7045.0131 CHARACTERISTICS OF HAZARDOUS WASTE.

Subpart 1. **In general.** A waste which is not excluded from regulation as a hazardous waste under part 7045.0120 is a hazardous waste if it exhibits ignitability, corrosivity, reactivity, toxicity, lethality, or is an oxidizer, as described in subparts 2 to 7. A hazardous waste which is identified by a characteristic in this part is assigned every hazardous waste number that is applicable. This number must be used in complying with the notification requirements of section 3010 of the federal Resource Conservation and Recovery Act and all applicable record keeping and reporting requirements under parts 7045.0205 to 7045.0649 and 7045.1390, and chapter 7001. For purposes of this part, the commissioner shall consider a sample obtained using any of the applicable sampling methods specified in Code of Federal Regulations, title 40, part 261, Appendix I, as incorporated in part 7045.0155, or Toxicity Characteristic Leaching Procedure, Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA publication SW-846, incorporated by reference in part 7045.0065, item D, to be a representative sample.

Subp. 2. **Ignitability.** A waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

A. it is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume, and has a flash point less than 60 degrees Celsius (140 degrees Fahrenheit), as determined by a Pensky-Martens Closed Cup Tester using the test method specified in standard D-93-79 or D-93-80 in the Annual Book of ASTM Standards, issued by the American Society for Testing and Materials (Philadelphia 1982), or a Setaflash Closed Cup Tester using the test method specified in standard D-3278-78 in the Annual Book of ASTM Standards, issued by the American Society for Testing and Materials (Philadelphia 1982), or as determined by an equivalent test method approved by the commissioner under the procedures set forth in part 7045.0075, subpart 1;

B. it is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard; or

C. it is an ignitable compressed gas as defined in Code of Federal Regulations, title 49, section 173.115, as amended, and as determined by the test methods described in that regulation or equivalent test methods approved by the commissioner under part 7045.0075, subpart 1.

A waste that exhibits the characteristic of ignitability has the hazardous waste number of D001.

Subp. 3. **Oxidizers.** A waste exhibits the characteristics of an oxidizer if a representative sample of the waste has the following properties:

A. it is an oxidizer as defined in Code of Federal Regulations, title 49, section 173.127, as amended; or

B. it readily supplies oxygen to a reaction in the absence of air. Oxidative materials include, but are not limited to, oxides, organic and inorganic peroxides, permanganates, perrhenates, chlorates, perchlorates, persulfates, nitric acid, organic and inorganic nitrates, iodates, periodates, bromates, perselenates, perbromates, chromates, dichromates, ozone, and perborates. Bromine, chlorine, fluorine, and iodine react similarly to oxygen under some conditions and are therefore also oxidative materials.

A waste that exhibits the characteristics of an oxidizer has the hazardous waste number of D001.

Subp. 4. **Corrosivity.** A waste exhibits the characteristic of corrosivity if a representative sample of the waste has any of the following properties:

A. it is aqueous and has a pH less than or equal to 2.0 or greater than or equal to 12.5, as determined by a pH meter using Method 9040C in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA publication SW-846, incorporated by reference in part 7045.0065, item D; or

B. it is liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55 degrees Celsius (130 degrees Fahrenheit) as determined by the test method specified in National Association of Corrosion Engineers Standard TM-01-69 as standardized in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA publication SW-846, incorporated by reference in part 7045.0065, item D.

A waste that exhibits the characteristic of corrosivity has the hazardous waste number of D002.

Subp. 5. **Reactivity.** A waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:

A. it is normally unstable and readily undergoes violent change without detonating;

B. it reacts violently with water;

C. it forms potentially explosive mixtures with water;

D. when mixed with water, it generates toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment;

E. it is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2.0 and 12.5 can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment;

F. it is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement;

G. it is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure; or

H. it is a forbidden explosive as defined in Code of Federal Regulations, title 49, section 173.54, as amended, a Division 1.1 or 1.2 explosive as defined in Code of Federal Regulations, title 49, section 173.50, as amended, or a Division 1.2 or 1.3 explosive as defined in Code of Federal Regulations, title 49, section 173.50, as amended.

A waste that exhibits the characteristic of reactivity has the hazardous waste number of D003.

Subp. 6. **Lethality.** Lethality is determined as follows:

A. A waste exhibits the characteristic of lethality as determined in item B, if a representative sample of the waste has any one of the following properties:

(1) an oral median lethal dose less than 500 milligrams of material per kilogram of body weight of test animal;

(2) a dermal median lethal dose less than 1,000 milligrams of material per kilogram of body weight of test animal;

(3) an inhalation median lethal concentration of less than 2,000 milligrams of material per cubic meter of air, if the material or a component is in a form that may be inhaled as a dust or mist; or

(4) an inhalation median lethal concentration of less than 1,000 parts per million of material in air, if the material or component may be inhaled as gas or vapor.

B. Lethality shall be determined by applying knowledge of materials and processes used, including reasonably available information on the lethality of the components of the waste. If available information and knowledge are insufficient to reasonably determine lethality, the generator must notify the commissioner. The commissioner may order additional evaluation as specified in part 7045.0217. Additional evaluation may include testing according to the specifications of item C.

C. Lethality shall be determined as described in subitems (1) to (3):

(1) Oral median lethal dose shall be determined by a test in which the specified time is 14 days, the group of test animals is at least ten white laboratory rats of

200 to 300 grams each, half of which are male and half of which are female, and the route of administration is a single oral dose.

(2) Dermal median lethal dose shall be determined by a test in which the specified time is 14 days and the group of test animals is ten or more white rabbits, half of which are male and half of which are female, and the route of administration is a 24-hour exposure with continuous contact on bare skin.

(3) Inhalation median lethal concentration shall be determined by a test in which the specified time is 14 days, the group of the test animals is at least ten white laboratory rats of 200 to 300 grams each, half of which are male and half of which are female, and the route of administration is continuous respiratory exposure for a period of one hour.

D. A waste that exhibits the characteristics of lethality has the hazardous waste number MN01.

Subp. 7. **Toxicity.** Toxicity is determined as follows:

A. A waste, except manufactured gas plant waste, exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA publication SW-846, incorporated by reference in part 7045.0155, subpart 1, item B, the extract from a representative sample of the waste contains any of the contaminants listed in subpart 8 at a concentration equal to or greater than the respective contaminant values listed. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Method 1311, is considered to be the extract for the purpose of this evaluation.

B. A waste that exhibits the characteristic of toxicity has the hazardous waste number specified in subpart 8 which corresponds to the toxic contaminant causing it to be hazardous.

C. If the concentration of a constituent in a waste is known and that constituent is listed in subpart 8, the maximum possible concentration in the extract can be calculated on the assumption that 100 percent of the constituent will be extracted. If the calculated maximum possible concentration in the extract is less than the limit listed in subpart 8, the waste is not a hazardous waste because of the subject constituent.

Subp. 8. **Maximum concentration of contaminants for the toxicity characteristic.**

Hazardous Waste Number	Contaminant	CAS No.	Maximum Concentration (milligrams per liter)
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0
D023	o-Cresol	95-48-7	*200.0
D024	m-Cresol	108-39-4	*200.0
D025	p-Cresol	106-44-5	*200.0
D026	Cresol		*200.0
D016	2,4-D	94-75-7	10.0
D027	1,4-Dichlorobenzene	106-46-7	7.5
D028	1,2-Dichloroethane	107-06-2	0.5
D029	1,1-Dichloroethylene	75-35-4	0.7
D030	2,4-Dinitrotoluene	121-14-2	0.13
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its epoxide)	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	0.13
D033	Hexachlorobutadiene	87-68-3	0.5
D034	Hexachloroethane	67-72-1	3.0
D008	Lead	7439-92-1	5.0
D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2

D014	Methoxychlor	72-43-5	10.0
D035	Methyl ethyl ketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0
D037	Pentachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	5.0
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene	79-01-6	0.5
D041	2,4,5-Trichlorophenol	95-95-4	400.0
D042	2,4,6-Trichlorophenol	88-06-2	2.0
D017	2,4,5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

*If o-, m-, and p-cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 milligrams per liter.

Statutory Authority: *MS s 14.07; 116.07; 116.37*

History: *9 SR 115; L 1987 c 186 s 15; 15 SR 1878; 16 SR 2239; 20 SR 715; 33 SR 2042*

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