

Appendix: Dangerous Waste Criteria for the State of Washington

The following description illustrates the categorization of one class of waste and suggests methods for applying the scheme to waste mixtures. This information was provided by the Department of Ecology, State of Washington.

WAC 173=303=100 Dangerous Waste Criteria

- (I) The Dangerous Waste Criteria consist of:
- (a) The "Dangerous Waste Characteristics, WAC 173-303-090;
 - (b) Toxic Dangerous Waste, WAC 173-303-101
 - (c) Persistent Dangerous Waste, WAC 173-303-102; and
 - (d) Carcinogenic Dangerous Waste, WAC 173-303-103.

(2) Applicability. Any person who has established that his waste meets any of the Dangerous Waste Criteria is a dangerous waste generator, and shall comply with the requirements set forth in this chapter for generators.

(3) Relation to Lists. The Dangerous Waste Criteria shall be the primary means used by the department to modify the Dangerous Waste Lists set forth under WAC 173-303-080.

WAC 173=303=101 Toxic Dangerous Waste

(1) Purpose. This section describes methods for determining the toxicity of a waste and the criteria by which a toxic waste shall be designated as a dangerous or extremely hazardous waste.

(2) Categorization. Table A-1 establishes categories (X, A, B, C, or D) for particular toxicity levels. The X category is the most toxic, and the D category is least toxic. Substances which have toxicity levels

below the D category are generally considered to be nontoxic.

(3) Establishing Waste Toxicity. A person shall establish the toxicity of his waste or waste constituents by applying his knowledge about his waste, and/or by using the following information sources and testing methods:

- (a) The National Institute for Occupational Safety and Health (NIOSH) document "Registry of Toxic Effects of Chemical Substances" (Registry);
 - (b) The U.S. EPA's regulation 40 CFR table 117.3 (Spill Table); and
 - (c) The bioassay testing methods adopted under WAC 173-303-110 (3).
- (4) Book Designation Procedure.
- (a) A person may use the Book Designation Procedure described in this paragraph only if:
 - (i) He knows the toxicity categories (as set forth in paragraph (2), above) for the significant toxic constituents in his waste;
 - (ii) He knows the concentrations of the significant toxic constituents in his waste; and
 - (iii) He can demonstrate to the department beyond a reasonable doubt that any waste constituents about which he has limited or no knowledge do not significantly affect the toxicity of his waste.

(b) Equivalent Concentration (E. C.). A person who is book designating his waste shall determine the equivalent concentration (in percent) of the toxic constituents in his waste by using the following formula:

$$E.C. (\%) = \frac{x\%}{10} + \frac{A\%}{100} + \frac{B\%}{1,000} + \frac{C\%}{10,000} + \frac{D\%}{10,000}$$

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

Example 1. A person's waste contains: Aldrin (X category)-0.01%; Diuron (B category)-1%; Benzene (C category)-4%; Phenol (C category)-2 %; Cyclohexane (C category)-5 %; Water (nontoxic)— 87%. His equivalent concentration (E. C.) would be:

Table A-1.—Toxic Category

Category	Aquatic (fish)	Oral (rat)	Inhalation (rat)	Dermal (rabbit)
	L D ₅₀ - (ppm)	L D ₅₀ (mg/kg)	L C ₅₀ (mg/L)	L D ₅₀ (mg/kg)
x	< 0.1	< 0.5	< 0.02	< 2
A	0.1 - 1	0.55	0.02 - 0.2	2 - 20
B	1 - 10	5 - 50	0.2 - 2	20 - 200
C	10 - 100	50 - 500	2 - 20	200 - 2000
D	100 - 1000	500 - 5000	20 - 200	200 - 20,000

$$E.C. (c) = 0.01\% + \frac{0\%}{10} + \frac{1\%}{100} + \left(\frac{4\%}{1,000} + \frac{2\%}{1,000} + \frac{5\%}{1,000}\right) + \frac{0\%}{10,000}$$

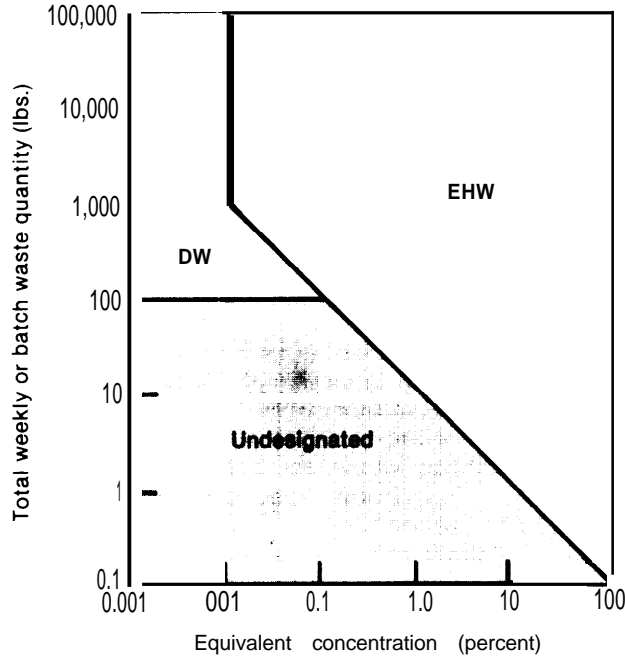
$$= 0.01\% + 0\% + 0.0170 + 0.01170 + 0\% = 0.03170$$

So his equivalent concentration equals 0.031%.

(c) Toxic Dangerous Waste Graph. To book designate his waste, a person shall use the Toxic Dangerous Waste Mixtures Graph below (fig. A-1) by finding the equivalent

concentration percentage for his waste along the abscissa, finding his total waste quantity along the ordinate, and plotting the point on the graph where the horizontal line drawn from his total waste quantity intersects the vertical line drawn from his waste mixture's equivalent concentration. If the plotted point is in the area marked dangerous waste (DW), he shall designate his waste as a dangerous waste; if the plotted point is in the area marked extremely hazardous waste (EHW), he shall designate his waste as an extremely hazardous waste.

Figure A-1.—Toxic Dangerous Waste Mixtures



DW = dangerous waste
 EHW = extremely hazardous waste

SOURCE: E. W. Tower, Solid Waste Management Division, Office of Land Programs, Department of Ecology, State of Washington, Olympia, Wash