

## CRITERIA FOR DISPOSAL OF HAZARDOUS WASTES IN SECURE LANDFILL



The hazardous wastes generated by industries are required to be collected in secure landfill. But latter these landfill sites generates leachate. These leachate, if not collected and treated properly, can contaminate the groundwater resources. In this regard, CPCB has taken up a project on "Development of Standards for leachate from Hazardous Waste Disposal Site". The Project has been ready and the draft report has been prepared. The criteria for disposal of hazardous wastes in landfill and leachate collection, removal and detection systems, as suggested in the report, are as follows:

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

- Waste, which is a fluid, slurry or paste.
- 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 (flash point < 550C).
- 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 possesses a calorific value of more than 3200 Kcal/kg. These wastes have to go for authorised energy recovery or for incineration.

**Table 11: Recommended Criteria for Hazardous Waste before Disposal into Secure Landfill**

Leachate Quality	Concentration	Leachate Quality	Concentration
PH	4 - 13	Chloride	< 10,000 mg/l
Conductivity	< 100,000 µS/cm.	Cyanide	< 2 mg/l
Total Organic Carbon (TOC)	< 200 mg/l	Sulphate	< 5,000 mg/l
Phenols	< 100 mg/l	Nitrate	< 30 mg/l
Arsenic	< 1 mg/l	Adsorbable organics bound Chlorine	< 3 mg/l
Lead	< 2 mg/l		
Cadmium	< 2 mg/l		
Chromium - VI	< 0.5 mg/l		
Copper	< 10 mg/l		
Nickel*	< 3 mg/l		
<b>Mercury</b>	<b>&lt; 0.1 mg/l</b>		

Zinc	< 10 mg/l		
Fluoride	< 50 mg/l		
Ammonia	< 1,000 mg/l		

These guidelines do not address the real problem of disposal of wastes containing toxic substances such as mercury. Kodaikanal was the result of such dumping of waste containing mercury.