

PROCEDURE FOR TRANSPORTATION OF HAZARDOUS WASTE



Confederation of Indian Industry

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The report is only an attempt to detail the CPCB procedures for transporting hazardous waste, which will help cement industries and waste generators to transport the Hazardous waste in an environmentally sound manner.

Introduction

CII- Sohrabji Godrej Green Business Centre is working on an initiative in association with CMA (cement manufacturers association) to increase use of “Alternative Fuels & Raw materials (AFR)” in Indian Cement Industry.

As a part of the initiative CII is working on the project “Facilitate Development of Framework to Promote Alternate Fuel Utilization in India” and is partially supported by Shakti Sustainable Energy Foundation (SSEF), a part of Climate Works Foundation.

The main objective of this project is to accelerate AFR initiatives and increasing usage of AFR in the Indian Cement Industry through capacity building, data availability and facilitating exchange of waste by working closely with Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs), thereby reducing environmental impacts of waste generation and raw material usage.

The hazardous wastes for co-processing need to be handled in an environmentally safe manner avoiding the possibilities of contaminating the nearby environment and eliminate the chances of accidents leading to environmental catastrophe.

Central pollution control board has laid down procedures¹ to be followed for obtaining permission to transport hazardous waste to co-processing units. This process of getting approval is to make the co processing activity in a safe manner, so that the waste will not contaminate the environment as well as the people associated with it.

This report is a brief of CPCB procedures to be followed while transporting hazardous waste from waste generator to co-processing unit.

¹Guidelines on Co-processing in Cement/Power/Steel Industry February 2010

http://www.cpcb.nic.in/divisionsofheadoffice/hwmd/Latest_51_Latest_51_GUIDELINES-ON_CO-ProcessinginCement.pdf

In February 2010, CPCB released “Guidelines on Co-processing in Cement/Power/Steel Industry” in order to streamline the procedure of co-processing so as to give a thrust to such activity, the guidelines have been prepared.

About 6.2 Million tonnes of hazardous wastes is annually generated in India, out of which around 3.09 Million tonnes is recyclable, 0.41 Million tonnes is incinerable and 2.73 Million tonnes is land-fillable. Out of these hazardous waste most are having characteristics to use either in energy recovery or material recovery, i.e AFR.

Hazardous waste destroyed at the higher temperature, in the range of 1400 ‘C and sufficient residence time for the waste to burn completely, makes this as an excellent avenue for co processing in cement kiln. No residue left after the energy recovery process is an added advantage of the cement manufacturing process.

The requirements of the procedure include handling, labeling, packaging and transporting the hazardous waste, however, these will not be applicable to other substances like tyre chips, plastic waste and other high volume low effect wastes such as phosphor gypsum, red mud, slags from pyrometallurgical operations etc. not covered under the purview of the Hazardous wastes (Management and Handling & Transboundary movement) Rules, 2008.

RESPONSIBILITIES FOR OCCUPIER/WASTE GENERATOR FOR HANDLING OF HAZARDOUS WASTES:

“Occupier” in relation to any factory or premises, means a person who has, control over the affairs of the factory or the premises.

Occupier is the overall responsible person while handling the hazardous waste. He should ensure that the waste handled should not create any imbalance to environment, by creating accidents and damage to human beings.

He should also required to ensure that the persons working on the site with hazardous waste should be trained and equipped necessary to ensure their safe working.

The four main ingredients of hazardous waste transportation are

1. Authorization
2. Packaging
3. Labeling
4. Transportation

AUTHORIZATION

Authorization required from state pollution control board/pollution control committee for every one, who engaged in waste management, which includes processing, treatment, package, transportation, collection, conversion, sale and use of hazardous waste.

To obtain such authorization from SPCB/PCC the concerned person should make application in form 1 of the rules.

The hazardous waste shall be collected, stored or re processed only in authorized facility, by the SPCB/PCC.

PACKAGING

- ❖ The container which carries the hazardous waste should withstand the handling and retain integrity for a minimum period of six months.
- ❖ Container requirements for packaging hazardous waste enclosed in annexure 1
- ❖ During transportation the container should not break open or defective.
- ❖ It should be packed and sealed to prevent spillage of waste during transportation.
- ❖ The packaging material should not affect from the contents of the waste.

LABELLING:

There are two types of labeling requirements:

- ✓ Labeling of individual transport containers (ranging from a pint-size to a tank)
- ✓ Labeling of transport vehicles.
- It should be marked clearly on the container with details of contents of the waste.
- Labeling of container shall be provided with a general label as per Form 12 of the Rules.
- It must be irremovable, waterproof and firm to the container.
- Containers that contain hazardous waste shall be labelled with the words “HAZARDOUS WASTE” in Vernacular language, Hindi / English.
- Emergency contact phone numbers shall be prominently displayed.
- The information on the label must include the code number of the waste, the waste type, the origin (name, address, telephone number of generator), hazardous property (e.g. flammable), and the symbol for the hazardous property (e.g. the red square with flame symbol).

TRANSPORTATION OF HAZARDOUS WASTES:

Transportation is not only the responsibility of waste generator; it also includes the co processor, who utilizes the waste and transporter, who transport the waste from generator to co processor.

The waste generator should ensure that wastes are packaged in a manner suitable for safe handling, storage and transport. Labeling on packaging is readily visible and material used for packaging shall withstand physical conditions and climatic factors.

The transport of hazardous waste containers shall be in accordance with the provisions of the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008, (herein after referred as HW (M, H & TBM) Rules) and the rules made by the Central Government under the Motor Vehicle Act, 1988 and other guidelines issued from time to time.

1. In case of transportation of hazardous waste through a State other than the State of origin or destination, the occupier should intimate the concerned State Pollution Control Board, before handing over the hazardous waste to the transporter.
2. The occupier shall provide the transporter with relevant information in Form 11 (i.e. Transport Emergency (TREM) Card) of the HW (M, H & TBM) Rules regarding the hazardous nature of the wastes and measures to be taken in case of an emergency.
3. All hazardous waste containers shall be provided with a general label as given in Form 12 of the HW (M, H & TBM) rules.
4. The occupier of the hazardous waste should ensure that the waste are packed and sealed in manner good for handling and transportation.

Manifest System (Movement Document to be used within the country only)

- The occupier shall prepare six copies of the Manifest in Form 13 comprising of colour code indicated below and all six copies shall be signed by the transporter

Copy number with colour code	Purpose
Copy 1 (White)	To be forwarded by the occupier to the State Pollution Control Board Committee.
Copy 2 (Yellow)	To be carried by the occupier after taking signature on it from the transporter and the rest of the four copies to be carried by the transporter.
Copy 3 (Pink)	To be retained by the operator.
Copy 4 (orange)	To be return to the transporter by the operator of the facility / recycler after accepting waste.
Copy 5 (green)	To be return by the operator of the facility to State Pollution Control board/Committee after treatment and disposal of the waste.
Copy 6 (blue)	To be return by the operator of the facility to the occupier after treatment and disposal of hazardous materials/wastes.

Occupier- waste generator **Transporter-** Transports waste **Operator-**co processor/recycler

- White colour copy 1, has to be sent to state pollution control board by occupier.
- In case of hazardous waste is likely to be transported through any transit State, the occupier shall prepare an additional copy each for information to such State and forward the same to the concerned State Pollution Control Board before handing over the hazardous waste to the transporter.
- The transporter shall submit copies 3 to 6 of the manifest duly signed with date to the operator of the facility along with the waste consignment.
- Operator of the facility upon completion of treatment and disposal of the hazardous wastes shall forward
 - copy 5 (Green) to the state pollution control board
 - copy 6 (Blue) to the occupier
 - copy 3 (Pink) shall be retained by the operator of the facility

RESPONSIBILITIES OF THE HAZARDOUS WASTE TRANSPORTER

1. Vehicle used for transportation shall be in accordance with the provisions under the Motor Vehicle Act, 1988, and rules made there under. He should also require obtaining requisite authorization from SPCB/PCC for transport of hazardous waste.
2. Transporter shall possess requisite copies of the certificate (valid authorization obtained from the concerned SPCB/PCC for transportation of waste by the waste generator and operator of a facility) for transportation of hazardous waste.
3. Transporter should have valid "Pollution under Control Certificate" (PUCC) during the transportation of hazardous waste and shall be properly displayed.
4. Vehicle shall be painted preferably in blue colour with white strip of 15 to 30 cm width running centrally all over the body. This is to facilitate easy identification.
5. Vehicle should be fitted with mechanical handling equipment as may be required for safe handling and transportation of the wastes.
6. The words "HAZARDOUS WASTE" shall be displayed on all sides of the vehicle in Vernacular Language, Hindi and English.
7. Name of the facility operator or the transporter, as the case may be, shall be displayed.
8. Vehicle shall be fitted with roll-on /roll-off covers if the individual containers do not possess the same.
9. Carrying of passengers is strictly prohibited and those associated with the waste haulers shall be permitted only in the cabin.
10. Transporter shall carry documents of manifest for the wastes during transportation as required under Rule 21 of the HW (M, H & TBM) Rules.
11. The trucks shall be dedicated for transportation of hazardous wastes and they shall not be used for any other purpose.
12. Each vehicle shall carry first-aid kit, spill control equipment and fire extinguisher.
13. Hazardous Waste transport vehicle shall run only at a speed specified under Motor Vehicle Act in order to avoid any eventuality during the transportation of hazardous waste.

14. Educational qualification for the driver shall be minimum of 10th pass (SSC). The driver of the transport vehicle shall have valid driving license of heavy vehicles from the State Road Transport Authority and shall have experience in transporting the chemicals.
15. Driver (s) shall be properly trained for handling the emergency situations and safety aspects involved in the transportation of hazardous wastes.
16. The transport vehicles shall be designed suitably to handle and transport the hazardous wastes of various characteristics.
17. Transporting the wastes in closed container at all time.
18. Delivering the wastes at designated points only.
19. Informing SPCB/PCC is Form 14 of the HW (M, H & TBM) Rules, or local authority, occupier / operator of a facility, and others concerned immediately in case of spillage, leakage or other accidents during transportation.
20. Cleanup in case of contamination.
21. Cleaning of vehicles shall be carried out at designated places as authorized by SPCB/PCC.

ACCIDENT REPORTING AND FOLLOW-UP

Where an accident occurs at the facility or on a hazardous waste site or during transportation of the hazardous waste, the occupier or operator of the facility or the transporter, as the case may be, shall report immediately to the State Pollution Control Board about the accident in Form14.

LIABILITY OF OCCUPIER, TRANSPORTER, OPERATOR OF A FACILITY AND IMPORTER.

The occupier, importer, transporter and operator of the facility shall be liable for all damages caused to the environment or third party due to improper handling of the hazardous wastes or disposal of the hazardous wastes.

ANNEXURE 1

CONTAINER REQUIREMENTS FOR PACKAGING HAZARDOUS WASTE

- ✓ Container shall be of mild steel with suitable corrosion-resistant coating and roll-on roll-off cover, which may either be handled by articulated crane or by a hook lift system comfortably for a large variety of wastes.
- ✓ Other modes of packaging, like collection in 22-liter plastic drums, cardboard cartons, PP and HDPE/LDPE containers etc., also work for variety of waste. However, all such container should be amenable to mechanical handling.
- ✓ It should be leak proof.
- ✓ In general, the containers for liquid hazardous waste should be completely closed / sealed. There should be no gas generation due to any chemical reaction within the container, and thud should be devoid of air vents.
- ✓ Container should be covered with a solid lid or a canvas to avoid emissions of any sort including spillage, dust etc. and to minimize odour generation both at the point of loading as well as during transportation.
- ✓ Container used for transportation of waste should be able to withstand the shock loads due to vibration effect/undulations of pavements etc.
- ✓ Container should be easy to handle during transportation and emptying.
- ✓ As far as possible, manual handling of containers should be minimized. Appropriate material handling equipment is to be used to load, transport and unload the containers. This equipment, lift gates and pallets. Drums should not be rolled on or off vehicles.
- ✓ Where two-tier or three-tier storage is envisaged the frame should have adequate strength to hold the containers.
- ✓ One-way containers (especially 16-liter drums) are also allowed. The multi-use container should be re-useable provided it should be cleaned and free from deterioration or defects.
- ✓ Loads are to be properly placed on vehicles. Hazardous waste containers are not to overhang, perch lean or be placed in other unstable base. Load should be secured with straps, clamps, braces or other measures to prevent movement and loss.

- ✓ Design of the container should be such that it can be safely accommodated on the transport vehicle.

Dissimilar wastes shall not be collected in the same container. Wastes shall be segregated and packed separately.

Forms in Hazardous waste management rules

Form No	Details
Form 1	Application for authorization/renewal of authorization for collection/ reception/ treatment/ transport/storage/ disposal of hazardous waste.
Form 2	Authorization for occupiers, re-processors, reusers and operators of a facility for collection, reception, treatment, storage, transport, and disposal of hazardous wastes.
Form 3	Format for maintaining records of hazardous wastes by the occupier/operator of facility.
Form 4	Annual returns pertaining to the generation of Hazardous Wastes.
Form 5	Application for grant/renewal of registration of industrial units processing environmentally sound management facilities for reprocessing /recycling
Form 6	Annual returns & records on recyclable Hazardous Wastes by recyclers.
Form 7	Application for Import or Export of Hazardous Wastes for reprocessing / recycling/reuse.
Form 8	Application for transboundary movement of hazardous wastes.
Form 9	Transboundary Movement – Movement Document.
Form 10	Records of hazardous wastes imported and exported.
Form 11	Transport Emergency (TREM) Card.
Form 12	Marking of Hazardous Waste Containers.
Form 13	Hazardous Waste Manifest.
Form 14	Accident reporting & follow up.
Form 15	Application for Filing Appeal Against the order passed by CPCB/SPCB/PCC.