

Characterizing a Representative Waste Sample for Toxicity

Wastes that are potentially hazardous because of toxicity require a hazardous – nonhazardous determination through laboratory analysis using the Toxicity Characteristic Leaching Procedure (TCLP) testing protocol. Submitting a **representative waste sample** to a laboratory for TCLP analysis is the only accurate and defensible way to determine if a waste is hazardous or nonhazardous due to the characteristic of toxicity.

A **representative sample** consists of a waste that is normally generated and disposed. It may be a composite sample made up of small amounts of waste generated over time or a grab sample collected from a container used to store the waste. The laboratory will determine how much of a waste sample must be collected to conduct the TCLP analyses. Samples should be taken with clean equipment and containers supplied by the laboratory selected to do the analyses. Although 40 TCLP contaminants are on EPA’s toxicity list, wastes need only be tested for the toxins likely to be present. The most common and minimum testing parameters include:

TCLP Parameter	Regulatory Limit	EPA Hazardous Waste Number
Metals		
Arsenic	5.0 mg/L	D004
Barium	100.0 mg/L	D005
Cadmium	1.0 mg/L	D006
Chromium	5.0 mg/L	D007
Lead	5.0 mg/L	D008
Mercury	0.2 mg/L	D009
Selenium	1.0 mg/L	D010
Silver	5.0 mg/L	D011
Volatile Organic Compounds (VOCs)		
Benzene	0.5 mg/L	D018
Carbon Tetrachloride	0.5 mg/L	D019
Chlorobenzene	100.0 mg/L	D021
Chloroform	6.0 mg/L	D022
1,2-Dichloroethane	0.5 mg/L	D028
1,1-Dichloroethylene	0.7 mg/L	D029
Methyl Ethyl Ketone (MEK)	200.0 mg/L	D035
Tetrachloroethylene	0.7 mg/L	D039
Trichloroethylene	0.5 mg/L	D040
Vinyl Chloride	0.2 mg/L	D043

Waste is hazardous from toxicity if any TCLP parameter is detected at a concentration equal to or greater than its corresponding regulatory limit. **Hazardous waste** must be managed in accordance with hazardous waste management regulations and disposed through an EPA-permitted hazardous waste management company. **Nonhazardous waste** may be landfilled or managed through any reputable waste management company. The Iowa Waste Reduction Center (319-273-8905) can assist you with interpreting TCLP test results and determining proper waste management practices.