	15.6	3	3	9.6	3	9.6
			35	35.3		3							
			31	31.2		9.6							
86	M/s Patel Cars Pvt. Ltd, Vyttila, Aroor Bypass road, Ernakulam	Servicing of vehicles	5	5.1	0	14.4	0	14.4	0	14.4	0	14.4	0
87	M/s Popular Hyundai, Popular Motors Corporation, Geethanjali Junction, Ernakulam -19	Servicing of vehicles	5	5.1	0	7.2	0	7.2	0	7.2	0	7.2	0

88	M/s Popular Vehicles & Services Ltd, Near Lissie Hospital, Opp. MRI Centre, Ernakulam 18	Servicing of vehicles	5	5.1	0	3	0	3	0	3	0	0
89	M/s Products Dairy ERCMPU Ltd. (MILMA), Edapally, PIN 682 024	Flavoured milk bottles, Peda and ice cream	5	5.1	0	0.015	0	0.015	0	0.015	0	0
90	Sun fibre Optics Pvt. Ltd. CSEZ, Unit II, Kakkanad, Ernakulam	PCB Assey, Electronic sub assay	5	5.1	0	0.02	0	0.085	0	0.085	0	0
			31	31.1		0.065		0.085				
91	Sun fibre Optics Pvt. Ltd. (SFO technologies Pvt. Ltd.) , CSEZ, Unit -I, Kakkanad, Ernakulam	Printed circuit board assemblies , Electronic sub assay-	5	5.1	A5	0.02	0.5	2.77	0	2.02	0	0.75
			20	20.2		1.5		2.02				
			33	33.3		0.75		0.75				
92	M/s Sun Generic Cables Pvt. Ltd., Plot No.17, CSEZ, Ernakulam	Cable assay for electronic equipments	5	5.1	0	0.012	0	0.033	0	0.033	0	0
			20	20.2		0.021		0.033				

93	M/s Tata Ceramics Ltd., CSEZ, Ernakulam	Fine China bone china crocery and tableware	5	5.1	0	0.3	0	0.3	0	0.3	0	0
94	M/s Traco cable Company Ltd, Irumpanam P.O, Thrippunithura, Ernakulam	ACSR, Control /weather proof cable	5	5.1	0	0.884	0	0.884	0	0.884	0	0
95	M/s Transformer and Electricals Kerala Ltd.(TELK), Angamali, Ernakulam	Power transforme r, Current transforme r,	5	5.1	0	18.9	0	18.9	0	18.9	0	0
96	M/s TVS Ltd. NH Kaloor, Ernakulam 682017	Servicing of vehicles	5	5.1	0	3.6	0	3.6	0	3.6	0	0
97	M/s TVS Suzuki, Service Station, Palarivattom, Janatha Junction,	Servicing of vehicles	5	5.1	0	0.36	0	0.36	0	0.36	0	0
98	M/s Tyco Electronics Tools Pvt. Ltd, Plot No.44 CSEZ, Kakkanad, Ernakulam	Tools spares dies & moulds	5	5.1	A5	0.2	0.1	0.33	0	0.33	0	0
			33	33.1		0.03						

99	A - One Plywoods & Boards (NO:131) VATTAKATTUPADY IRINGOLE P.O	Plywood	25	25.1, 25.-2	0	1.005	0	1.005	1.005	0	0
100	A One Boards & Panels (NO:159) VATTAKATTUPADY IRINGOLE P.O	Plywood	25	25.1, 25.-2	0	1.05	0	1.05	1.05	0	0
102	A P K Plywoods (NO:288) Rayonpuram P.O., Perumbavoor	Plywood	25	25.1, 25.-2	0	0.94	0	0.94	0.94	0	0
103	ABS Plywoods (No:259) Rayonpuram P.O., Perumbavoor	Plywood	25	25.1, 25.-2	0	1.255	0	1.255	1.255	0	0
104	Aiswarya Ply Products ALLAPRA P O PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	1.015	0	1.015	1.015	0	0
105	Aiswarya Plywood Industries (No:80) Kuruppampady Kunnathunadu	Plywood	25	25.1, 25.-2	0	1.11	0	1.11	1.11	0	0
106	Aksons Plywood (NO:289) EDAPANA OKKAL PO PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	1.02	0	1.02	1.02	0	0

107	Ambadan Timber Industries (No:265) RAYONPURAM PO PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	1.275	0	1.275	1.275	0	0
108	Arafa Plywood & Veneers (No:103) ALLAPRA P.O.,ORNA ,PERUMBAVOOR PIN- 683553	Plywood	25	25.1, 25.-2	0	0.96	0	0.96	0.96	0	0
109	Asian Boards & Veneers (No:42) Mudickal P.O., Perumbavoor	Plywood	25	25.1, 25.-2	0	0.87	0	0.87	0.87	0	0
110	Aswathy Timbers VAIKKARA P.O RAYAMANGALAM	Plywood	25	25.1, 25.-2	0	1.045	0	1.045	1.045	0	0
111	Bisiya Veneers and Plywoods EAST OKKAL OKKAL PO PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	1.198	0	1.198	1.198	0	0
112	Bismi Timbers & Plywood (No:100)MUDICKAL P.O PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	0.94	0	0.94	0.94	0	0
113	Bismi Timebr Industries (No:67) KANDANTHRA ,ALLAPARA PO	Plywood	25	25.1, 25.-2	0	1	0	1	1	0	0

114	Bombay Plywood Industries (No:220) PANIPRA P.O KOTHAMANGALAM	Plywood	25	25.1, 25.-2	0	1.07	0	1.07	1.07	0	0	0
115	Brothers Veneer (No:248) Orna, Allapra	Plywood	25	25.1, 25.-2	0	0.72	0	0.72	0.72	0	0	0
116	Century Plywood (No:257) RAYONPURAM PO kunnathunadu	Plywood	25	25.1, 25.-2	0	0.975	0	0.975	0.975	0	0	0
117	Chandrika Plywood (NO:37) KANDANTHARA ALLAPRA P.O	Plywood	25	25.1, 25.-2	0	4.074	0	4.074	4.074	0	0	0
118	Chandrika Saw Mills (No:38) KANDANTHARA ALLAPRA P.O	Plywood	25	25.1, 25.-2	0	3.04	0	3.04	3.04	0	0	0
119	Changanacheriyil Veneers (No:56) Thandekkadu Ponjassery	Plywood	25	25.1, 25.-2	0	0.965	0	0.965	0.965	0	0	0
120	Classic Wood and Veneers (No:24) MUNDAKKAPURAM WEST VENGOLA PO PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	0.78	0	0.78	0.78	0	0	0

121	Cochin Veneers (No:23) MUNDAKAPURAM WEST VENGOLA PO	Plywood	25	25.1, 25.-2	0	0.78	0	0.78	0	0	0
122	Crescent Ply Products Kuttippadam, Allapra P.O.	Plywood	25	25.1, 25.-2	0	0.995	0	0.995	0	0	0
123	Delta Plywoods(No:245) IRINGOLE P.O PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	0.905	0	0.905	0	0	0
124	Delta Wood Panels IRINGOLE P.O PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	1.19	0	1.19	0	0	0
125	Elavumkudy Veneers V.P. XIII/228 A, PONJASSERY P.O., PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	1.19	0	1.19	0	0	0
126	Enjakudy Industries (No:117) Dharshanipuram Valayanchirangara	Plywood	25	25.1, 25.-2	0	0.93	0	0.93	0	0	0
127	Epees Plywoods PEZHAKAPILLY PO MUVATTUPUZHA	Plywood	25	25.1, 25.-2	0	0.93	0	0.93	0	0	0

128	Everest Wood Industries(No:263) RAYONPURAM P.O PERUMBAVOOR- 683543	Plywood	25	25.1, 25.-2	0	3.04	0	3.04	3.04	0	0
129	Everest Plywoods (No:262) KANJIRAKKAD RAYONPURAM P.O PERUMBAVOOR- 683543	Plywood	25	25.1, 25.-2	0	3.06	0	3.06	3.06	0	0
130	Falcon Industries (No:196) KINFRA NELLAD	Plywood	25	25.1, 25.-2	0	1.26	0	1.26	1.26	0	0
131	Fiza Plywoods (NO:183) KEEZHILLAM PO PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	2.595	0	2.595	2.595	0	0
132	Gek Wood Pvt Ltd (No:193) NELLIMOLAM RAYAMANGLAM P.O PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	0.93	0	0.93	0.93	0	0
133	Global Veneers & Ply (No:222) PANIPRA P.O KOTHAMANGALAM	Plywood	25	25.1, 25.-2	0	0.695	0	0.695	0.695	0	0

134	Golden Wood Industries (NO:67) Allapra P.O., Perumbavoor	Plywood	25	25.1, 25.-2	0	2.625	0	2.625	2.625	0	0
135	Greenland Plywood (No:219) KUTTILUNJI ERAMALLOOR P.O KOTHAMANGALAM	Plywood	25	25.1, 25.-2	0	0.85	0	0.85	0.85	0	0
136	Greenland Particle Boards Pvt Ltd XIX/4A12,KARIYELI VALLOM ROAD ,VIA GOV. VETERINARY HOSPITAL,PERUMBA VOOR	Plywood	25	25.1, 25.-2	0	0.935	0	0.935	0.935	0	0
137	High Range Ply & Boards (No:217) PANIPRA P.O. KOTHAMANGALAM	Plywood	25	25.1, 25.-2	0	0.666	0	0.666	0.666	0	0
138	HI-Tech Plywoods (No:171) Valanchirangata P O KUNNATHUNADU	Plywood	25	25.1, 25.-2	0	0.975	0	0.975	0.975	0	0
139	I G M WOOD PRODUCTS (No:20) West vengola Ponjassery	Plywood	25	25.1, 25.-2	0	10.875	0	10.875	10.875	0	0

140	Ibsons Industries (No:123) Peringala P. O. kunnathunadu	Plywood	25	25.1, 25.-2	0	2.785	0	2.785	2.785	0	0
141	Ibsons Plywoods Peringala P O Kizhakkambalam	Plywood	25	25.1, 25.-2	0	3.13	0	3.13	3.13	0	0
142	Indiana Plywoods (No:302) Mudickal P O Perumbavoor	Plywood	25	25.1, 25.-2	0	1.25	0	1.25	1.25	0	0
143	Indus Ply and Boards MUDICKAL PO VENGOLA	Plywood	25	25.1, 25.-2	0	1.043	0	1.043	1.043	0	0
144	Intercon Wood Industries (No:299) Rayon puram P O Kanjiakkadu	Plywood	25	25.1, 25.-2	0	3.08	0	3.08	3.08	0	0
145	J B L Timber Industries (No:149) Pulluvazhy Perumbavoor	Plywood	25	25.1, 25.-2	0	1.09	0	1.09	1.09	0	0
146	J.J Plywood (No:253) OLD VALLAM ROAD RAYONPURAM PO PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	1.02	0	1.02	1.02	0	0
147	J.J Plywood Industries (No:116) P.P ROAD PATTIMATTOM 683565	Plywood	25	25.1, 25.-2	0	1.97	0	1.97	1.97	0	0

148	J.J Timber Industries (NO:311)MALAMURY PULLUVAZHAY P.O 683541	Plywood	25	25.1, 25.-2	0	0.98	0	0.98	0.98	0	0
149	Jalin Timbers (No:144) Ponjassery, Perumbavoor	Plywood	25	25.1, 25.-2	0	0.905	0	0.905	0.905	0	0
150	Jawan Ply Boards (No:41) Mudickal P O Perumbavoor	Plywood	25	25.1, 25.-2	0	0.99	0	0.99	0.99	0	0
151	Jismy Timber Products (No:167) MANAKKAPADY PKV ROAD VALAYANCHIRANGA RA POST	Plywood	25	25.1, 25.-2	0	1.16	0	1.16	1.16	0	0
152	Jubily Plywoods (No:112) Arakkappady Vengola	Plywood	25	25.1, 25.-2	0	1.095	0	1.095	1.095	0	0
153	Jumbo Plywood , NELLIMOLAM RAYAMANGALAM P.O 683545	Plywood	25	25.1, 25.-2	0	0.905	0	0.905	0.905	0	0
154	K K A Plywoods (No:260) ,Rayonpuram P.O., Perumbavoor	Plywood	25	25.1, 25.-2	0	1.13	0	1.13	1.13	0	0

155	Kabsons India Plywoods (102), Kuttippadam, Allapra P.O.	Plywood	25	25.1, 25.-2	0	0.96	0	0.96	0	0.96	0	0
156	Kaisons Plywood (No:293), Edavoor P O Koovappady	Plywood	25	25.1, 25.-2	0	0.895	0	0.895	0	0.895	0	0
157	Kalarickal Plywood (No:66), Kandanthara, Perumbavoor	Plywood	25	25.1, 25.-2	0	1.14	0	1.14	0	1.14	0	0
158	Kalyan Plywood (No:168), Valayanchiranga P O Perumbavoor	Plywood	25	25.1, 25.-2	0	1.05	0	1.05	0	1.05	0	0
159	Kalyan Plywood Industries (NO:77), Mepprathupadyalanchirangara	Plywood	25	25.1, 25.-2	0	0.955	0	0.955	0	0.955	0	0
160	Kanampuram Industries, vattakkattupady Perumbavoor	Plywood	25	25.1, 25.-2	0	1.043	0	1.043	0	1.043	0	0
161	Kanampuram Veneers (No:133), Iringole P O Vattakkattupady Perumbavoor	Plywood	25	25.1, 25.-2	0	1.265	0	1.265	0	1.265	0	0

162	Kemi Veneers (No:114) ,Chelakkulam Pattimattom	Plywood	25	25.1, 25.-2	0	2.7	0	2.7	0	2.7	0	0
163	Kerala Swamill & Plywoods (No:246) ,KEECHERIPADY MARKET P.O 686673	Plywood	25	25.1, 25.-2	0	0.905	0	0.905	0	0.905	0	0
164	Kings Plywoods,vaikkara Kunnathunadu	Plywood	25	25.1, 25.-2	0	1.197	0	1.197	0	1.197	0	0
165	Kokkadan Plywood(No:242) ,NEAR PARA PETTAMALA KURUPPAMPADY (VIA) PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	0.7	0	0.7	0	0.7	0	0
166	Kunnathan Chip Boards Pvt Ltd .ozhukkuppara Nirappu Muvattupuzha	Plywood	25	25.1, 25.-2	0	0.98	0	0.98	0	0.98	0	0
167	Kunnathan Industries,Rayon puram P.O, Perumbavoor	Plywood	25	25.1, 25.-2	0	0.99	0	0.99	0	0.99	0	0

168	Kunnathan Wood Product(No:229),Asamanoor P Oodakkaly	Plywood	25	25.1, 25.-2	0	1.95	0	1.95	1.95	0	0
169	Kuttikkattukudiyil Sawmill and Veneers (58),Thandakkadu perumbavoor	Plywood	25	25.1, 25.-2	0	2.585	0	2.585	2.585	0	0
170	Kuttiuzha Wood Products (Nos: 61),Kandanthara, Perumbavoor	Plywood	25	25.1, 25.-2	0	1.54	0	1.54	1.54	0	0
171	Kutty Ply (No:60),Kandanthara, Allapra , Perumbavoor	Plywood	25	25.1, 25.-2	0	1.37	0	1.37	1.37	0	0
172	M & S Enterprises (No:94),Kuttippada Allapra P O Perumbavoor	Plywood	25	25.1, 25.-2	0	0.735	0	0.735	0.735	0	0
173	M A B Veneers & Plywood (No:86),Kuttippada Allapra P O Perumbavoor	Plywood	25	25.1, 25.-2	0	0.96	0	0.96	0.96	0	0

174	M A M Plywood Industries (No:266) ,Kanjirakkad Rayonpuram Perumbavoor	Plywood	25	25.1, 25.-2	0	1.1	0	1.1	1.1	0	0
175	M.S Boards & Panels (NO:121) ,Paracode, Vembilly	Plywood	25	25.1, 25.-2	0	1.08	0	1.08	1.08	0	0
176	M.S Boards & Panels (NO:121) ,Paracode, Vembilly	Plywood	25	25.1, 25.-2	0	1.08	0	1.08	1.08	0	0
177	M.S Plywood (No: 120) ,Paracode, Vembilly	Plywood	25	25.1, 25.-2	0	1.19	0	1.19	1.19	0	0
178	M.Star Plywood (No:195) ,Methala P.O., Perumbavoor	Plywood	25	25.1, 25.-2	0	1.01	0	1.01	1.01	0	0
179	Makkaron Ply Boards (No:104) ,Allapra P.O., Perumbavoor	Plywood	25	25.1, 25.-2	0	1.345	0	1.345	1.345	0	0
180	Mampilly Plywood Industries (No:52) ,Mudickal P.O., Perumbavoor	Plywood	25	25.1, 25.-2	0	11.59	0	11.59	11.59	0	0
181	Marangattu Plywoods ,Mulavoor P O Muvattupuzha	Plywood	25	25.1, 25.-2	0	3.305	0	3.305	3.305	0	0

182	Mayur Plywood(No:140),Peechanamugal, Rayamangalam	Plywood	25	25.1, 25.-2	0	0.91	0	0.91	0	0.91	0	0
183	Modern Veneers (No:264),KEENPURAM SOUTH VAZHAKULAM	Plywood	25	25.1, 25.-2	0	3.355	0	3.355	0	3.355	0	0
184	Modern Veneers (No:14),Keenpuram south Vazhakulam	Plywood	25	25.1, 25.-2	0	1.125	0	1.125	0	1.125	0	0
185	Moothedam Veneer&Industries (No:59),Palikkavala Mudickal P O Perumbavoor	Plywood	25	25.1, 25.-2	0	3.97	0	3.97	0	3.97	0	0
186	Mother India Plywood (No:303),Mudickal P O Perumbavoor	Plywood	25	25.1, 25.-2	0	1.305	0	1.305	0	1.305	0	0
187	Mundackal Industries (No:78),Mudickal P.O Perumbavoor Kunnathunadu	Plywood	25	25.1, 25.-2	0	1.09	0	1.09	0	1.09	0	0
188	Naas Plywood Industries (No:73),Thottappadam Allapra	Plywood	25	25.1, 25.-2	0	4.445	0	4.445	0	4.445	0	0

189	National Ply & Boards (NO:31) ,CheruvelikunnuMaram pilly P OPerumbavoor	Plywood	25	25.1, 25.-2	0	1.205	0	1.205	1.205	0	0
190	NATIONAL PLY WOOD INDUSTRIES (No:163) ,Irapuram Valayanchirangara P O Perumbavoor	Plywood	25	25.1, 25.-2	0	1.37	0	1.37	1.37	0	0
191	Nest Wood Industries (No:93) ,Kuttippada Allapra P O Perumbavoor	Plywood	25	25.1, 25.-2	0	0.78	0	0.78	0.78	0	0
192	Nikson Ply & Veneers (NO:154) ,Pulluvazhy P O ,Perumbavoor	Plywood	25	25.1, 25.-2	0	0.948	0	0.948	0.948	0	0
193	Nova Plywoods (No:90) ,Allapra P O Kuttipadam Perumbavoor	Plywood	25	25.1, 25.-2	0	0.85	0	0.85	0.85	0	0
194	P.A Boards (No:54) ,NEAR SUB STATION MUDICKAL P.O PERUMBAAVOOR	Plywood	25	25.1, 25.-2	0	0.99	0	0.99	0.99	0	0
195	P.K Trading Company (No:186) ,Keezhillam P O ,Perumbavoor	Plywood	25	25.1, 25.-2	0	1.535	0	1.535	1.535	0	0

196	Plycon Lamination (No:96),kuttippada Allapra P O Perumbavoor	Plywood	25	25.1, 25.-2	0	0.985	0	0.985	0	0.985	0	0
197	Premier Timber Suppliers (No:48) .MUDICKAL P.O. PERUMBAVOOR - 683547	Plywood	25	25.1, 25.-2	0	1.69	0	1.69	0	1.69	0	0
198	Premier Veneers (NO:29),PERUMANI VENGOLA P.O 683554	Plywood	25	25.1, 25.-2	0	0.635	0	0.635	0	0.635	0	0
199	Punchiri Plywoods ,Allapra P OPerumbavoor	Plywood	25	25.1, 25.-2	0	0.8	0	0.8	0	0.8	0	0
200	Puthukkattu Wood Products .NELLIMOLAM RAYAMANGALAM P.O 683545	Plywood	25	25.1, 25.-2	0	0.76	0	0.76	0	0.76	0	0
201	Ramla Match Works (No:124) ,Vattakattupady, Perumbavoor	Plywood	25	25.1, 25.-2	0	1.63	0	1.63	0	1.63	0	0
202	Ras Plywood and Boards (No:313) .RAYAMANGALAM PULLUVAZHY P.O 683541	Plywood	25	25.1, 25.-2	0	1.65	0	1.65	0	1.65	0	0

203	Rasiya Timber Industries (No:44) ,Mudickal P.O Kunnathunadu	Plywood	25	25.1, 25.-2	0	0.985	0	0.985	0	0.985	0	0
204	Razlin Veneers and Plywoods (110) ,ARAKAPADI PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	1.005	0	1.005	0	1.005	0	0
205	Real Wood Industries (No:240),ASAMANNO OR P.O 683549	Plywood	25	25.1, 25.-2	0	1.03	0	1.03	0	1.03	0	0
206	Rolex Ply and Boards (NO:238) ,MARAMPILLY P.OL 683107	Plywood	25	25.1, 25.-2	0	0.8	0	0.8	0	0.8	0	0
207	Royal Wood Industries (25) ,WEST VENGOLA P.O	Plywood	25	25.1, 25.-2	0	3.815	0	3.815	0	3.815	0	0
208	Salah Plywood (No:65) ,ALLAPRA PO KURUPPATHARA	Plywood	25	25.1, 25.-2	0	0.88	0	0.88	0	0.88	0	0
209	Samson Ply Boards (No:152) ,Pulluvazhy P.O, Perumbavoor	Plywood	25	25.1, 25.-2	0	0.965	0	0.965	0	0.965	0	0
210	Santro Wood Product (NO:226) ,ASAMANNOOOR PO ODAKKALY	Plywood	25	25.1, 25.-2	0	1.95	0	1.95	0	1.95	0	0

211	Sea Wood Ply and Boards (No:286), EAST OKKAL OKKAL	Plywood	25	25.1, 25.-2	0	0.93	0	0.93	0	0.93	0	0
212	Simons Plywoods (No:181), PULLUVAZHY P.O PERUMBAVOOR KUNNATHUNADU	Plywood	25	25.1, 25.-2	0	1.08	0	1.08	0	1.08	0	0
213	Southern Plywoods (NO:40), IV 348 A, MUDICKAL P.O., PERUMBAVOOR-683 547.	Plywood	25	25.1, 25.-2	0	1.275	0	1.275	0	1.275	0	0
214	Swaraj Saw Mills (No:18), Chembarathukunnu, Ponjassery P. O., Vengola.	Plywood	25	25.1, 25.-2	0	0.98	0	0.98	0	0.98	0	0
215	Taj Ply and Boards ,METHALA P.O ASAMANNOR	Plywood	25	25.1, 25.-2	0	1.075	0	1.075	0	1.075	0	0
216	Tens Rubber Company Pvt Ltd (NO:15), Keenpuram, South Vazhakulam	Plywood	25	25.1, 25.-2	0	4.487	0	4.487	0	4.487	0	0

217	Thomson Ply and Boards (NO:153), PULLUVAZHY P.O PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	0.948	0	0.948	0.948	0	0
218	Three Star Plywood (106), PATHIAPPALM JUNCTION ALLAPRA	Plywood	25	25.1, 25.-2	0	4.507	0	4.507	4.507	0	0
219	Travancore Veneers & Plywood (No:99), ALLAPARA P O PERUMBAVOR	Plywood	25	25.1, 25.-2	0	1.705	0	1.705	1.705	0	0
220	Turbo Veneers (No:19), WEST VENGOLA P.O 683556	Plywood	25	25.1, 25.-2	0	11.765	0	11.765	11.765	0	0
221	U Star Plywoods , PANIPRA P.O. KOTHAMANGALAM	Plywood	25	25.1, 25.-2	0	0.43	0	0.43	0.43	0	0
222	UMMANI VENEERS AND PLYWOODS (No:281), E.OKKAL OKKAL PO PERUMBAVOOR	Plywood	25	25.1, 25.-2	0	0.945	0	0.945	0.945	0	0
223	Universal Industries , KUNNIKURUDY AIRAPURAM P.O 683541	Plywood	25	25.1, 25.-2	0	0.985	0	0.985	0.985	0	0

224	V.M Veneers & Boards (No:274) ,KOOVAPPADY P.O PERUMBAAVOOR	Plywood	25	25.1, 25.-2	0	0.955	0	0.955	0	0.955	0	0
225	Vanchinadu Plywood Industries (No:45) ,MUDICKAL P.O Kunnathunadu	Plywood	25	25.1, 25.-2	0	0.945	0	0.945	0	0.945	0	0
226	Veenus Ply and Boards (No:28),MALAMURY PULLUVAZHY P.O 683541	Plywood	25	25.1, 25.-2	0	1.17	0	1.17	0	1.17	0	0
227	Victory Wood Industries (No:51) ,MUDICKAL MUDICKAL P.O - 683547 PERUMBAAVOOR	Plywood	25	25.1, 25.-2	0	2.985	0	2.985	0	2.985	0	0
228	Western Ply Boards (NO:39),MUDICKAL Kunnathunadu	Plywood	25	25.1, 25.-2	0	1.485	0	1.485	0	1.485	0	0
229	Western Plywoods (NO:97),MUDICKAL Kunnathunadu	Plywood	25	25.1, 25.-2	0	0.845	0	0.845	0	0.845	0	0

230	Yem Tee Veneers & Plywoods, WEST VENGOLA P.O PERUMBAVOOR 683553	Plywood	25	25.1, 25.2	0	0.965	0	0.965	0.965	0	0
231	Agappe Diagnostics Ltd., AGAPPE HILLS PATTIMATTOM P.O KUNNATHUNADU	DIAGNOS TICS REGENT	33	33.1	C1	2.755	39.07	2.755	41.825	0	0
232	Akay Flavours & Aromatics Akanadu, Mudakkuzha. P.O, Perumbavoor, Ernakulam	Curcuminol eoresin, Pepper oleoresin, nutmeg	35	35.3	0	19.755	0	19.755	19.755	0	0
233	Anna Aluminium Company Pvt. Ltd. ,KIZHAKKAMBALAM, ALUVA, ERNAKULAM, PIN-683562	Aluminium utensils	11	11.5	0	284.44	0	284.44	284.44	0	0
234	AVT Natural Products Ltd, SOUTH VAZHAKKULAM, MARAMPILLY, ALUVA	Instant black tea, green tea, caffeine powder	35	35.3	0	566.03	0	566.03	566.03	0	0

235	Bharath Petroleum Corporation Ltd. ,AMBALAMUGAL, PB NO 2, ERNAKULAM	Petroleum Products	4	4.1	0	322.56	0	322.56	322.56	0	0
236	Chikoos Colour Coats,PAZHAMTHOTTAM P.O ERNAKULAM - 683565	Powder coated aluminium vessels , panel board , spare parts	0	0	A	0	4.135	4.135	4.135	0	0
237	Colour India Paints & Inks Pvt Ltd , Industrial Development Area Keenpuram South Vazhakulam.P.O, Aluva 683106	PAINTS&PRIMERS	21	21.1	0	5.7	0	5.7	5.7	0	0
238	Deepak Rubber & Coir Products,MULAKULAM NORTH P.O PIRAVAM	RUBBER DORMET	0	0	C1	0	1.875	1.875	1.875	0	0
239	Delphi Connection Systems India Ltd,XII/101 THIRUVANIYOOR VETTICKAL ROAD THIRUVANIYOOR POST ,ALUVA	Automotive Connectors Cable, HarnessTools ,moulds and their parts	0	0	C1	0	3.2	3.2	3.2	0	0

240	F.A.C.T., Ambalamedu, FACT CD CAMPUS AMBALAMUGAL	Gypsum wall panel, wall putty , wall plaster	18	18.1	0	10.3	0	10.3	10.3	0	0
241	Falcon Industries (No:196) ,Kinfra ,Nellad	Glue and Boiler Ash	25	25.1, 25.2	0	1.3	0	1.3	1.3	0	0
242	Gama Colour Coats ,KAITHAKKADU PATTIMATTOM P.O - 683562 KUNNATHUNADU	Powder coated spare parts, thermal cooker	0	0	A1 , A7,	0	17.17	17.17	17.17	0	0
243	GEEYEM MOTORS (P) LTD,OPP.MAKAR PLAZA EEC MARKET ROAD MUVATTUPUZHA	Servicing of cars	0	0	C1	0	48.89	48.89	48.89	0	0

244	Herbal Isolates (P) Ltd .SYNTHITE TASTE PARK, PANCODE P.O., VADAVUCODE,	Green pepper in Brine Mustard Oil DGP Hydrolyzed Vegetable Protein	35	35.3	0	25.195	0	25.195	25.195	0	0
245	HLL Lifecare Limited,Rubber Park,Plot No.1&2,Irapuram,Valay anchirangara P.O, 683556	Male Contracept ive Condoms	0	0	C1	0	1.36	1.36	1.36	0	0
246	KANCOR INGREDIENTS LTD,EDAPPANA ROAD, OKKAL P O,KALADY	SPENT SPICES	35	35.3	0	16.32	0	16.32	16.32	0	0
247	Kitex Garments Ltd. , KIZHAKKAMBALAM, ALUVA	Ready made garments	35	35.3	0	1819.5 4	0	1819.54	1819.54	0	0
248	Phillips Carbon Black Ltd ,BRAHMAPURAM P.O. KARIMUGAL	Carbon black captive power plant	35	35.3	0	8.23	0	8.23	8.23	0	0

249	Plant Lipids Pvt. Ltd., KADAYIRUPPU P.O., KOLENCHERY: 682 311	Ash & ETP Sludge	35	35.3	0	553.87 5	0	553.875	553.875	0	0
250	Polyformalin Ltd., Chemmanad, Varikkoli P.O., Puthencruz Ernakulam	Formaldeh yde	25	25.1, 25.2	0	8.425	0	8.425	8.425	0	0
251	Prodair Air Products India Pvt Ltd,BPCL Kochi Refinery Ambalamedu P.O. Ernakulam, Kerala	Power Hydrogen gas Nitrogen Oxygen	0	0	C1	0	223.29	223.29	223.29	0	0
252	Rubber Park India Private Ltd.,2 A, KAUTILEEYAM, Valayanchirangara P O	ETP Sludge	35	35.3	0	317.74	0	317.74	317.74	0	0
253	Southern Surface Finishers,ERUMELY KUMARAPURAM P O	Aluminium Fabricated Structure	12	12.6	0	0.175	0	0.175	0.175	0	0
254	Synthite Industries Ltd ,Synthite Taste Park, Spice Division Pancode P.O., Vadavucode (via)	Chilly, Ginger, turmeric & Pepper Powder	35	35.3	0	609.01 5	0	609.015	609.015	0	0

255	Win Ply & Boards (NO:218) PANIPRA P.O.Kothamangalam	Plywood	25	25.1, 25.2	0	0.666	0	0.666	0.666	0	0	0
256	Wonderla Holidays Ltd KUMARAPURAM PO PALLIKKARA KOCHI	Water Theme Park	35	35.3	0	67.12	0	67.12	67.12	0	0	0
257	INDIAN RARE EARTHS LIMITED UDYOGAMANDAL	Nuclear Grade Ammonium Di Uranate 32 tons	5	5.1	0	0.9	0	0.9	0	0	0.9	0.9
258	CEE JEE LUBRICANTS, IDA Edayar, Aluva	1551.92MT & 940.304MT	4	4.1	0	109.43	0	109.43	0	51.43	58	58
259	POWER CONTROLS E.I.D.A., EDAYAR, MUPPATHADAM.P.O.	Battery Plates- 49550 Nos.	9	9.1	0	0.8	0	0.8	0	0.8	0	0
260	HINDUSTAN INSECTICIDES Ltd UDYOGAMANDAL, COCHIN	DDT, Dicofol, Mancozeb	35	35.3	0	212.075	0	212.075	181.175	0	30.9	30.9
261	SUD CHEMIE INDIA PRIVATE LIMITED, Binanipuram P.O.	Asbestose Sheet Catalyst Waste V2O Wood ash	15	15.2	C1	5.77	105.52	480.76	480.76	0	0	0
			4	4.2		242.36						
			37	37.2		127.11						

262	COCHIN MINERALS AND RUTILE LTD. Industrial Development Area, Edayar, Muppathadam P.O., Alwaye - 683 110.	Synthetic Rutile	5	5.1	0	0.608	0	0.608	0.608	0	0	0
263	INDO GERMAN CARBONS LIMITED, Old Mosque Road Edayar, Binanipuram	15-16=300 ltr, 16-17=335 ltr & 17-18=65ltr	5	5.1	0	0.5	0	0.5	0.5	0	0	0
264	Hindalco Industries Ltd., Alupuram Works, PB No. 21, Kalamassery – 683104.	Aluminium extruded sections	5	5.1	0	3.63	0	277.655	274.025	0	3.63	0
			12	12.2		107.025						
			11	11.1		167.025						
265	Kemogravures VI/598C, IDA, Edayar Binanipuram-683502 mob.9946227640	10kg/year	35	35.3	0	0.001	0	0.001	0.001	0	0	0
266	Travancore-Cochin Chemicals Limited, P.B No.4, Udyogamandal P.O, Eloor	Caustic soda,Hydrochloric acid,Liquid chlorine	16	16.3	0	437.915	0	437.915	0	0	437.915	0

267	FACT Ltd., Udyogamandal Complex - Petrochemical Division, Udyogamandal	Caprolactam	5	5.1	0	0.657	0	0.657	0	0	0.657
268	The Fertilizers And Chemicals Travancore Limited Udyogamandal Complex - Fertilizer Plants, Udyogamandal - 683 501	Ammonium Phosphate Sulphate ,Ammonium Sulphate ,Sulphuric acid , Ammonia	17	17.2	0	28.1	0	1021.928	1018.228	0	3.7
			18	18.1		518					
			35	35.3		472.128					
			5	5.1		3.7					
269	Arjuna Natural Extracts Ltd., Industrial Development Area,Edayar,	HERBAL & Spice Extracts.	37	37.2	C1	177.355	0.7	178.055	178.055	0	0
270	A P M Terminal India (P) Ltd., Ernakulam	Split Cassia	0	0	C1	0	14.69	14.69	14.69	0	0
271	AIMS(Amritha), Edappally,Ernakulam	Incineration Ash	37	37.2	0	31.51	0	31.51	31.51	0	0
272	Ajmal Industries, Perumbavoor	Glue and Boiler Ash	25	25.1,25.2	0	1.02	0	1.02	1.02	0	0

273	Amcos XL Paints (India) Pvt. Ltd., Edayar	Fillers and residue	21	21.1	0	6.57	0	6.57	6.57	0	0
274	Ashique Timber (No:142), Perumbavoor	Glue and Boiler Ash	25	25.1,25 .2	0	1.07	0	1.07	1.07	0	0
275	AVT McCORMICK INGREDIENTS PVT.LTD., Aluva	ETP sludge	35	35.3	0	249.26 5	0	249.265	249.265	0	0
276	Beacon Power Systems, Perumbavoor	ETP sludge	35	35.3	0	1.825	0	1.825	1.825	0	0
277	Binu's Car Boutique,Ernakulam	Rexine Waste	0	0	C1	0	3.335	3.335	3.335	0	0
278	BSES Kerala Power Ltd., Edayar	Plastic waste, Asbestose	0	0	C1	0	3.485	3.485	3.485	0	0
279	Classic Concepts Home India Pvt. Ltd., Edayar	ETP sludge	35	35.3	0	0.05	0	0.05	0.05	0	0
280	Cochin International Airport,Ernakulam	Discarded items	0	0	C1	0	0.11	0.11	0.11	0	0

281	D K V Enterprises (P) Ltd,Ernakulam	Catalyst Waste	4	4.2	0	388.45	0	388.45	388.45	0	0
282	Decan Plywood (No:244), Perumbavoor	Glue and Boiler Ash	25	25.1,25.2	0	0.905	0	0.905	0.905	0	0
283	Dynamic Techno Medical Pvt. Ltd., Edayar	General Waste	0	0	C1	0	41.42	41.42	41.42	0	0
284	Elite Foods (P) Ltd,Ernakulam	Plastic waste	0	0	C1	2.11	0	2.11	2.11	0	0
285	Galilea Chemicals, Edayar	Packing Paper, Cotton Waste	0	0	C1	0	1.95	1.95	1.95	0	0
286	Greenfield Chemicals Footwears, Edayar	ETP sludge	35	35.3	0	17.32	0	17.32	17.32	0	0
287	Greenland Plywood (No:292), Perumbavoor	Glue and Boiler Ash	25	25.1,25.2	0	0.9	0	0.9	0.9	0	0
288	Hi Build Coatings Pvt. Ltd.,Ernakulam	Fillers and residue	21	21.1	0	79.7	0	79.7	79.7	0	0

289	Hindustan Petroleum Corporation Ltd,Ernakulam	Oil Contaminated soil, Paint sludge	4	4.5	0	82.44	0	83.90	83.90	0	0
			21	21.1		1.46					
290	Hindusthan Plywood (No:43), Perumbavoor	Glue and Boiler Ash	25	25.1,25.2	0	0.945	0	0.945	0.945	0	0
291	IGA Tech Electronics Pvt. Ltd., Ernakulam	Thermocol	0	0	C1	0	0.1	0.1	0.1	0	0
292	Inter Decor Industries Ltd., Edayar	Used Plastic Waste, Powder coating waste	0	0	C1	0	4.005	14.67	14.67	0	0
							10.665				
293	Kannagayathu Metals, Perumbavoor	ETP sludge	35	35.3	0	23.19	0	23.19	23.19	0	0
294	Kera Fibre Tex International Pvt. Ltd,Ernakulam	Coir mat waste	0	0	C1	0	491.985	491.985	491.985	0	0
295	KIMS Hospital,Edappally,Ernakulam	Plastic Waste	0	0	C1	0	10.49	10.49	10.49	0	0

296	Lakeshore Hospital & Research Centre Ltd,Ernakulam	Lead Apron	0	0	A5	0	0.105	0.105	0.105	0	0
297	Leighton Welpsun Contractors (P) Ltd,Ernakulam	Oil filters	0	0	C1	0	0.29	0.29	0.29	0	0
298	Microtrol Sterilisation Services (P)Ltd, Edayar	Process waste	0	0	C3	0	14.495	14.495	14.495	0	0
299	Middle East Rubber & Engineering, Edayar	Used Plastic waste, General Waste	0	0	C1	0	5.055	5.055	5.055	0	0
300	Njavallil Latex (P) Ltd.,Ernakulam	ETP sludge	35	35.3	0	4.16	0	4.16	4.16	0	0
301	Offshore Infrastructure Limited,Ernakulam	Industrial Waste, Shoe,plastic,Cloth	0	0	C1	0	4.995	4.995	4.995	0	0
302	P.K Wood Industries (No:177), Perumbavoor	Glue and Boiler Ash	25	25.1,25.2	0	0.125	0	0.125	0.125	0	0

303	P.K.A Plywood (NO:126), Perumbavoor	Glue and Boiler Ash	25	25.1,25 .2	0	0	1.02	1.02	1.02	0	0	0
304	Pallipuram Electro Plating Industries,Ernakulam	Sludge	0	0	A	0	4.635	4.635	4.635	0	0	0
305	Perfetti Van Melle India Pvt. Ltd., Ernakulam	Expired Food Products	0	0	C1	0	12.465	12.465	12.465	0	0	0
306	Petronet LNG Limited ,Ernakulam	Solid waste	0	0	C1	0	7.065	7.065	7.065	0	0	0
307	Phillips Carbon Black Ltd, Perumbavoor	ETP sludge	35	35.3	0	8.23	0	8.23	8.23	0	0	0
308	Ramanand Electro Coats, Edayar	Phosphate waste	0	0	A71	0	0.49	0.49	0.49	0	0	0
309	S.B Plywoods (No:290), Perumbavoor	Glue and Boiler Ash	25	25.1,25 .2	0	1.68	0	1.68	1.68	0	0	0
310	S.M. Ply, Muvattupuzha	Glue and Boiler Ash	25	25.1,25 .2	0	0.73	0	0.73	0.73	0	0	0

311	Sajitha Wood Industries (No:125), Perumbavoor	Glue and Boiler Ash	25	25.1,25 .2	0	1.14	0	1.14	1.14	0	0
312	Sathyam Ply Boards (No:221), Perumbavoor	Glue and Boiler Ash	25	25.1,25 .2	0	0.72	0	0.72	0.72	0	0
313	Seven Star Plywoods and Block Boards(NO:228), Perumbavoor	Glue and Boiler Ash	25	25.1,25 .2	0	1.95	0	1.95	1.95	0	0
314	Sharp Plywood (No:202), Perumbavoor	Glue and Boiler Ash	25	25.1,25 .2	0	0.96	0	0.96	0.96	0	0
315	Shifa Plywoods (162), Perumbavoor	Glue and Boiler Ash	25	25.1,25 .2	0	4.486	0	4.486	4.486	0	0
316	Skyblue Plywoods (No:11), Perumbavoor	Glue and Boiler Ash	25	25.1,25 .2	0	1.06	0	1.06	1.06	0	0
317	Sonia Industries (NO:187), Perumbavoor	Glue and Boiler Ash	25	25.1,25 .2	0	1.685	0	1.685	1.685	0	0
318	Sree Sastha Plywoods (No:7), Ernakulam	Glue and Boiler Ash	25	25.1,25 .2	0	5.275	0	5.275	5.275	0	0
319	Swapna Plywoods (No:57), Perumbavoor	Glue and Boiler Ash	25	25.1,25 .2	0	0.995	0	0.995	0.995	0	0

320	Symega Savoury Technology Ltd., Ernakulam	Used Plastic bag	0	0	C1	0	245.195	245.195	0	0
321	Technip KT I Ltd C/o B P C L Ambalamugal,	Ceramic Fibre and Plastic waste	0	0	C1	0	6.49	6.49	0	0
322	The Mathrubhumi Printing & Publishing Co.Ltd, Ernakulam	Printing Waste	0	0	C3	0	21.4	21.4	0	0
323	Thermax Limited, Ernakulam	Ceramic Fibre & Plastic waste	0	0	C1	0	49.365	49.365	0	0
324	TMS Leathers, Edayar	ETP sludge	35	35.3	0	16.05	16.05	16.05	0	0
325	W F B Baird & Company (India) PVT Ltd, Ernakulam	ETP sludge	35	35.3	0	7.395	7.395	7.395	0	0
326	WIPRO Limited, Ernakulam	Thermocol	0	0	C1	2.355	2.355	2.355	0	0
327	Zaina Wood Products, Ernakulam	Boiler Ash	21	21.1	0	1.09	1.09	1.09	0	0
328	Neogen Food & Animal Security, Tripunthra	Expired materials	0	0	C1	0	0.045	0.045	0	0
TOTAL							12840.144	11467.41	1265.03	107.71

THRISSUR

Sl. No	Name and Address	Products	HW generating process as per schedule-1	HW generating stream as per schedule-1	HW generating stream as per schedule-2	HW generation in as per schedule-1 T/y	HW generation in as per schedule-2 T/y	Total quantity of HW in T/y	Disposal in landfills T/y	Recyclable T/y	Incinerable T/y
1	Apollo Tyres, Perambra, Chalakudy	Automobile Tyres - 330 MT/day	35 5	35.1 5.2,5.1	C2	2.140 0.8	1.635	9.14	2.94	6.2	0
2	Archana Motors, XIII/1 (54), (60) Vazhappilly Arcade Near Lulu Convention Centre Puzhakkal, Ayyanthole P.O Thrissur	Servicing of vehicles	5	5.1	0	0.37	0	0.37	0	0.37	0
3	Archana Motors private limited, Near Toll Plaza Paliyekara, Chittisseri P O Thrissur	Servicing of vehicles	5	5.1	0	4.41	0	4.41	0	4.41	0

4	Archana motors private limited, upper ground floor. VI/215-15, grace park building, Koorkkencherry.p.o., Thrissur	Servicing of vehicles	5	5.1	0	0.93	0	0.93	0	0.93	0	0
5	Award Bright Electroplating Industries Door No VI/490 , Muthuvara, Puzhakkal P.O , Thrissur	electroplating works	35	35.3	0	2.5	0	2.5	2.5	0	0	0
6	Bee Pee Gold Imitations, Major Industrial Estate, Ollur, Thrissur-680306	gold plated ornaments 25kg/day	35	35.3	0	0.7	0	0.7	0.7	0	0	0
7	Bright & Company, Major Industrial Estate, Ollur, Thrissur – 680 306	aluminium electro colouring works 350 kcal	35	35.3	0	0.65	0	0.65	0.65	0	0	0
8	Bright Preacurum Survey no.2 1 E	aluminium electro colouring works 500 kg	35	35.3	0	0.65	0	0.65	0.65	0	0	0

9	Carborandum Universal Ltd. Post Bag No.3, Koratty , Thrissur - 680308	Silicon carbide micro & macro grit 250tonnes/month	5	5.1	0	2.2	0	2.2	0	2.2	0
10	Chakosons Chemicals (p) Ltd Mulakunnathukavu P.O Thrissur-680 581	Chemicals	35	35.3	0	24	0	24	0	24	0
11	Cheerans Auto Agencies Near State Warehousing Corporation Main Road, Kuriachira Thrissur - 680 006	Servicing of vehicles	5	5.1	0	0.26	0	0.26	0	0.26	0
12	Dot Engineering, Major Industrial Estate, Ollur, Thrissur-680306.	Electrocolo uring Job work	35	35.3	0	0.5	0	0.5	0.5	0	0
13	Friends Autogarage , Potta , Chalakudy	Servicing of vehicles	5	5.1	0	2.04	0	2.04	0	2.04	0
14	Geeyem Motors Pvt.Ltd Puzhakkal Thrissur	Servicing of vehicles	5	5.1	0	9	0	9	0	9	0

15	Golden View Plating, Major Industrial Estate, Ollur, Thrissur-680306	gold ornaments 2400numbe rs/ day	35	35.3	0	1.4	0	1.4	1.4	0	0	0
16	HIL Limited , MBP (Formerly Hyderabad Industries)M.G.Kavu Thrissur - 680581	Asbestos Cement Sheets	5	5.1	0	15.86	0	15.86	0	15.86	0	0
17	Honest Electroplating Unit, Industrial Estate Ollur, Thrissur - 680306	Electrocolo uring Job work	35	35.3	0	0.5	0	0.5	0.5	0	0	0
18	Indu Ornaments, Major Industrial Estate, Ollur, Thrissur-680306	gold plated ornaments 25kg/day	35	35.3	0	0.5	0	0.5	0.5	0	0	0
19	Indraprastha Motors Building No.IC-391/1/2 Gosaikunnu Ernakulam Road Thrissur - 6	Servicing of vehicles	5	5.1	0	2.38	0	2.38	0	2.38	0	0
20	International Auto Garage Chittanjoo Kunnamkulam Thrissur - 680 523	Servicing of vehicles	5	5.1	0	0.11	0	0.11	0	0.11	0	0

21	John's Biwheelers, John's Arcade, Guruvayur Road, Thrissur - 3	Servicing of vehicles	5	5.1	0	0.04	0	0.04	0	0.04	0	0
22	Kalyan Mobikes(P)Ltd. MG Road Thrissur	Servicing of vehicles	5	5.1	0	3.17	0	3.17	0	3.17	0	0
23	K.J.Lubes Athani Industrial Park SIDCO, Athani, Thrissur	Refined used oil	5	5.1	0	1268.6 4	0	1268.64	0	1268.64	0	0
24	KSE Ltd, Dairy Division, Konikkara, Marathakkara P.O., Thrissur - 680 320	Diary Division & Ice Cream Plant	5	5.1	0	0.5	0	0.5	0	0.5	0	0
25	KSE Limited Kinfra Park Nalukettu Road Koratty Thrissur - 680 308	Deoiled Coconut Cake Solvent Oil Refined Veg.Oil Fatty Acid	5	5.1	0	1.06	0	1.06	0	1.06	0	0
26	Mini Job Works, XI/840/1, Major Industrial Estate, Ollur, Thrissur-680306	gold plated ornaments 40 kg/day	35	35.3	0	0.83	0	0.83	0.83	0	0	0

27	Nippon Toyota, Moopan Motors, Poonkunnam VIA, Puzhakkal, Ayyanthole P.O, 680003	Servicing of vehicles	5	5.1	0	4.41	0	4.41	0	4.41	0
28	Nippon Motor Corporation (P)Ltd. Vellangallur, Irinjalakuda, Thrissur	Servicing of vehicles	5	5.1	0	22.03	0	22.03	0	22.03	0
29	Pee Gee Gold Covering, Major Industrial Estate, Ollur, Thrissur-680306	gold plated ornaments 25 kg/day	35.3	35.3	0	0.29	0	0.29	0.29	0	0
30	Phoenix cars india pvt.ltd, 12/493/1, NH 47,mannuthy byepass, nadathara p.o, thrissur.	Servicing of vehicles	5	5.1	0	13.22	0	13.22	0	13.22	0
31	Poovathingal Dye works, Electroplating Unit, Ollur P.O, Thrissur	Electroplati ng works	35	35.3	0	0.1	0	0.1	0.1	0	0
32	Popular Vehicles & Service Ltd 19/144 Opp.CCMK Hospital Vellikulam Road Chalakudy Thrissur - 680 307	Servicing of vehicles	5	5.1	0	6.34	0	6.34	0	6.34	0

33	PSN Automobiles Pvt.Ltd, NH 47 Bye pass Nadathara	Servicing of vehicles	5	5.1	0	2.2	0	2.2	0	2.2	0
34	PVS Technocoat Industries , DIC Development Plot , Velakkode , Mundoor - 680541	Power coated profiles, windows , furniture etc - 200 meter square /day	35	35.3	0	0.1	0	0.1	0.1	0	0
35	Raju Motors South Junction Chalakudy Thrissur - 680 307	Servicing of vehicles	5	5.1	0	0.09	0	0.09	0	0.09	0
36	Renu Gold Covering, Major Industrial Estate, Ollur, Thrissur-680306	Imitation Ornaments 18 kg/day	35	35.3	0	1.7	0	1.7	1.7	0	0
37	Sai Service Station Limited Kaipamangalam P.O Thrissur - 680 681	Servicing of vehicles	5	5.1	0	2.11	0	2.11	0	2.11	0
38	Sakthi Automobiles, Bye pass Road, Nadathara, Thrissur	Servicing of vehicles	5	5.1	0	9	0	9	0	9	0
39	Shine Electroplating Yesudas Road Kunnumkulam Thrissur,680503	Electroplated metals 5 sqr mtr/day	35	35.3	0	0.72	0	0.72	0.72	0	0

40	S. K. Ornaments, Imitation Jewellery Works Street D, Mini Industrial Estate Athani, Thrissur.	gold plating ornaments 12 kg/day	35	35.3	0	0.18	0	0.18	0.18	0	0	0
41	SKOL Breweries, Poolani, Meloor P.O, Chalakudy , Thrissur - 680311	Bottle beer 4000 cases /day	5,37	5.1,37. 2	0	0.88	0	97.74	96.865	0	0.88	0
42	Sowparnika Thermistors and Hybrids Pvt. Ltd. Kolazhy P.O Athekkad Thrissur - 680 010	NTC Thermistor	5	5.1	0	0.11	0	0.11	0	0.11	0	0
43	St.George Powder Coating Marathakkara P.O Thrissur	Powder Coated Aluminium	35	35.3	0	0.1	0	0.1	0.1	0	0	0
44	Sun Bright Electro Plating, Kaipally Road, Arimpur, Thrissur	Nickel, Chromium plated parts	35.3	35.3	0	0.126	0	0.126	0.126	0	0	0
45	T.V.Sundaramm Iyenkar & Sons Ltd. NH - 47 Bye Pass , Ollukara P.O, Mannuthy, Thrissur - 680655	Servicing of vehicles	5	5.1	0	3.17	0	3.17	0	3.17	0	0

46	TVS Automobile Solutions Ltd Near Padavarad Centre, Ollur P. O Thrissur - 680306	5	5.1	0	2.11	0	2.11	0	2.11	0	0
47	Three Star Electroplating Works. Sno. 3 Industrial Estate , Ollur, Thrissur	35	35.3	0	1.5	0	1.5	1.5	0	0	0
48	Top Clean Service Station Ollur, Christopher nagar, Thrissur	5	5.1	0	0.51	0	0.51	0	0.51	0	0
49	Two Stars Designs Gold covering, Major Indl. Estate, Ollur, Thrissur-680306	35	35.3	0	2	0	2	2	0	0	0
50	United Aluminium Company works, Major Industrial Estate Ollur, Thrissur - 680306	5	5.1	0	0.2	0	0.2	0.2	0	0	0
51	Vandhanam Gas Products, IX/256/A, SIDCO Industrial Park, Athani, Peringandoor P.O, M.G.Kavu, Thrissur - 680 581	5	5.1	0	0.04	0	0.04	0	0.04	0	0

52	Vision Honda Motors Pvt Ltd, Bye Pass Road Mannuthy P.O, Ollukkara Thrissur - 680 655	Servicing of vehicles	5	5.1	0	0.006	0	0.006	0	0.006	0	0.006	0
53	Vijay Wheel Care, Potta, Chalakudy, Thrissur	Servicing of vehicles	5	5.1	0	0.765	0	0.765	0	0.765	0	0.765	0
54	Zindol Agencies, Varakkara, Thrissur - 680325	Grease - 300 kg/ml	5	5.1	0	2.11	0	2.11	0	2.11	0	2.11	0
55	Ashok Metal Crafts	ETP sludge	35	35.3	0	7.315	0	7.315	7.315	7.315	0	7.315	0
56	Comfoams Limited	ETP sludge	35	35.3	0	76.585	0	76.585	76.585	76.585	0	76.585	0
57	Cosmos Powder Coating	Powder Coating waste	0	0	A , A68, 71, 67	0	0.555	0.555	0.555	0.555	0	0.555	0
58	Harrisons Malayalam Ltd., Trichur	ETP sludge	35	35.3	0	2.07	0	2.07	2.07	2.07	0	2.07	0
59	Mardec R.K. Latex (P) Ltd.	Laminated Paking Cover	0	0	C2	0	2.525	2.525	2.525	2.525	0	2.525	0
		Lime residue	0	0	C4	0	4.31	4.31	4.31	4.31	0	4.31	0
60	Metal Tech Industries	ETP sludge	35	35.3	0	3.69	0	3.69	3.69	3.69	0	3.69	0

61	MIL Control India Ltd. , Meladoor, Mala, Thrissur	ETP sludge	35	35.3	0	7.5	0	7.5	7.5	0	0	0
		Control valve 10 Nos./day	5	5.1	0	1.2	0	1.2	0	0	1.2	0
		Valve, Bonnet 10 Nos./day										
		Paint sludge	21	21.1	0	7.665	0	8.865	8.865	0	0	0
62	Nitta Gelatin India Limited	Industrial Waste	35	35.3	0	0	0	395.34	395.34	0	0	0
		Industrial Waste	35	35.3	0	0	0	6531.81	6531.81	0	0	0
63	Pooram Foods	ETP sludge	0	0	C2	0	4.76	4.76	4.76	0	0	0
64	Power Coat Aluminium Electro Colouring	Electrocoloring waste	0	0	A	0	0.99	0.99	0.99	0	0	0
65	Sandram Powder Coatings	Powder Coating waste	0	0	A	0	1.485	1.485	1.485	0	0	0
66	Southern Electro Colouring	Sludge	0	0	A	0	26.1	26.1	26.1	0	0	0
67	St Ann's Electro Coloured Products	Sludge	0	0	A	0	1.56	1.56	1.56	0	0	0
							TOTAL	8601.98	7190.51	1411.47	0	0

KOTTAYAM

Sl No.	Name and Address	Products tonne/year	HW generating process as per schedule-1	HW generating stream as per schedule-1	HW generation in t/y as per schedule-2	HW generating stream as per schedule-1(t/y)	HW generation in t/y as per schedule-2	Total quantity of HW in t/y	Disposal in landfills (t/y)	Recyclable (t/y)	Incinerable (t/y)
1	HNL, Hindusthan News print Nagar, Mevelloor P.O, Velloor, Kottayam.	Newsprint	5	5.1	0	45	0	72.62	0	72.62	0
			34	34.4,34.2		27.62					
2	MRF, Vadavathoor, Kottayam	Tyre, Tube,	5	5.1	0	175	0	175	0	175	0
3	Focus Automobile services LTd, Manipuzha, Nattakom P.O., Kottayam	Servicing of vehicles	5	5.1	0	1.54	0	1.54	0	1.54	0
4	K.S.E.B., T.M.R., Pallom, Kuzhimattom P.O	Reconditioning of transformers	5	5.1	0	2.2	0	2.2	0	2.2	0
5	Canara Paper Mills (P) Ltd., Changanassery, Chethupizha	Craft Paper	5	5.1	0	0.01	0	0.01	0	0.01	0

6	Indira Motors, Maryathuruth P.O, Kottayam	Servicing of vehicles	5	5.1	0	0.16	0	0.16	0	0.16	0
7	Salim Barrels, Ponkunnam, Chirakkadavu, Kanjiapally,	Barrel reconditioni ng	5	5.1	0	0.18	0	0.18	0	0.18	0
8	Geetha Traders, Ponkunnam,	Barrel reconditioni ng	5	5.1	0	0.18	0	0.18	0	0.18	0
9	Lagoona Kumarakom Resort Ltd., C/O.Kumarakom Hotels Pvt. Ltd, Ambika Market P.O.,	Resort	5	5.1	0	0.5	0	0.5	0	0.5	0
10	Intimate Automobiles & Engg.works, Nalunnakkal P.O, Vakathanam	Servicing of vehicles	5	5.1	0	1.2	0	1.2	0	1.2	0
11	Jubilee Automobiles, S.H.Mount ,Kottayam	Servicing of vehicles	5	5.1	0	8.25	0	8.25	0	8.25	0
12	Popular Hyundai, Popular Motor World(P)Ltd Kodimatha.	Servicing of vehicles	5	5.1	0	0.48	0	0.48	0	0.48	0

13	Neerackal Latex Pvt.Ltd, Muttuchira P.O, Kottayam.	Latex	5	5.1	0	0.8	0	0.8	0	0.8	0	0
14	MGF Hundai Service centre, Vadavathoor P.O, Kottayam	Servicing of vehicles	5	5.1	0	8.81	0	8.81	0	8.81	0	0
15	Popular Hyundai popular motor world(p)ltd., palampra p.o,26thmile, Kanjirapally	Servicing of vehicles	5	5.1	0	1.37	0	1.37	0	1.37	0	0
16	Popular Hyundai, Popular motor World Pvt. Ltd, Adichira, Theilakom P.O	Servicing of vehicles	5	5.1	0	0.69	0	0.69	0	0.69	0	0
17	Marikar Engineers Pvt Ltd, (Fiat car show room & workshop),Manipuzha, Nattakom	Servicing of vehicles	5	5.1	0	2.75	0	2.75	0	2.75	0	0
18	Indus motors light commercial vehicle (P)Ltd, Parolickal Jn, Athirampuzha P.O, Kottayam	Servicing of vehicles	5	5.1	0	0.82	0	0.82	0	0.82	0	0
19	Kairali Ford, Parolickal Jn,, Ettumanoor P.O, Kottayam	Servicing of vehicles	5	5.1	0	5.5	0	5.5	0	5.5	0	0
20	Indus Motors Co (P) Ltd., Thalayolaparambu,	Servicing of vehicles	5	5.1	0	1.56	0	1.56	0	1.56	0	0

21	T.V.Sundaram Iyengar&Sons Ltd.,20/383,Sivas building,Pala Road,Ettumanoor-686631	Servicing of vehicles	5	5.1	0	5.29	0	5.29	0	5.29	0	5.29	0
22	T V Sundaram Iyengar & sons Pvt Ltd, Adichira, Kottayam	Servicing of vehicles	5	5.1	0	3.08	0	3.08	0	3.08	0	3.08	0
23	MGF Hundai Service centre, Vazhappally P.O,Kottayam	Servicing of vehicles	5	5.1	0	13.74	0	13.74	0	13.74	0	13.74	0
24	Geo motors sales & services, Manipuzha, Nattakom P.O	Servicing of vehicles	5	5.1	0	2.22	0	2.22	0	2.22	0	2.22	0
25	Indus Motors Co Pvt Ltd, Manipuzha, Kottayam.	Servicing of vehicles	5	5.1	0	4.23	0	4.23	0	4.23	0	4.23	0
26	Popular Vehicles & Services Ltd, S H Mount P.O., Kottayam.	Servicing of vehicles	5	5.1	0	2.78	0	2.78	0	2.78	0	2.78	0
27	Indo-Jap Agencies,Parackal Building,K.K.Road,Kanjirappally, Kottayam-686507	Servicing of vehicles	5	5.1	0	2.75	0	2.75	0	2.75	0	2.75	0

28	Indus Motors, CheppumparaPonkunn am,Kottaym.	Servicing of vehicles	5	5.1	0	2.11	0	2.11	0	2.11	0
29	Indus Motors Co Pvt.Ltd, Pala(Alphonsa College), Kottayam.	Servicing of vehicles	5	5.1	0	2.11	0	2.11	0	2.11	0
30	Popular Mega Motors India Ltd, Thannikkapady , Vadavathoor P.O.,	Servicing of vehicles	5	5.1	0	3.17	0	3.17	0	3.17	0
31	Popular Mega Motors India Ltd, Collectorate P.O., Kottayam.	Servicing of vehicles	5	5.1	0	0.22	0	0.22	0	0.22	0
32	T.V.Sundaram Iyengar&Sons, Collectorate ,veloor P.O , Kottayam	Servicing of vehicles	5	5.1	0	2.2	0	2.2	0	2.2	0
33	Kerala Cars Pvt. Ltd, MGF Building, SH Mount, Nagampadam	Servicing of vehicles	5	5.1	0	13.74	0	13.74	0	13.74	0
34	MGF Hundai Service centre, Vadavathoor P.O, Kottayam	Servicing of vehicles	5	5.1	0	5.5	0	5.5	0	5.5	0
35	Popular motor world (P) Ltd, Udayanapuram, Vaikom	Servicing of vehicles	5	5.1	0	1.37	0	1.37	0	1.37	0

36	Riotech Industries., Mini Industrial Estate Valavoor(P.O),Kottayam-686635	Metal paste polyster putty	25	25.1,25.2	0	0.52	0	0.52	0.52	0	0			
37	Tufko International, Kollamkulam Building, Anakkal(P.O), Kanjirapally	Tuffed Coir mat	0	0	Class (C1)	0	11.26	11.26	11.26	0	0			
	TOTAL										360.91	11.78	349.13	0

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Sl. No	Name and Address	Products	HW generating process as per schedule-1	HW generating stream as per schedule-1	HW generating stream as per schedule-2	HW generation as per schedule-1	HW generation as per schedule-2	Total quantity of HW in t/y	Disposal in landfills in t/y	Recyclable in t/y	Incinerable in t/y
1	Althara Service Station, Thodupuzha	Servicing of vehicles	5	5.1	0	0.1	0	0.1	0	0.1	0
2	Athickal Authomobiles, Vengalloor	Servicing of vehicles	5	5.1	0	1.06	0	1.06	0	1.06	0
3	Autojet Car wash, Manakkad	Servicing of vehicles	5	5.1	0	1.06	0	1.06	0	1.06	0
4	Bridge view Service station, Mundakkayam (Alfa Service Station)	Servicing of vehicles	5	5.1	0	2.64	0	2.64	0	2.64	0
5	Car Care Automobiles, Thodupuzha East	Servicing of vehicles	5	5.1	0	2.11	0	2.11	0	2.11	0
6	Car Spa, Opp:PSN Yamaha, Showroom, Vengalloor P.O	Servicing of vehicles	5	5.1	0	5.29	0	5.29	0	5.29	0
7	Classic Motors, Kumaramangalam P.O, Thodupuzha	Servicing of vehicles	5	5.1	0	6.34	0	6.34	0	6.34	0

8	Cristal Automobiles, Chumkam	Servicing of vehicles	5	5.1	0	1.27	0	1.27	0	1.27	0	1.27	0
9	General Automobiles & Service station, Kattappana	Servicing of vehicles	5	5.1	0	2.11	0	2.11	0	2.11	0	2.11	0
10	J& J Water servicing station Chakkupallam	Servicing of vehicles	5	5.1	0	1.59	0	1.59	0	1.59	0	1.59	0
11	Joys P. Stephen workshop, Thodupuzha	Servicing of vehicles	5	5.1	0	2.64	0	2.64	0	2.64	0	2.64	0
12	Karimutam Service Station, Attapallam, Kumily	Servicing of vehicles	5	5.1	0	1.06	0	1.06	0	1.06	0	1.06	0
13	Madathil Service Station, Thodupuzha	Servicing of vehicles	5	5.1	0	1.59	0	1.59	0	1.59	0	1.59	0
14	Malayakudiyil Express car was, Muthuvankudy	Servicing of vehicles	5	5.1	0	2.64	0	2.64	0	2.64	0	2.64	0
15	Milan Service station, Thodupuzha	Servicing of vehicles	5	5.1	0	1.06	0	1.06	0	1.06	0	1.06	0
16	Liberty Motocorp, Near Kattappana Bus Stand, Kattappana	Servicing of vehicles	5	5.1	0	1.27	0	1.27	0	1.27	0	1.27	0
17	Muthoot Honda, Thodupuzha	Servicing of vehicles	5	5.1	0	2.11	0	2.11	0	2.11	0	2.11	0

18	Muthoot Honda, Near KSRTC Sub Depot, Kattappana	Servicing of vehicles	5	5.1	0	1.06	0	1.06	0	1.06	0
19	Neethu Service station, Mankkad	Servicing of vehicles	5	5.1	0	1.06	0	1.06	0	1.06	0
20	Pattathekuzhy Service Station, Neumkandam	Servicing of vehicles	5	5.1	0	1.06	0	1.06	0	1.06	0
21	Sincere Auto Garage, Kattappana	Servicing of vehicles	5	5.1	0	2.11	0	2.11	0	2.11	0
22	Plathottam Automobiles, Opp. Mini Industries, Adimali	Servicing of vehicles	5	5.1	0	1.59	0	1.59	0	1.59	0
23	Moolayil Service Station, Vallakadau p.O, Vandiperiyar	Servicing of vehicles	5	5.1	0	1.59	0	1.59	0	1.59	0
24	Madavana Water Service Center, Kumaramangalam P.O,Kumaramangalam	Servicing of vehicles	5	5.1	0	1.27	0	1.27	0	1.27	0
25	St.Marys Service Station, Mlamala, Thengakkal P.O	Servicing of vehicles	5	5.1	0	2.11	0	2.11	0	2.11	0
26	St.George Vehicle Solutions, Puttady P O, Puttady	Servicing of vehicles	5	5.1	0	1.06	0	1.06	0	1.06	0

27	Golden Authomobiles, Vengalloor	Servicing of vehicles	5	5.1	0	2.11	0	2.11	0	2.11	0	2.11	0
28	Classic Motors, Kumaramangalam P.O, Thodupuzha	Servicing of vehicles	5	5.1	0	4.23	0	4.23	0	4.23	0	4.23	0
29	Friends Automobiles, Puliyamala, Kattappana	Servicing of vehicles	5	5.1	0	2.2	0	2.2	0	2.2	0	2.2	0
30	Indus Motors Co. Pvt Ltd, Kattappana	Servicing of vehicles	5	5.1	0	0.21	0	0.21	0	0.21	0	0.21	0
31	Indus Motors Co. Pvt Ltd, Thodupuzha	Servicing of vehicles	5	5.1	0	0.21	0	0.21	0	0.21	0	0.21	0
32	Popular Mega Motors, Pala Rd, Thodupuzha	Servicing of vehicles	5	5.1	0	1.06	0	1.06	0	1.06	0	1.06	0
33	Travence Auto Craft LLP, Vengalloor	Servicing of vehicles	5	5.1	0	4.23	0	4.23	0	4.23	0	4.23	0
34	TVS Iyengar & Sons Pvt Ltd, Kattappana	Servicing of vehicles	5	5.1	0	6.61	0	6.6	0	6.6	0	6.6	0
35	TVS Iyengar & Sons Pvt Ltd, , Thodupuzha	Servicing of vehicles	5	5.1	0	5	0	5	0	5	0	5	0
36	Royal Automobiles, Vengalloor	Servicing of vehicles	5	5.1	0	2.11	0	2.11	0	2.11	0	2.11	0
37	Tuskar Veneers and Plywoods, IDP, Muttom P.O, Thodupuzha	Plywoods	25	25.1,25.2	0	3.2	0	3.2	0	3.2	0	3.2	0
TOTAL										142.00	65.22	76.78	0

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3. http://www.cpcb.nic.in/Hazardous_waste.php- Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.
4. Details submitted from Kerala Enviro Infrastructure Ltd (KEIL), TSDF Project, Ambalamedu.

