

WAC 173-303-100 Dangerous waste criteria. (1) Purpose. The purpose of this section is to describe methods for determining if a solid waste is a dangerous waste by the criteria set forth in this section. The dangerous waste criteria consist of:

- (a) Toxic dangerous wastes; and
- (b) Persistent dangerous wastes.

(2) References. The following toxicity data sources are adopted by reference:

(a) The National Institute for Occupational Safety and Health's (NIOSH) Registry of Toxic Effects of Chemical Substances (RTECS), Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(b) The United States Environmental Protection Agency, Ecotoxicology Database (ECOTOX), Mid-Continent Ecology Division, 6201 Congdon Boulevard, Duluth, MN 55804.

(c) The United States National Library of Medicine Toxicology Data Network, Hazardous Substance Database (HSDB), 8600 Rockville Pike, Bethesda, MD 20894.

(3) A person must use data that are available to him or her, and, when such data are inadequate for the purposes of this section, must refer to the references identified in WAC 173-303-100(2) to determine:

(a) Toxicity data or toxic category for each known constituent in the waste;

(b) Whether or not each known constituent of the waste is a halogenated organic compound or a polycyclic aromatic hydrocarbon as defined in WAC 173-303-040.

(4) Quantity exclusion limit. A solid waste is a dangerous waste if it meets one or more of the dangerous waste criteria described in subsections (5) and (6) of this section. If a person's solid waste meets one or more of these criteria then he or she is a dangerous waste generator (and may not be considered a small quantity generator as provided in WAC 173-303-070(8)) if the quantity of the waste exceeds the following quantity exclusion limits:

(a) For toxic dangerous wastes designated as EHW (WT01), the quantity exclusion limit is 2.2 lbs. per month.

(b) For all other wastes designating under this section the quantity exclusion limit is 220 lbs. (100 kg) per month or per batch.

(5) Toxicity criteria. Except as provided in WAC 173-303-070 (4) or (5), a person must determine if a solid waste meets the toxicity criteria under this section by following either the instructions for book designation, when his knowledge of the waste is sufficient, or by testing the waste using the biological testing methods adopted under WAC 173-303-110(3).

(a) Except as provided in WAC 173-303-070(4), if a person knows only some of the toxic constituents in the waste or only some of the constituent concentrations, and if the waste is undesignated for those known constituents or concentrations, then the waste is not designated for toxicity under this subsection.

(b) Book designation procedure. A person may determine if a waste meets the toxicity criteria by following the book designation instructions as follows:

(i) A person must determine the toxic category for each known constituent. The toxic category for each constituent may be determined from available data, for example, Registry for Toxic Effects of Chemical Substances (RTECS), Hazardous Substances Data Bank (HSDB), and Ecotoxicology database (ECOTOX). The toxic category should then be identified, using the table below. If data are available for more than

one test endpoint (that is, fish, oral rat, inhalation rat, or dermal rabbit), the value with the highest toxicity must be used. Similarly, if toxicity data do not agree on the same toxic category within the same test endpoint, the value with the highest toxicity must be used.^a Finally, if toxicity data for a constituent cannot be found in reasonably available sources (for example, RTECS, HSDB or ECOTOX), the toxic category for that constituent need not be determined.

TOXIC CATEGORY TABLE

Toxic Category	Fish LC ₅₀ (mg/L) ^b	Oral Rat LD ₅₀ (mg/kg)	Inhalation Rat LC ₅₀ (mg/L) ^c	Dermal Rabbit LD ₅₀ (mg/kg)
X	<0.01	<0.5	<0.02	<2
A	0.01 - <0.1	0.5 - <5	0.02 - <0.2	2 - <20
B	0.1 - <1	5 - <50	0.2 - <2	20 - <200
C	1 - <10	50 - <500	2 - <20	200 - <2000
D	10 - 100	500 - 5000	20 - 200	2000 - 20,000

- a These four test endpoints are defined in WAC 173-303-040.
- b Fish LC₅₀ data must be derived from an exposure period greater than or equal to twenty-four hours. A hierarchy of species LC₅₀ data should be used that includes (in decreasing order of preference) salmonids, fathead minnows, and other fish species.
- c Inhalation Rat LC₅₀ data must be derived from an exposure period greater than or equal to one hour.

(ii) A person whose waste contains one or more toxic constituents must determine the equivalent concentration for the waste from the following formula:

$$\text{Equivalent Concentration (\%)} = \frac{\sum X\%}{1} + \frac{\sum A\%}{10} + \frac{\sum B\%}{100} + \frac{\sum C\%}{1000} + \frac{\sum D\%}{10,000}$$

where $\sum(X, A, B, C, \text{ or } D)\%$ is the sum of all the concentration percentages for a particular toxic category.

Example 1. A person's waste contains: Aldrin (A Category) - .01%; Endrin (A Category) - 1%; Benzene (D Category) - 4%; Phenol (C Category) - 2%; Dinoseb (B Category) - 5%; Water (nontoxic) - 87%. The equivalent concentration (E.C.) would be:

$$\begin{aligned} \text{E.C. (\%)} &= \frac{0\%}{1} + \frac{(0.01\% + 1.0\%)}{10} + \frac{5.0\%}{100} + \frac{2.0\%}{1000} + \frac{4.0\%}{10,000} \\ &= 0\% + 0.101\% + 0.05\% + 0.002\% + 0.0004\% = 0.1534\% \end{aligned}$$

So the equivalent concentration equals 0.1534%.

(iii) A person whose waste contains toxic constituents must determine its designation according to the value of the equivalent concentration:

(A) If the equivalent concentration is less than 0.001%, the waste is not a toxic dangerous waste; or

(B) If the equivalent concentration is equal to or greater than 0.001% and less than 1.0%, the person will designate the waste as DW and assign the dangerous waste number WT02; and

(C) If the equivalent concentration is equal to or less than 0.01%, the DW may also be a special waste; or

(D) If the equivalent concentration is equal to or greater than 1.0%, the person will designate the waste as EHW and assign the dangerous waste number WT01.

Example 1. Continued. The equivalent concentration of 0.1534% (from Example 1. above) is greater than 0.001% and less than 1.0%. The waste is DW and the dangerous waste number WT02 must be assigned.

(iv) Reserve.

(c) Designation from bioassay data. A person may determine if a waste meets the toxicity criteria by following the bioassay designation instructions of either:

(i) The DW bioassay. To determine if a waste is DW, a person must establish the toxicity category range of a waste by means of the 100 mg/L acute static fish test or the 5000 mg/kg oral rat test, as described in the biological testing methods (bioassay) adopted in WAC 173-303-110(3). If data from the test indicates that the waste is DW, then the person will assign the dangerous waste number WT02. Otherwise, the waste is not regulated as toxic dangerous waste. No further testing must be done except as provided in WAC 173-303-070 (4) and (5), or if the person chooses to determine whether the waste is EHW, or in the case of state-only solid dangerous waste, if the person chooses to determine whether the waste is special waste; or

(ii) The EHW and special waste bioassay. To determine if a waste is EHW, a person must establish the toxicity of a waste by means of the fish bioassay at 10 mg/L or the rat bioassay at 50 mg/Kg, as described in the biological testing methods (bioassay) adopted in WAC 173-303-110(3). (NOTE: A fish bioassay at 1 mg/L corresponds with the definition of EHW, which includes toxic categories X-B. However, the fish bioassay is not reproducible at these low levels.) If data from the test indicates that the waste is EHW, then the person will assign the dangerous waste number WT01. Otherwise, the waste will be designated DW, and the person will assign the dangerous waste number WT02. A person with state-only solid waste may choose to test a waste to determine if it is special waste. Testing levels for special waste must be at 10 mg/L for the fish bioassay or 500 mg/Kg for the oral rat bioassay. No further testing must be done except as provided in WAC 173-303-070 (4) and (5), or if the person chooses to test the waste in accordance with WAC 173-303-100 (5)(c)(i) to determine if the waste is not regulated as toxic dangerous waste.

(d) If the designation acquired from book designation and bioassay data do not agree, then bioassay data will be used to designate a waste. If a waste is designated as DW or EHW following the book designation procedure, a person may test the waste by means of the biological testing methods (bioassay) adopted under WAC 173-303-110(3), using either the static acute fish or the acute oral rat method, to demonstrate that the waste is not a dangerous waste or should be designated as DW and not EHW.

(e) A waste designated as DW by toxicity criteria must be assigned the dangerous waste number of WT02. A waste designated as EHW by toxicity criteria must be assigned the dangerous waste number of WT01.

(6) Persistence criteria. For the purposes of this section, persistent constituents are chemical compounds which are either halogenated organic compounds (HOC), or polycyclic aromatic hydrocarbons (PAH), as defined under WAC 173-303-040. Except as provided in WAC 173-303-070 (4) or (5), a person may determine the identity and concentration of persistent constituents by either applying knowledge of the waste or by testing the waste according to WAC 173-303-110 (3)(c) *Chemical Testing Methods for Designating Dangerous Waste* Publication #97-407.

(a) Except as provided in WAC 173-303-070(4), if a person knows only some of the persistent constituents in the waste, or only some of the constituent concentrations, and if the waste is undesignated for those known constituents or concentrations, then the waste is not designated for persistence under this subsection.

(b) When a waste contains one or more halogenated organic compounds (HOC) for which the concentrations are known, the total halogenated organic compound concentration must be determined by summing the concentration percentages for all of the halogenated organic compounds for which the concentration is known.

Example 2. A waste contains: Carbon tetrachloride - .009%; DDT - .012%; 1,1,1 - trichloroethylene - .020%. The total halogenated organic compound concentration would be:

$$\text{Total HOC Concentration (\%)} = .009\% + .012\% + .020\% = .041\%$$

(c) A person whose waste contains polycyclic aromatic hydrocarbons (PAH) as defined in WAC 173-303-040, must determine the total PAH concentration by summing the concentration percentages of each of the polycyclic aromatic hydrocarbons for which they know the concentration.

Example 3. A person's waste contains: Chrysene - .08%; 3,4 - benzo(a)pyrene - 1.22%. The total polycyclic aromatic hydrocarbon concentration would be:

$$\text{Total PAH Concentration (\%)} = .08\% + 1.22\% = 1.30\%$$

(d) A person whose waste contains halogenated organic compounds and/or polycyclic aromatic hydrocarbons must determine its designation from the persistent dangerous waste table.

PERSISTENT DANGEROUS WASTE TABLE

If your waste contains...	At a total concentration level of...	Then your waste's designation, and waste # are...
Halogenated Organic Compounds (HOC)	0.01% to 1.0% greater than 1.0%	DW, WP02 EHW, WP01
Polycyclic Aromatic Hydrocarbons (PAH)	greater than 1.0%	EHW*, WP03

*No DW concentration level for PAH.

(7) Reserve.

[Statutory Authority: Chapter 70.105 RCW. WSR 15-01-123 (Order 13-07), § 173-303-100, filed 12/18/14, effective 1/18/15. Statutory Authority: Chapters 70.105 and 70.105D RCW. WSR 09-14-105 (Order 07-12), § 173-303-100, filed 6/30/09, effective 7/31/09. Statutory Authority: Chapters 70.105, 70.105D, and 15.54 RCW and RCW 70.105.007. WSR 04-24-065 (Order 03-10), § 173-303-100, filed 11/30/04, effective 1/1/05. Statutory Authority: Chapters 70.105 and 70.105D RCW. WSR 03-07-049 (Order 02-03), § 173-303-100, filed 3/13/03, effective 4/13/03. Statutory Authority: Chapters 70.105, 70.105D, 15.54 RCW and RCW 70.105.007. WSR 00-11-040 (Order 99-01), § 173-303-100, filed 5/10/00, effective 6/10/00. Statutory Authority: Chapters 70.105 and 70.105D RCW. WSR 98-03-018 (Order 97-03), § 173-303-100, filed 1/12/98, effective 2/12/98; WSR 95-22-008 (Order 94-30), § 173-303-100, filed 10/19/95, effective 11/19/95; WSR 94-01-060 (Order 92-33), § 173-303-100, filed 12/8/93, effective 1/8/94. Statutory Authority: Chapter 70.105 RCW. WSR 84-09-088 (Order DE 83-36), § 173-303-100, filed 4/18/84. Statutory Authority: Chapter 70.105 RCW and RCW 70.95.260. WSR 82-05-023 (Order DE 81-33), § 173-303-100, filed 2/10/82.]