United States
Environmental Protection

Office of Solid Waste
and Emergency Response

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Office of Solid Waste

EPA

Environmental Fact Sheet

EPA Simplifies Land Disposal Restrictions by Establishing a Set of Universal Treatment Standards, and Finalizes Treatment Standards for 42 Newly Listed and Identified Wastes

Background

The Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA) enacted in 1984 prohibit the land disposal of untreated hazardous wastes. HSWA requires EPA to set levels or methods of treatment for hazardous wastes to substantially diminish the short-term and long-term threats to human health and the environment. Wastes that meet the treatment standards established by EPA may be land disposed (i.e., placed in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave).

This rule streamlines the existing set of LDR treatment standards. In addition, it establishes treatment standards for 42 of the wastes listed or identified since HSWA was enacted. The schedule for newly listed and identified wastes in this final rulemaking is part of a proposed consent decree signed by EPA and the Environmental Defense Fund.

Action

In a major move to simplify the LDR program, the Agency is promulgating a set of universal treatment standards for over 200 constituents (see Table 1). These standards apply uniformly to the treatment of the constituent, regardless of the waste in which the constituent is found. The universal treatment standards apply to virtually all waste codes with numerical standards. Furthermore, this rule finalizes LDR treatment standards based on Best Demonstrated Available Technology (BDAT) for 42 newly listed or identified wastes, including coke by-product wastes, chlorotoluene wastes, and organic Toxicity

Characteristic (TC) wastes. Finally, EPA is promulgating regulations that require TC pesticide and highly concentrated ignitable wastes be treated, and not merely diluted, prior to injection into a Class I nonhazardous deep injection well.

Contact

For further information, or to order a copy of the *Federal Register* notice, please call the RCRA Hotline Monday through Friday, 8:30 a.m. to 7:30 p.m., EST and ask for the rule *Land Disposal Restrictions Phase II--Universal Treatment Standards, and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Wastes.* The national toll-free number is (800) 424-9346; for the hearing impaired, it is (TDD) (800) 553-7672. In Arlington, VA, the number is (703) 920-9810 or (TDD) (703) 486-3323. Write to the RCRA Information Center (5305), US EPA, 401 M Street, SW, Washington, DC 20460.

Table 1. Universal Treatment Standards for Regulated Hazardous Constituents†

Regulated Hazardous Organic Constituent	Wastewater Concentration Total Composition (mg/l)	Nonwastewater Concentration Total Composition (mg/l)
Acenaphthylene	0.059	3.4
Acenaphthene	0.059	3.4
Acetone	0.28	160
Acetonitrile	5.6	1.8
Acetophenone	0.010	9.7
2-Acetylaminofluorene	0.059	140
Acrolein	0.29	Not Regulated
Acrylamide	19	23
Acrylonitrile	0.24	84
Aldrin	0.021	0.066
4-Aminobiphenyl	0.13	NR
Aniline	0.81	14
Anthracene	0.059	3.4
Aramite	0.36	Not Regulated
alpha-BHC	0.00014	0.066
beta-BHC	0.00014	0.066
delta-BHC	0.023	0.066
gamma-BHC	0.0017	0.066
Benz(a)anthracene	0.059	3.4
Benzal chloride	0.055	6.0
Benzene	0.14	10
Benzo(a)pyrene	0.061	3.4
Benzo-(b)fluoranthene *	0.11	6.8
Benzo(k)fluoranthene*	0.11	6.8
Benzo(g,h,i)perylene	0.0055	1.8
Bis(2-chloroethoxy)methane	0.036	7.2
Bis(2-chloroethyl)ether	0.033	6.0
Bis(2-chloroisopropyl)ether	0.055	7.2
Bis(2-ethylhexyl)phthalate	0.28	28
Bromodichloromethane	0.35	15
Bromomethane	0.11	15
4-Bromophenyl phenyl ether	0.055	15
n-Butyl alcohol	5.6	2.6
Butyl benzyl phthalate	0.017	28
2-sec-Butyl-4,6- dinitrophenol	0.066	2.5
Carbon disulfide	3.8	4.8**
Carbon tetrachloride	0.057	6.0
Chlordane	0.0033	0.26
p-Chloroaniline	0.46	16
Chlorobenzene	0.057	6.0
Chlorobenzilate	0.10	Not Regulated
2-Chloro-1,3-butadiene	0.057	0.28
Chlorodibromomethane	0.057	15
Chloroethane	0.27	6.0
Chloroform	0.046	6.0
p-Chloro-m-cresol	0.018	14
2-Chloroethyl vinyl ether	0.062	Not Regulated
Chloromethane (Methyl chloride)	0.19	30
2-Chloronaphthalene	0.055	5.6
2-Chlorophenol	0.044	5.7
3-Chloropropylene	0.036	30
Chrysene	0.059	3.4
Cresol (m- and p-isomers)	0.77	5.6

o-Cresol	0.11	5.6
Cyclohexanone	0.36	0.75**
o,p'-DDD	0.023	0.087
p,p'-DDD	0.023	0.087
o,p'-DDE	0.031	0.087
p,p'-DDE	0.031	0.087
o,p'-DDT	0.0039	0.087
p,p'-DDT	0.0039	0.087
Dibenz(a,e)pyrene	0.061	Not Regulated
Dibenz(a,h)anthracene	0.055	8.2
tris-(2,3-Dibromopropyl) phosphate	0.11	0.10
1,2-Dibromo-3-chloropropane	0.11	15
1,2-Dibromoethane (ethylene ibromide)	0.028	15
Dibromomethane	0.11	15
m-Dichlorobenzene	0.036	6.0
o-Dichlorobenzene	0.088	6.0
p-Dichlorobenzene	0.090	6.0
Dichlorodifluoromethane	0.23	7.2
1,1-Dichloroethane	0.059	6.0
1,2-Dichloroethane	0.21	6.0
1,1-Dichloroethylene	0.025	6.0
trans-1,2-Dichloroethylene	0.054	30
2,4-Dichlorophenol	0.044	14
2,6-Dichlorophenol	0.044	14
2,4-Dichlorophenoxyacetic acid (2,4-D)	0.72	10
1,2-Dichloropropane	0.85	18
cis-1,3-Dichloropropylene	0.036	18
trans-1,3-Dichloropropylene	0.036	18
Dieldrin	0.017	0.13
Diethyl phthalate	0.20	28
p-Dimethylaminoazo-benzene	0.13	Not Regulated
2,4-Dimethyl phenol	0.036	14
Dimethyl phthalate	0.047	28
Di-n-butyl phthalate	0.057	28
1,4-Dinitrobenzene	0.32	2.3
4,6-Dinitrocresol	0.28	160
2,4-Dinitrophenol	0.12	160
2,4-Dinitrotoluene	0.32	140
2,6-Dinitrotoluene	0.55	28
Di-n-octyl phthalate	0.017	28
Di-n-propylnitrosamine	0.40	14
1,4-Dioxane	Not Regulated	170
1,2-Diphenyl hydrazine	0.087	Not Regulated
Diphenylnitrosamine*	0.921	13
Diphenylamine*	0.921	13
Disulfoton	0.017	6.2
Endosulfan I	0.023	0.066
Endosulfan II	0.029	0.13
Endosulfan sulfate	0.029	0.13
Endrin	0.0028	0.13
Endrin aldehyde	0.025	0.13
Ethyl acetate	0.34	33
Ethyl benzene	0.057	10
Ethyl ether	0.12	160
Ethyl methacrylate	0.14	160
Ethylene oxide	0.12	Not Regulated
Famphur	0.017	15

Fluoranthene	0.068	3.4
Fluorene	0.059	3.4
Heptachlor	0.0012	0.066
Heptachlor epoxide	0.016	0.066
Hexachlorobenzene	0.055	10
Hexachlorobutadiene	0.055	5.6
Hexachlorodibenzofurans	0.000063	0.001
Hexachlorodibenzo-p-dioxins	0.000063	0.001
Hexachlorocyclopentadiene	0.057	2.4
Hexachloroethane	0.055	30
Hexachloropropylene	0.035	30
Indeno(1,2,3-c,d)pyrene	0.0055	3.4
Iodomethane	0.19	65
Isobutyl alcohol	5.6	170
Isodrin	0.021	0.066
Isosafrole	0.081	2.6
Kepone	0.0011	0.13
Methacrylonitrile	0.24	84
Methanol	5.6	0.75**
Methapyrilene	0.081	1.5
Methoxychlor	0.25	0.18
3-Methylchloanthrene	0.0055	15
4,4-Methylene bis (2-chloraniline)	0.50	30
Methylene chloride	0.089	30
Methyl ethyl ketone	0.28	36
Methyl isobutyl ketone	0.14	33
Methyl methacrylate	0.14	160
Methyl methansulfonate	0.018	Not Regulated
Methyl parathion	0.014	4.6
Naphthalene	0.059	5.6
2-Naphthylamine	0.52	Not Regulated
p-Nitroaniline	0.028	28
o-Nitroaniline	0.27	14
Nitrobenzene	0.068	14
5-Nitro-o-toluidine	0.32	28
o-Nitrophenol	0.028	13
p-Nitrophenol	0.12	29
N-Nitrosodiethylamine	0.40	28
N-Nitrosodimethylamine	0.40	2.3
N-Nitrosodi-n-butylamine	0.40	17
N-Nitrosomethylethylamine	0.40	2.3
N-Nitrosomorpholine	0.40	2.3
N-Nitrosopiperidine	0.013	35
N-Nitrosopyrrolidine	0.013	35
Parathion	0.014	4.6
Pentachlorobenzene	0.055	10
Pentachlorodibenzofurans	0.000035	0.001
Pentachlorodibenzo-p-dioxins	0.000063	0.001
Pentachloroethane	0.055	6.0
Pentachloronitrobenzene	0.055	4.8
Pentachlorophenol	0.089	7.4
Phenacetin	0.081	16
Phenanthrene	0.059	5.6
Phenol	0.039	6.2
Phorate	0.021	4.6
Phthalic acid	0.055	28
Phthalic anhydride	0.055	28
Pronamide	0.093	1.5

Propanenitrile (Ethyl cyanide)	0.24	360
Pyrene	0.067	8.2
Pyridine	0.014	16
Safrole	0.081	22
Silvex (2,4,5-TP)	0.72	7.9
2,4,5,-T	0.72	7.9
1,2,4,5-Tetrachlorobenzene	0.055	14
Tetrachlorodibenzofurans	0.000063	0.001
Tetrachlorodibenzo-p-dioxins	0.000063	0.001
1,1,1,2-Tetrachloroethane	0.057	6.0
1,1,2,2-Tetrachloroethane	0.057	6.0
Tetrachloroethylene	0.056	6.0
2,3,4,6-Tetrachlorophenol	0.030	7.4
Toluene	0.080	10
Toxaphene	0.0095	2.6
Tribromomethane (Bromoform)	0.63	15
1,2,4-Trichlorobenzene	0.055	19
1,1,1-Trichloroethane	0.054	6.0
1,1,2-Trichloroethane	0.054	6.0
Trichloroethylene	0.054	6.0
Trichloromono fluoromethane	0.020	30
2,4,5-Trichlorophenol	0.18	7.4
2,4,6-Trichlorophenol	0.035	7.4
2,4,5-Trichlorophen-oxyacetic acid	0.72	7.9
1,2,3-Trichloropropane	0.85	30
1,1,2-Trichloro-1,2,2-trifluoroethane	0.057	30
Vinyl chloride	0.27	6.0
Xylenes (total)	0.32	30
Total PCBs	0.1	10

Regulated Hazardous Metal Constituent	Wastewater Concentration Total Composition (mg/l)	Nonwastewater Concentration TCLP (mg/l)
Antimony	1.9	2.1
Arsenic	1.4	5.0
Barium	1.2	7.6
Beryllium	0.82	0.014
Cadmium	0.69	0.19
Chromium (total)	2.77	0.86
Cyanide (total)	1.2	590***
Cyanide (amenable)	0.86	30***
Fluoride	35	Not Regulated
Lead	0.69	0.37
Mercury--retort residues	N/A	0.20
Mercury--not retort residues	0.15	0.025
Nickel	3.98	5.0
Selenium	0.82	0.16
Silver	0.43	0.30
Sulfide	14	Not Regulated
Thallium	1.4	0.078
Vanadium	4.3	0.23
Zinc****	2.61	5.3

† These universal treatment standards do not apply to characteristic metal wastes D001 to D011.

* This standard represents the sum of the concentrations for each of this pair of constituents.

* * Measured in waste extract using TCLP (mg/l).

*** Unit = mg/kg based on TOTAL concentration. As analyzed using SW-846 Method 9010 or 9012; sample size 10 gram; distillation time one hour and fifteen minutes.

**** Zinc is not an "underlying hazardous constituent" in characteristic wastes.