

FLP 980 559-728

Chemical Conservation Corporation
Orlando, Florida

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MEMORANDUM

TO: Patrick Sullivan
FROM: Armando Gonzalez
SUBJECT: CONSOLIDATION CODES FOR INBOUND WASTE
STREAMS
DATE: September 30, 1994

The intent of this memorandum is to establish a method to classify wastes for consolidation purposes and to provide a list of consolidation codes. Consolidation codes indicate groups in which wastes are classified based on their prescribed treatment, compatibility and type. Waste types and consolidation codes are divided in three categories depending on what off-site facility is going to treat the waste, waste type and waste classification.

The first consolidation group (I) consists of outbound waste streams that can be processed by the Chem-Met and Chem-Con Valdosta facilities. The second consolidation group (II) are those waste types that do not fit the description of the first group but that are similar and compatible with each other. Finally, the third group (III) are those waste streams that do not fit the description of the first and second group, and that the only way to classify them is by DOT hazard class and hazardous waste codes. Waste streams having the same consolidation code may be commingled together except for waste streams having group III consolidation codes, which are going to be commingled in a case-by-case basis. Consolidation codes will be revised periodically to accommodate recent changes that affect their classification and to up-grade the usefulness of the system. Consolidation codes will be kept to a practical minimum number of codes.

CONSOLIDATION CODES

GROUP I
Chem-Met Services, Inc.

CHE194-SI: Solid inorganics permitted for stabilization
CHE194-LI: Liquid inorganics permitted for stabilization
CHE194-LC: Liquid caustics permitted for stabilization

Chem-Con Valdosta

CHE814-LF: Liquid organics permitted for fuel blending
CHE814-SF: Solid organics permitted for fuel blending
CHE814-MR: Liquid solvents permitted for recycling

Note: Waste must be amenable for treatment by the processes mentioned above (hazardous wastes must comply with the prescribed technologies in 40 CFR Part 268 shown in tables at the end of this memorandum), and when hazardous waste codes are assigned to the waste stream, they must be permitted at the off-site facility that will treat the waste.

GROUP II
Non-Hazardous Waste

NHAZS: Non-hazardous waste solids
NHAZL: Non-hazardous waste liquids

Corrosives

CORLA: Mineral, acids, non-oxidizing (see partial list below)

Boric Acid	Fluorosilicic acid	Hydrofluoric acid
Chlorosulfonic acid	Hexafluorophosphoric acid	Monofluorophosphoric acid
Difluorophosphoric acid	Hydriodic acid	Permonosulfuric acid
Disulfic acid	Hydrobromic acid	Phosphoric acid
Fluoroboric acid	Hydrochloric acid	Selenous acid
Fluorosulfonic acid	Hydrocyanic acid	

COROX: Mineral acids, oxidizing (see partial list below)

Bromic acid	Nitrohydrochloric acid	Perchlorous acid
Chloric acid	Oleum	Periodic acid
Chromic acid	Cyclopentanol	Sulfuric acid
Hypochlorous acid	Perbromic acid	
Nitric acid 70%	Perchloric acid	

COROA: Organic acids (see partial list below)

Acetic acid	Dichlorophenoxyacetic acid	Peracetic acid
Acrylic acid	Endothal	Phenyl acetic acid
Adipic acid	Fluoroacetic acid	Phthalic acid
Benzic acid	Formic acid	Propionic acid
Butyric acid	Fumaric acid	Succinic acid
Capric acid	Glycolic acid	Trichlorophenoxyacetic acid
Caproic acid	Hydroxy-	Trinitrobenzoic acid
Caprylic acid	dibromobenzoic acid	Toluic acid
Caprylic acid	Maleic acid	Valeric acid
Chloromethyl-	Monochloroacetic acid	
phenoxyacetic acid	Oxalic acid	
Cyanoacetic acid		

CORAW: Acids with large water volume content
CORAF: Flammable acids
CORHA: Halogenated acids
CORLC: Liquids caustics not permitted or allowed at Chem-Met
CORCF: Flammable caustics
CORHC: Halogenated caustics
CORCA: Caustic Amines

Fuel Blendables

FLAPE: Flammable pesticides not permitted or allowed at Chem-Con
FLACO: Flammable/Combustibles not permitted at Chem-Con

Electroplating Wastes

LISME: Heavy Metals and F006/F019 without cyanides
LISCN: F006/F019 containing Cyanides, F007, F008, F009, F010, F011 and F012

Mercury Wastes

HGMAT: Recyclable mercury materials
HGCOM: Equipment and parts containing mercury

Cyanide Wastes

HICNS: Materials containing high concentration levels of cyanides
RECNS: Reactive cyanide containing materials

Waste Batteries

PBBAT: Lead batteries
NCBAT: Nickel-Cadmium batteries
HGBAT: Mercury batteries

Miscellaneous Wastes

OILFI: Oil filter for reclamation
ASBES: Asbestos containing material

GROUP III
Hazardous Materials

HAZ 2.1: Hazardous waste having a DOT hazard class 2.1
HAZ 2.2: Hazardous waste having a DOT hazard class 2.2
HAZ 2.3: Hazardous waste having a DOT hazard class 2.3
HAZ 3: Hazardous waste having a DOT hazard class 3
HAZ 4.1: Hazardous waste having a DOT hazard class 4.1
HAZ 4.2: Hazardous waste having a DOT hazard class 4.2
HAZ 4.3: Hazardous waste having a DOT hazard class 4.3
HAZ 5.1: Hazardous waste having a DOT hazard class 5.1
HAZ 5.2: Hazardous waste having a DOT hazard class 5.2
HAZ 6.1: Hazardous waste having a DOT hazard class 6.1
HAZ 8: Hazardous waste having a DOT hazard class 8
HAZ 9: Hazardous waste having a DOT hazard class 9

DOT 2.1: Non-hazardous waste having a DOT hazard class 2.1
DOT 2.2: Non-hazardous waste having a DOT hazard class 2.2
DOT 2.3: Non-hazardous waste having a DOT hazard class 2.3
DOT 3: Non-hazardous waste having a DOT hazard class 3
DOT 4.1: Non-hazardous waste having a DOT hazard class 4.1
DOT 4.2: Non-hazardous waste having a DOT hazard class 4.2
DOT 4.3: Non-hazardous waste having a DOT hazard class 4.3
DOT 5.1: Non-hazardous waste having a DOT hazard class 5.1
DOT 5.2: Non-hazardous waste having a DOT hazard class 5.2
DOT 6.1: Non-hazardous waste having a DOT hazard class 6.1
DOT 8: Non-hazardous waste having a DOT hazard class 8
DOT 9: Non-hazardous waste having a DOT hazard class 9

268.42 TECHNOLOGY-BASED STANDARDS

Note: The main three items in this table are the waste code, the waste description or subcategory and the technology code. Once the waste code and the waste description or subcategory is known, the technology code may be identified in this table. Process descriptions for the technology codes are found at the end of this table. Waste codes in this table must be treated by the process indicated in this table.

268.42 TABLE 2.—TECHNOLOGY-BASED STANDARDS BY RCRA WASTE CODE

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituents	Technology code	
				Wastewaters	Nonwastewaters
D001	Table CCWE in 268.41 and Table CCW in 268.43	All descriptions based on 40 <i>CFR</i> 261.21, except for the § 261.21(a)(1) High TOC subcategory, managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.	NA	DEACT, and meet F039; or FSUBS; RORGS; or INCIN.	DEACT, and meet F039; or FSUBS; RORGS; or INCIN.
D001	NA	All descriptions based on 40 <i>CFR</i> 261.21, except for the § 261.21(a)(1) High TOC subcategory, managed in CWA, CWA-equivalent, or Class I SDWA systems.	NA	DEACT	DEACT.
RCRA 246 D001	NA	All descriptions based on 40 <i>CFR</i> 261.21(a)(1)—High TOC Ignitable Liquids Subcategory—Greater than or equal to 10% total organic carbon.	NA	NA	FSUBS; RORGS; or INCIN.
RCRA 244 D002	Table CCWE in 268.41 and Table CCW in 268.43	Acid, alkaline, and other subcategory based on 261.22 managed in non-CWA/non-CWA-equivalent/ non-Class I SDWA systems.	NA	DEACT and meet F039	DEACT and meet F039.
D002	NA	Acid, alkaline, and other subcategory based on 261.22 managed in CWA, CWA-equivalent, or Class I SDWA systems.	NA	DEACT	DEACT.
D003	NA	Reactive sulfides based on 261.23(a)(5).	NA	DEACT but not including dilution as a substitute for adequate treatment	DEACT but not including dilution as a substitute for adequate treatment.
D003	NA	Explosives based on 261.23(a)(6), (7), and (8).	NA	DEACT	DEACT.
D003	NA	Water reactives based on 261.23(a)(2), (3), and (4).	NA	NA	DEACT.
D003	NA	Other reactives based on 261.23(a)(1).	NA	DEACT	DEACT.
D006	NA	Cadmium containing batteries	7440-43-9	NA	RTHRM.
D008	NA	Lead acid batteries (Note: This standard only applies to lead acid batteries that are identified as RCRA hazardous wastes and that are not excluded elsewhere from regulation under the land disposal restrictions of 40 <i>CFR</i> 268 or exempted under other EPA regulations (see 40 <i>CFR</i> 266.80).)	7439-92-1	NA	RLEAD.

268.42 TABLE 2.—TECHNOLOGY-BASED STANDARDS BY RCRA WASTE CODE—Cont.

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituents	Technology code	
				Wastewaters	Nonwastewaters
D009	Table CCWE in 268.41 and Table CCW in 268.43.	Mercury: (High Mercury Subcategory—greater than or equal to 260 mg/kg total Mercury—contains mercury and organics (and are not incinerator residues)).	7439-97-6	NA	IMERC; or RMERC.
D009	Table CCWE in 268.41 and Table CCW in 268.43	Mercury: (High Mercury Subcategory—greater than or equal to 260 mg/kg total Mercury—inorganics (including incinerator residues and residues from RMERC)).	7439-97-6	NA	RMERC.
D012	Table CCW in 268.43	Endrin	72-20-8	BIODG; or INCIN	NA.
D013	Table CCW in 268.43	Lindane	58-89-9	CARBN; or INCIN	NA.
D014	Table CCW in 268.43	Methoxychlor	72-43-5	WETOX; or INCIN	NA.
D015	Table CCW in 268.43	Toxaphene	8001-35-1	BIODG; or INCIN	NA.
D016	Table CCW in 268.43	2,4-D	94-75-7	CHOXD; BIODG; or INCIN	NA.
D017	Table CCW in 268.43	2,4,5-TP	93-72-1	CHOXD; or INCIN	NA.
F005	Table CCWE in 268.41 and Table CCW in 268.43.	2-Nitropropane	79-46-9	(WETOX or CHOXD) fb CARBN; or INCIN	INCIN.
F005	Table CCWE in 268.41 and Table CCW in 268.43.	2-Ethoxyethanol	110-80-5	BIODG; or INCIN	INCIN.
F024	Table CCWE in 268.41 and Table CCW in 268.43.		NA	INCIN	INCIN.
K025	NA	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	NA	LLEXT fb SSTRP fb CARBN; or INCIN.	INCIN.
K026	NA	Stripping still tails from the production of methyl ethyl pyridines.	NA	INCIN	INCIN.
K027	NA	Centrifuge and distillation residues from toluene diisocyanate production.	NA	CARBN; or INCIN	FSUBS; or INCIN.
K039	NA	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.	NA	CARBN; or INCIN	FSUBS; or INCIN.
K044	NA	Wastewater treatment sludges from the manufacturing and processing of explosives.	NA	DEACT	DEACT.
K045	NA	Spent carbon from the treatment of wastewater containing explosives.	NA	DEACT	DEACT.
K047	NA	Pink/red water from TNT operations.	NA	DEACT	DEACT.
K069	Table CCWE in 268.41 and Table CCW in 268.43.	Emission control dust/sludge from secondary lead smelting: Non-Calcium Sulfate Subcategory.	NA	NA	RLEAD.
K106	Table CCWE in 268.41 and Table CCW in 268.43.	Wastewater treatment sludge from the mercury cell process in chlorine production: (High Mercury Subcategory—greater than or equal to 260 mg/kg total mercury).	NA	NA	RMERC.
K107		Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	INCIN; or CHOXD fb, CARBN; or BIODG fb CARBN.	INCIN.

268.42 TABLE 2.—TECHNOLOGY-BASED STANDARDS BY RCRA WASTE CODE—Cont.

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituents	Technology code	
				Wastewaters	Nonwastewaters
K108		Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	INCIN; or CHOXD fb, CARBN; or BIODG fb CARBN.	INCIN.
K109		Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	INCIN; or CHOXD fb, CARBN; or BIODG fb CARBN.	INCIN.
K110		Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	INCIN; or CHOXD fb, CARBN; or BIODG fb CARBN.	INCIN.
K112		Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	INCIN; or CHOXD fb, CARBN; or BIODG fb CARBN.	INCIN.
K113	NA	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	CARBN; or INCIN	FSUBS; or INCIN.
K114	NA	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	CARBN; or INCIN	FSUBS; or INCIN.
K115	NA	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	CARBN; or INCIN	FSUBS; or INCIN.
K116	NA	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.	NA	CARBN; or INCIN	FSUBS; or INCIN.
K123		Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salts.	NA	INCIN; or CHOXD fb (BIODG or CARBN).	INCIN.
K124		Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.	NA	INCIN; or CHOXD fb (BIODG or CARBN).	INCIN.
K125		Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	NA	INCIN; or CHOXD fb (BIODG or CARBN).	INCIN.
K126		Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylene bisdithiocarbamic acid and its salts.	NA	INCIN; or CHOXD fb (BIODG or CARBN).	INCIN.
P001	NA	Warfarin (>0.3%)	81-81-2	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
P002	NA	1-Acetyl-2-thiourea	591-08-2	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P003	NA	Acrolein	107-02-8	NA	FSUBS; or INCIN.
P005	NA	Allyl alcohol	107-18-6	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
P006	NA	Aluminum phosphide	20859-73-8	CHOXD; CHRED; or INCIN	CHOXD; CHRED; or INCIN.
P007	NA	5-Aminoethyl 3-isoxazolol	2763-96-4	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P008	NA	4-Aminopyridine	504-24-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.

268.42 TABLE 2.—TECHNOLOGY-BASED STANDARDS BY RCRA WASTE CODE—Cont.

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituents	Technology code	
				Wastewaters	Nonwastewaters
P009	NA	Ammonium picrate	131-74-8	CHOXD; CHRED, CARBN; BIODG; or INCIN.	FSUBS; CHOXD; CHRED; or INCIN.
P014	NA	Thiophenol (Benzene thiol)	108-98-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P015	NA	Beryllium dust	7440-41-7	RMETL; or RTHRM	RMETL; or RTHRM.
P016	NA	Bis(chloromethyl)ether	542-88-1	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P017	NA	Bromoacetone	598-31-2	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P018	NA	Brucine	357-57-3	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P022	Table CCW in 268.43	Carbon disulfide	75-15-0	NA	INCIN.
P023	NA	Chloroacetaldehyde	107-20-0	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P026	NA	1-(o-Chlorophenyl) thiourea	5344-82-1	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P027	NA	3-Chloropropionitrile	542-76-7	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P028	NA	Benzyl chloride	100-44-7	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P031	NA	Cyanogen	460-19-5	CHOXD; WETOX or INCIN	CHOXD; WETOX; or INCIN.
P033	NA	Cyanogen chloride	506-77-4	CHOXD; WETOX or INCIN	CHOXD; WETOX; or INCIN.
P034	NA	2-Cyclohexyl-4,6-dinitrophenol	131-89-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P040	NA	O,O-Diethyl O-pyrazinyl, phosphorothioate	297-97-2	CARB; or INCIN	FSUBS; or INCIN.
P041	NA	Diethyl-p-nitrophenyl phosphate	311-45-5	CARB; or INCIN	FSUBS; or INCIN.
P042	NA	Epinephrine	51-43-4	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P043	NA	Diisopropyl fluorophosphate (DFP)	55-91-4	CARB; or INCIN	FSUBS; or INCIN.
P044	NA	Dimethoate	60-51-5	CARB; or INCIN	FSUBS or INCIN.
P045	NA	Thiofanox	39196-18-4	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P046	NA	alpha, alpha-Dimethylphenethylamine	122-09-8	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P047	NA	4,6-Dinitro-o-cresol salts	534-52-1	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P049	NA	2,4-Dithiobiuret	541-53-7	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P054	NA	Aziridine	151-56-4	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P056	Table CCW in 268.43	Fluorine	7782-41-4	NA	ADGAS fb NEUTR.
P057	NA	Fluoroacetamide	640-19-7	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P058	NA	Fluoroacetic acid, sodium salt	62-74-8	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P062	NA	Hexaethyltetraphosphate	757-58-4	CARB; or INCIN	FSUBS; or INCIN.
P064	NA	Isocyanic acid, ethyl ester	624-83-9	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P065	Table CCWE in 268.41 and Table CCW in 268.43.	Mercury fulminate: (High Mercury Subcategory—greater than or equal to 260 mg/kg total Mercury—either incinerator residues or residues from RMERC).	628-86-4	NA	RMERC.
P065	Table CCWE in 268.41 and Table CCW in 268.43.	Mercury fulminate: (All Nonwastewaters that are not incinerator residues or are not residues from RMERC; regardless of Mercury Content).	628-86-4	NA	IMERC.

268.42 TABLE 2.—TECHNOLOGY-BASED STANDARDS BY RCRA WASTE CODE—Cont.

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituents	Technology code	
				Wastewaters	Nonwastewaters
P066	NA	Methomyl	16752-77-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P067	NA	2-Methylaziridine	75-55-8	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P068	NA	Methyl hydrazine	60-34-4	CHOXD; CHRED; CARBN; BIODG; or INCIN.	FSUBS; CHOXD; CHRED; or INCIN.
P069	NA	Methylactonitrile	75-86-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P070	NA	Aldicarb	116-06-3	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P072	NA	1-Naphthyl-2-thiourea	86-88-4	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P075	NA	Nicotine and salts	¹ 54-11-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P076	NA	Nitric oxide	10102-43-9	ADGAS	ADGAS.
P078	NA	Nitrogen dioxide	10102-44-0	ADGAS	ADGAS.
P081	NA	Nitroglycerin	55-63-0	CHOXD; CHRED; CARBN; BIODG; or INCIN.	FSUBS; CHOXD; CHRED; or INCIN.
P082	Table CCW in 268.43	N-Nitrosodimethylamine	62-75-9	NA	INCIN.
P084	NA	N-Nitrosomethylvinylamine	4549-40-0	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P085	NA	Octamethylpyrophosphoramide	152-16-9	CARBN; or INCIN.	FSUBS; or INCIN.
P087	NA	Osmium tetroxide	20816-12-0	RMETL; or RTHRM	RMETL; or RTHRM.
P088	NA	Endothall	145-73-3	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
P092	Table CCWE in 268.41 and Table CCW in 268.43.	Phenyl mercury acetate: (High Mercury Subcategory—greater than or equal to 260 mg/kg total Mercury—either incinerator residues or residues from RMERC).	62-38-4	NA	RMERC.
P092	Table CCWE in 268.41 and Table CCW in 268.43	Phenyl mercury acetate: (All nonwastewaters that are not incinerator residues and are not residues from RMERC; regardless of Mercury Content).	62-38-4	NA	IMERC; or RMERC.
P093	NA	N-Phenylthiourea	103-85-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P095	NA	Phosgene	75-44-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P096	NA	Phosphine	7803-51-2	CHOXD; CHRED; or INCIN.	CHOXD; CHRED; or INCIN.
P102	NA	Propargyl alcohol	107-19-7	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
P105	NA	Sodium azide	26628-22-8	CHOXD; CHRED; CARBN; BIODG; or INCIN.	FSUBS; CHOXD; CHRED; or INCIN.
P108	NA	Strychnine and salts	¹ 57-24-9	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P109	NA	Tetraethyldithiopyrophosphate	3689-24-5	CARBN; or INCIN.	FSUBS; or INCIN.
P112	NA	Tetranitromethane	509-14-8	CHOXD; CHRED; CARBN; BIODG; or INCIN.	FSUBS; CHOXD; CHRED; or INCIN.
P113	Table CCW in 268.43	Thallic oxide	1314-32-5	NA	RTHRM; or STABL.
P115	Table CCW in 268.43	Thallium (1) sulfate	7446-18-6	NA	RTHRM; or STABL.
P116	NA	Thiosemicarbazide	79-19-6	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
P118	NA	Trichloromethanethiol	75-70-7	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.

268.42 TABLE 2.—TECHNOLOGY-BASED STANDARDS BY RCRA WASTE CODE—Cont.

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituents	Technology code	
				Wastewaters	Nonwastewaters
P119	Table CCW in 268.43	Ammonium vanadate	7803-55-6	NA	STABL.
P120	Table CCW in 268.43	Vanadium pentoxide	1314-62-1	NA	STABL.
P122	NA	Zinc Phosphide (>10%)	1314-84-7	CHOXD; CHRED; or INCIN.	CHOXD; CHRED; or INCIN.
U001	NA	Acetaldehyde	75-07-0	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U003	Table CCW in 268.43	Acetonitrile	75-05-8	NA	INCIN.
U006	NA	Acetyl Chloride	75-36-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U007	NA	Acrylamide	79-06-1	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U008	NA	Acrylic acid	79-10-7	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U010	NA	Mitomycin C	50-07-7	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U011	NA	Amitrole	61-82-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U014	NA	Auramine	492-80-8	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U015	NA	Azaserine	115-02-6	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U016	NA	Benz(c)acridine	225-51-4	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U017	NA	Benzal chloride	98-87-3	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U020	NA	Benzenesulfonyl chloride	98-09-9	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U021	NA	Benzidine	92-87-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U023	NA	Benzotrichloride	98-07-7	CHOXD; CHRED; CARBN; BIODG; or INCIN.	FSUBS; CHOXD; CHRED; or INCIN.
U026	NA	Chlomaphazin	494-03-1	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U033	NA	Carbonyl fluoride	353-50-4	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U034	NA	Trichloroacetaldehyde (Chloral)	75-87-6	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U035	NA	Chlorambucil	305-03-3	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U038	Table CCW in 268.43	Chlorobenzilate	510-15-6	NA	INCIN.
U041	NA	1-Chloro-2,3-epoxypropane (Epichlorohydrin)	106-89-8	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U042	Table CCW in 268.43	2-Chloroethyl vinyl ether	110-75-8	NA	INCIN.
U046	NA	Chloromethyl methyl ether	107-30-2	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U049	NA	4-Chloro-o-toluidine hydrochloride	3165-93-3	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U053	NA	Crotonaldehyde	4170-30-3	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U055	NA	Cumene	98-82-8	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U056	NA	Cyclohexane	110-82-7	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U057	Table CCW in 268.43	Cyclohexanone	108-94-1	NA	FSUBS; or INCIN.
U058	NA	Cyclophosphamide	50-18-0	CARBN; or INCIN	FSUBS; or INCIN.

268.42 TABLE 2.—TECHNOLOGY-BASED STANDARDS BY RCRA WASTE CODE—Cont.

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituents	Technology code	
				Wastewaters	Nonwastewaters
U059	NA	Daunomycin	20830-81-3	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U062	NA	Diallate	2303-16-4	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U064	NA	1,2,7,8-Dibenzopyrene	189-55-9	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U073	NA	3,3'-Dichlorobenzidine	91-94-1	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U074	NA	cis-1,4-Dichloro-2-butylene	1476-11-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
		trans-1,4-Dichloro-2-butylene		WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U085	NA	1,2:3,4-Diepoxybutane	1464-53-5	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U086	NA	N,N-Diethylhydrazine	1615—80-1	CHOXD; CHRED; CARBN; BIODG; or INCIN.	FSUBS; CHOXD; CHRED; or INCIN.
U087	NA	0,0-Diethyl S-methyldithiophosphate	3288-58-2	CARBN; or INCIN	FSUBS; or INCIN.
U089	NA	Diethyl stilbestrol	56-53-1	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U090	NA	Dihydrosafrole	94-58-6	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U091	NA	3,3'-Dimethoxybenzidine	119-90-4	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U092	NA	Dimethylamine	124-40-3	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U093	Table CCW in 268.43	p-Dimethylaminoazobenzene	621-90-9	NA	INCIN.
U094	NA	7,12-Dimethyl benz(a)anthracene	57-97-6	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U095	NA	3,3'-Dimethylbenzidine	119-93-7	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U096	NA	a,a-Dimethyl benzyl hydroperoxide	80-15-9	CHOXD; CHRED; CARBN; BIODG; or INCIN.	FSUBS; CHOXD; CHRED; or INCIN.
U097	NA	Dimethylcarbonyl chloride	79-44-7	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U098	NA	1,1-Dimethylhydrazine	57-14-7	CHOXD; CHRED; CARBN; BIODG; or INCIN.	FSUBS; CHOXD; CHRED; or INCIN.
U099	NA	1,2-Dimethylhydrazine	540-73-8	CHOXD; CHRED; CARBN; BIODG; or INCIN.	FSUBS; CHOXD; CHRED; or INCIN.
U103	NA	Dimethyl sulfate	77-78-1	CHOXD; CHRED; CARBN; BIODG; or INCIN.	FSUBS; CHOXD; CHRED; or INCIN.
U109	NA	1,2-Diphenylhydrazine	122-66-7	CHOXD; CHRED; CARBN; BIODG; or INCIN.	FSUBS; CHOXD; CHRED; or INCIN.
U110	NA	Dipropylamine	142-84-7	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U113	NA	Ethyl acrylate	140-88-5	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U114	NA	Ethylene bis-dithiocarbamic acid	111-54-6	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U115	NA	Ethylene oxide	75-21-8	(WETOX or CHOXD) fb CARBN; or INCIN.	CHOXD; or INCIN.
U116	NA	Ethylene thiourea	96-45-7	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U119	NA	Ethyl methane sulfonate	62-50-0	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U122	NA	Formaldehyde	50-00-0	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.

268.42 TABLE 2.—TECHNOLOGY-BASED STANDARDS BY RCRA WASTE CODE—Cont.

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituents	Technology code	
				Wastewaters	Nonwastewaters
U123	NA	Formic acid	64-18-6	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U124	NA	Furan	110-00-9	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U125	NA	Furfural	98-01-1	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U126	NA	Glycidaldehyde	765-34-4	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U132	NA	Hexachlorophenene	70-30-4	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U133	NA	Hydrazine	302-01-2	CHOXD; CHRED; CARBN; BIODG; or INCIN.	FSUBS; CHOXD; CHRED; or INCIN.
U134	Table CCW in 268.43	Hydrogen Flouride	7664-39-3	NA	ADGAS fb NEUTR; or NEUTR.
U135	NA	Hydrogen Sulfide	7783-06-4	CHOXD; CHRED; or INCIN	CHOXD; CHRED; or INCIN.
U143	NA	Lasiocarpine	303-34-4	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U147	NA	Maleic anhydride	108-31-6	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U148	NA	Maleic hydrazide	123-33-1	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U149	NA	Malononitrile	109-77-3	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U150	NA	Melphalan	148-82-3	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U151	Table CCWE in 268.41 and Table CCW in 268.43	Mercury: (High Mercury Subcategory—greater than or equal to 260 mg/kg total Mercury).	7439-97-6	NA	RMERC.
U153	NA	Methane thiol	74-93-1	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U154	NA	Methanol	67-56-1	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U156	NA	Methyl chlorocarbonate	79-22-1	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U160	NA	Methyl ethyl ketone peroxide	1338-23-4	CHOXD; CHRED; CARBN; BIODG; or INCIN.	FSUBS; CHOXD; CHRED; or INCIN.
U163	NA	N-Methyl N'-nitro N-Nitrosoguanidine	70-25-7	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U164	NA	Methylthiouracil	56-04-2	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U166	NA	1,4-Naphthoquinone	130-15-4	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U167	NA	1-Naphthylamine	134-32-7	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U168	Table CCW in 268.43	2-Naphthylamine	91-59-8	NA	INCIN.
U171	NA	2-Nitropropane	79-46-9	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U173	NA	N-Nitroso-di-n-ethanolamine	1116-54-7	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U176	NA	N-Nitroso-N-ethylurea	759-73-9	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U177	NA	N-Nitroso-N-methylurea	684-93-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U178	NA	N-Nitroso-N-methylurethane	615-53-2	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U182	NA	Paraldehyde	123-63-7	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.

268.42 TABLE 2.—TECHNOLOGY-BASED STANDARDS BY RCRA WASTE CODE—Cont.

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituents	Technology code	
				Wastewaters	Nonwastewaters
U184	NA	Pentachloroethane	76-01-7	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U186	NA	1,3-Pentadiene	504-60-9	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U189	NA	Phosphorus sulfide	1314-80-3	CHOXD; CHRED; or INCIN	CHOXD; CHRED; or INCIN.
U191	NA	2-Picoline	109-06-8	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U193	NA	1,3-Propane sultone	1120-71-4	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U194	NA	n-Propylamine	107-10-8	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U197	NA	p-Benzoquinone	106-51-4	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U200	NA	Reserpine	50-55-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U201	NA	Resorcinol	108-46-3	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U202	NA	Saccharin and salts	¹ 81-07-2	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U206	NA	Streptozotocin	18883-66-4	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U213	NA	Tetrahydrofuran	109-99-9	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U214	Table CCW in 268.43	Thallium (I) acetate	563-68-8	NA	RTHRM; or STABL.
U215	Table CCW in 268.43	Thallium (I) carbonate	6533-73-9	NA	RTHRM; or STABL.
U216	Table CCW in 268.43	Thallium (I) chloride	7791-12-0	NA	RTHRM; or STABL.
U217	Table CCW in 268.43	Thallium (I) nitrate	10102-45-1	NA	RTHRM; or STABL.
U218	NA	Thioacetamide	62-55-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U219	NA	Thiourea	62-56-6	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U221	NA	Toluenediamine	25376-45-8	CARBN; or INCIN	FSUBS; or INCIN.
U222	NA	o-Toluidine hydrochloride	636-21-5	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U223	NA	Toluene diisocyanate	26471-62-5	CARBN; or INCIN	FSUBS; or INCIN.
U234	NA	sym-Trinitrobenzene	99-35-4	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U236	NA	Trypan Blue	72-57-1	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U237	NA	Uracil mustard	66-75-1	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U238	NA	Ethyl carbamate	51-79-6	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U240	NA	2,4-Dichlorophenoxyacetic (salts and esters)	¹ 94-75-7	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U244	NA	Thiram	137-26-8	(WETOX or CHOXD) fb CARBN; or INCIN.	INCIN.
U246	NA	Cyanogen bromide	506-68-3	CHOXD; WETOX; or INCIN	CHOXD; WETOX; or INCIN.
U248	NA	Warfarin (.3% or less)	81-81-2	(WETOX or CHOXD) fb CARBN; or INCIN.	FSUBS; or INCIN.
U249	NA	Zinc Phosphide (<10%)	1314-84-7	CHOXD; CHRED; or INCIN	CHOXD; CHRED; or INCIN.
U328		o-toluidine	95-53-4	INCIN; or CHOXD fb, (BIODG or CARBN); or BIODG fb CARBN.	INCIN; or Thermal Destruction.

268.42 TABLE 2.—TECHNOLOGY-BASED STANDARDS BY RCRA WASTE CODE—Cont.

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituents	Technology code	
				Wastewaters	Nonwastewaters
U353		p-toluidine	106-49-0	INCIN; or CHOXD fb, (BIODG or CARBN); or BIODG fb CARBN.	INCIN; or Thermal Destruction.
U359		2-ethoxy-ethanol	110-80-5	INCIN; or CHOXD fb, (BIODG or CARBN); or BIODG fb CARBN.	INCIN; or FSUBS.

¹ CAS Number given for parent compound only.

² This waste code exists in gaseous form and is not categorized as wastewater or nonwastewater forms.

Note: NA means Not Applicable.

**TABLE 1.—TECHNOLOGY CODES AND DESCRIPTION
OF TECHNOLOGY-BASED STANDARDS**

Technology code	Description of technology-based standards
ADGAS:	Venting of compressed gases into an absorbing or reacting media (i.e., solid or liquid)—venting can be accomplished through physical release utilizing valves/piping; physical penetration of the container; and/or penetration through detonation.
AMLGM:	Amalgamation of liquid, elemental mercury contaminated with radioactive materials utilizing inorganic reagents such as copper, zinc, nickel, gold, and sulfur that result in a nonliquid, semi-solid amalgam and thereby reducing potential emissions of elemental mercury vapors to the air.
BIODG:	Biodegradation of organics or non-metallic inorganics (i.e., degradable inorganics that contain the elements of phosphorus, nitrogen, and sulfur) in units operated under either aerobic or anaerobic conditions such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Carbon can often be used as an indicator parameter for the biodegradation of many organic constituents that cannot be directly analyzed in wastewater residues).
CARBN:	Carbon adsorption (granulated or powdered) of non-metallic inorganics, organo-metallics, and/or organic constituents, operated such that a surrogate compound or indicator parameter has not undergone breakthrough (e.g., Total Organic Carbon can often be used as an indicator parameter for the adsorption of many organic constituents that cannot be directly analyzed in wastewater residues). Breakthrough occurs when the carbon has become saturated with the constituent (or indicator parameter) and substantial change in adsorption rate associated with that constituent occurs.
CHOXD:	Chemical or electrolytic oxidation utilizing the following oxidation reagents (or waste reagents) or combinations of reagents: (1) Hypochlorite (e.g. bleach); (2) chlorine; (3) chlorine dioxide; (4) ozone or UV (ultraviolet light) assisted ozone; (5) peroxides; (6) persulfates; (7) perchlorates; (8) permangantes; and/or (9) other oxidizing reagents of equivalent efficiency, performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Carbon can often be used as an indicator parameter for the oxidation of many organic constituents that cannot be directly analyzed in wastewater residues). Chemical oxidation specifically includes what is commonly referred to as alkaline chlorination.
CHRED:	Chemical reduction utilizing the following reducing reagents (or waste reagents) or combinations of reagents: (1) Sulfur dioxide; (2) sodium, potassium, or alkali salts or sulfites, bisulfites, metabisulfites, and polyethylene glycols (e.g., NaPEG and KPEG); (3) sodium hydrosulfide; (4) ferrous salts; and/or (5) other reducing reagents of equivalent efficiency, performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Halogens can often be used as an indicator parameter for the reduction of many halogenated organic constituents that cannot be directly analyzed in wastewater residues). Chemical reduction is commonly used for the reduction of hexavalent chromium to the trivalent state.
DEACT:	Deactivation to remove the hazardous characteristics of a waste due to is ignitability, corrosivity, and/or reactivity.
FSUBS:	Fuel substitution in units operated in accordance with applicable technical operating requirements.

**TABLE 1.—TECHNOLOGY CODES AND DESCRIPTION
OF TECHNOLOGY-BASED STANDARDS—Continued**

Technology code	Description of technology-based standards
HLVIT:	Vitrification of high level mixed radioactive wastes in units in compliance with all applicable radioactive protection requirements under control of the Nuclear Regulatory Commission.
IMERC:	Incineration of wastes containing organics and mercury in units operated in accordance with the technical operating requirements of 40 <i>CFR</i> part 264 subpart 0 and part 265 subpart 0. All wastewater and nonwastewater residues derived from this process must then comply with the corresponding treatment standards per waste code with consideration of any applicable subcategories (e.g., High or Low Mercury Subcategories).
INCIN:	Incineration in units operated in accordance with the technical operating requirements of 40 <i>CFR</i> part 264 subpart 0 and part 265 subpart 0.
LLEXT:	Liquid-liquid extraction (often referred to as solvent extraction) of organics from liquid wastes into an immiscible solvent for which the hazardous constituents have a greater solvent affinity, resulting in an extract high in organics that must undergo either incineration, reuse as a fuel, or other recovery/reuse and a raffinate (extracted liquid waste) proportionately low in organics that must undergo further treatment as specified in the standard.
MACRO:	Macroencapsulation with surface coating materials such as polymeric organics (e.g. resins and plastics) or with a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media. Macroencapsulation specifically does not include any material that would be classified as a tank or container according to 40 <i>CFR</i> 260.10.
NEUTR:	Neutralization with the following reagents (or waste reagents) or combinations of reagents: (1) Acids; (2) bases; or (3) water (including wastewaters) resulting in a pH greater than 2 but less than 12.5 as measured in the aqueous residuals.
NLDBR:	No land disposal based on recycling.
PRECP:	Chemical precipitation of metals and other inorganics as insoluble precipitates of oxides, hydroxides, carbonates, sulfides, sulfates, chlorides, fluorides, or phosphates. The following reagents (or waste reagents) are typically used alone or in combination: (1) Lime (i.e., containing oxides and/or hydroxides of calcium and/or magnesium); (2) caustic (i.e., sodium and/or potassium hydroxides); (3) soda ash (i.e., sodium carbonate); (4) sodium sulfide; (5) ferric sulfate or ferric chloride; (6) alum; or (7) sodium sulfate. Additional flocculating, coagulation or similar reagents/processes that enhance sludge dewatering characteristics are not precluded from use.
RBERY:	Thermal recovery of Beryllium.
RCGAS:	Recovery/reuse of compressed gases including techniques such as reprocessing of the gases for reuse/resale; filtering/adsorption of impurities; remixing for direct reuse or resale; and use of the gas as a fuel source.
RCORR:	Recovery of acids or bases utilizing one or more of the following recovery technologies: (1) Distillation (i.e., thermal concentration); (2) ion exchange; (3) resin or solid adsorption; (4) reverse osmosis; and/or (5) incineration for the recovery of acid—Note: this does not preclude the use of other physical phase separation or concentration techniques such as decantation, filtration (including ultrafiltration), and centrifugation, when used in conjunction with the above listed recovery technologies.
RLEAD:	Thermal recovery of lead in secondary lead smelters.
RMERC:	Retorting or roasting in a thermal processing unit capable of volatilizing mercury and subsequently condensing the volatilized mercury for recovery. The retorting or roasting unit (or facility) must be subject to one or more of the following: (a) a National Emissions Standard for Hazardous Air Pollutants (NESHAP) for mercury; (b) a Best Available Control Technology (BACT) or a Lowest Achievable Emission Rate (LAER) standard for mercury imposed pursuant to a Prevention of Significant Deterioration (PSD) permit; or (c) a state permit that establishes emission limitations (within meaning of section 302 of the Clean Air Act) for mercury. All wastewater and nonwastewater residues derived from this process must then comply with the corresponding treatment standards per waste code with consideration of any applicable subcategories (e.g., High or Low Mercury Subcategories).
RMETL:	Recovery of metals or inorganics utilizing one or more of the following direct physical/removal technologies: (1) Ion exchange; (2) resin or solid (i.e., zeolites) adsorption; (3) reverse osmosis; (4) chelation/solvent extraction; (5) freeze crystallization; (6) ultrafiltration and/or (7) simple precipitation (i.e., crystallization)—Note: This does not preclude the use of other physical phase separation or concentration techniques such as decantation, filtration (including ultrafiltration), and centrifugation, when used in conjunction with the above listed recovery technologies.
RORGS:	Recovery of organics utilizing one or more of the following technologies: (1) Distillation; (2) thin film evaporation; (3) steam stripping; (4) carbon adsorption; (5) critical fluid extraction; (6) liquid-liquid extraction; (7) precipitation/crystallization (including freeze crystallization); or (8) chemical phase separation techniques (i.e., addition of acids, bases, demulsifiers, or similar chemicals)—Note: this does not preclude the use of other physical phase separation techniques such as a decantation, filtration (including ultrafiltration), and centrifugation, when used in conjunction with the above listed recovery technologies.
RTHRM:	Thermal recovery of metals or inorganics from nonwastewaters in units identified as industrial furnaces according to 40 <i>CFR</i> 260.10 (1), (6), (7), (11), and (12) under the definition of "industrial furnaces".
RZINC:	Resmelting in high temperature metal recovery units for the purpose of recovery of zinc.
STABL:	Stabilization with the following reagents (or waste reagents) or combinations of reagents: (1) Portland cement; or (2) lime/pozzolans (e.g., fly ash and cement kiln dust)—this does not preclude the addition of reagents (e.g., iron salts, silicates, and clays) designed to enhance the set/cure time and/or compressive strength, or to overall reduce the leachability of the metal or inorganic.
SSTRP:	Steam stripping of organics from liquid wastes utilizing direct application of steam to the wastes operated such that liquid and vapor flow rates, as well as, temperature and pressure ranges have been optimized, monitored, and maintained. These operating parameters are dependent upon the design parameters of the unit such as, the number of separation stages and the internal column design. Thus, resulting in a condensed extract high in organics that must undergo either incineration, reuse as a fuel, or other recovery/reuse and an extracted wastewater that must undergo further treatment as specified in the standard.

**TABLE 1.—TECHNOLOGY CODES AND DESCRIPTION
OF TECHNOLOGY-BASED STANDARDS—Continued**

Technology code	Description of technology-based standards
WETOX:	Wet air oxidation performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Carbon can often be used as an indicator parameter for the oxidation of many organic constituents that cannot be directly analyzed in wastewater residues).
WTRRX:	Controlled reaction with water for highly reactive inorganic or organic chemicals with precautionary controls for protection of workers from potential violent reactions as well as precautionary controls for potential emissions of toxic/ignitable levels

**BEST DEMONSTRATED AVAILABLE TECHNOLOGIES (BDAT)
FOR TREATMENT OF HAZARDOUS WASTE**

Note: The processes described in this table are the prescribed (not necessarily required) treatment technologies for the hazardous waste codes shown in the far left column. Off-site facilities treating waste will use (almost always) the processes indicated in this table for waste codes shown in it.

TABLE 6.2
BDAT TECHNOLOGIES FOR WASTES SUBJECT
TO A CONCENTRATION-BASED TREATMENT STANDARD¹

Waste description	Best demonstrated available technologies (BDAT)	
	Nonwastewater	Wastewater
D003 (Reactive cyanides)	Alkaline chlorination, wet air oxidation, or electrolytic oxidation	Alkaline chlorination, wet air oxidation, or electrolytic oxidation
D004	Vitrification	Chemical precipitation
D005	Stabilization	Chemical precipitation
D006	Stabilization or metal recovery	Chemical precipitation
D007	Chromium reduction, stabilization	Chromium reduction, precipitation
D008	Stabilization	Chemical precipitation, sludge dewatering
D009 (<260 mg/kg total mercury)	Acid leaching followed by chemical precipitation, dewatering	Chemical precipitation with sulfide
D009 (≥ 260 mg/kg total mercury)	(Treatment method specified)	Chemical precipitation with sulfide
D010	Stabilization	Chemical precipitation with sulfide
D011	Stabilization or recovery	Chemical precipitation
D012	Incineration	(Treatment method specified)
D013	Incineration	(Treatment method specified)
D014	Incineration	(Treatment method specified)
D015	Incineration	(Treatment method specified)
D016	Incineration	(Treatment method specified)
D017	Incineration	(Treatment method specified)
F001		
Carbon tetrachloride	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Methylene chloride	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Tetrachloroethylene	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
1,1,1-Trichloroethane	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Trichloroethylene	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
1,1,2-Trichloro-1,2,2-trifluoroethane	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Trichlorofluoromethane	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
F002		
Chlorobenzene	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
o-Dichlorobenzene	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Methylene chloride	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Methylene chloride (from the pharmaceutical industry)	Incineration	Steam stripping
Tetrachloroethylene	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption

TABLE 6.2
BDAT TECHNOLOGIES FOR WASTES SUBJECT
TO A CONCENTRATION-BASED TREATMENT STANDARD¹—Continued

Waste description	Best demonstrated available technologies (BDAT)	
	Nonwastewater	Wastewater
1,1,1-Trichloroethane	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
1,1,2-Trichloroethane	Incineration	Biological treatment, liquid-liquid extraction, steam stripping, carbon adsorption
Trichloroethylene	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
1,1,2-Trichloro-1,2,2-trifluoroethane	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Trichlorofluoromethane	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
F003		
Acetone	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
n-Butyl alcohol	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Cyclohexanone	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Ethyl acetate	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Ethyl benzene	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Ethyl ether	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Methanol	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Methyl isobutyl ketone	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Xylene	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
F004		
Cresol (m-, o-, and p-isomers)	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Nitrobenzene	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
F005		
Benzene	Incineration	Biological treatment, liquid-liquid extraction, steam stripping, carbon adsorption
Carbon disulfide	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
2-Ethoxyethanol	(Treatment method specified)	(Treatment method specified)
Isobutylalcohol	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Methyl ethyl ketone	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
2-Nitropropane	(Treatment method specified)	(Treatment method specified)
Pyridine	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
Toluene	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption

TABLE 6.2
BDAT TECHNOLOGIES FOR WASTES SUBJECT
TO A CONCENTRATION-BASED TREATMENT STANDARD¹—Continued

Waste description	Best demonstrated available technologies (BDAT)	
	Nonwastewater	Wastewater
F006	Alkaline chlorination (cyanides); chemical precipitation, settling, filtration, and stabilization (metals) Alternative standards based on high-temperature metals recovery	Alkaline chlorination (cyanides); chromium reduction, precipitation with lime and sulfides, sludge dewatering (metals)
F007	Alkaline chlorination (cyanides); chemical precipitation, settling, filtration, and stabilization (metals)	Alkaline chlorination (cyanides); chemical precipitation, settling, sludge dewatering (metals)
F008	Alkaline chlorination (cyanides); chemical precipitation, settling, filtration, and stabilization (metals)	Alkaline chlorination (cyanides); chemical precipitation, settling, sludge dewatering (metals)
F009	Alkaline chlorination (cyanides); chemical precipitation, settling, filtration, and stabilization (metals)	Alkaline chlorination (cyanides); chemical precipitation, settling, sludge dewatering (metals)
F010	Incineration (cyanides)	Alkaline chlorination (cyanides); chemical precipitation, settling, sludge dewatering (metals)
F011	Electrolytic oxidation followed by alkaline chlorination (cyanides); chemical precipitation, settling, filtration, and stabilization (metals)	Alkaline chlorination (cyanides); chemical precipitation, settling, sludge dewatering (metals)
F012	Electrolytic oxidation followed by alkaline chlorination (cyanides); chemical precipitation, settling, filtration, and stabilization (metals)	Alkaline chlorination (cyanides); chemical precipitation, settling, sludge dewatering (metals)
F019	Alkaline chlorination (cyanides); stabilization (chromium)	Alkaline chlorination (cyanides); chromium reduction, chemical precipitation with lime and sulfides, sludge dewatering (metals)
F020-23	Incineration	Incineration
F024	Rotary kiln incineration; stabilization of incinerator ash (metals)	(Treatment method specified)
F025 (Light ends subcategory)	Incineration	Incineration
F025 (Spent filters/aids and desiccants subcategory)	Incineration	Incineration
F026-28	Incineration	Incineration
F037	Solvent extraction or incineration (organics); incineration (cyanides); stabilization (metals)	Biological treatment or wet-air oxidation followed by carbon adsorption (organics); incineration (cyanides); chromium reduction, chemical precipitation, vacuum filtration (metals)
F038	Solvent extraction or incineration (organics); incineration (cyanides); stabilization (metals)	Biological treatment or wet-air oxidation followed by carbon adsorption (organics); incineration (cyanides); chromium reduction, chemical precipitation, vacuum filtration (metals)

TABLE 6.2
BDAT TECHNOLOGIES FOR WASTES SUBJECT
TO A CONCENTRATION-BASED TREATMENT STANDARD¹—Continued

Waste description	Best demonstrated available technologies (BDAT)	
	Nonwastewater	Wastewater
F039	Incineration (organics); stabilization (metals)	Biological treatment followed by chemical precipitation; or wet-air oxidation followed by carbon adsorption followed by chemical precipitation
K001	Rotary kiln incineration, followed by stabilization of the ash	Chemical precipitation
K002	Chemical precipitation, filtration, sludge dewatering (metals)	Chromium reduction, precipitation, sludge dewatering (metals)
K003	Chemical precipitation, filtration, sludge dewatering (metals)	Chromium reduction, precipitation, sludge dewatering (metals)
K004	Chemical precipitation, filtration, sludge dewatering (metals)	Chromium reduction, precipitation, sludge dewatering (metals)
K005	Chemical precipitation, filtration, sludge dewatering (metals)	Chromium reduction, precipitation, sludge dewatering (metals); alkaline chlorination (cyanides)
K006	Chemical precipitation, filtration; stabilization (chromium)	Chromium reduction, precipitation, sludge dewatering (metals)
K007	Chemical precipitation, filtration, sludge dewatering (metals)	Chromium reduction, precipitation, sludge dewatering (metals); alkaline chlorination (cyanides)
K008	Chemical precipitation, filtration, sludge dewatering (metals)	Chromium reduction, precipitation, sludge dewatering (metals)
K009	Rotary kiln incineration	Steam stripping followed by biological treatment
K010	Rotary kiln incineration	Steam stripping followed by biological treatment
K011	Incineration	Wet-air oxidation
K013	Incineration	Wet-air oxidation
K014	Incineration	Wet-air oxidation
K015	Incineration (organics), stabilization (metals)	Biological treatment or wet-air oxidation followed by carbon adsorption (organics) ³
K016	Rotary kiln incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
K017	Incineration	Incineration
K018	Rotary kiln incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
K019	Rotary kiln incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
K020	Rotary kiln incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
K021	Incineration (organics) and stabilization (inorganics)	Incineration (organics), chemical precipitation (inorganics)
K022	Incineration or fuel substitution, solidification of ash	Biological treatment, steam stripping, carbon adsorption, or liquid extraction (organics); chemical precipitation (metals)

TABLE 6.2
BDAT TECHNOLOGIES FOR WASTES SUBJECT
TO A CONCENTRATION-BASED TREATMENT STANDARD¹—Continued

Waste description	Best demonstrated available technologies (BDAT)	
	Nonwastewater	Wastewater
K023	Rotary kiln incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
K024	Incineration or fuel substitution, solidification of ash	Biological treatment or wet-air oxidation followed by carbon adsorption
K028	Rotary kiln incineration (organics); stabilization (metals)	Biological treatment or wet-air oxidation followed by carbon adsorption (organics); sulfide precipitation followed by settling, filtration and dewatering (metals)
K029	Rotary kiln incineration	(No BDAT identified for organics)
K030	Rotary kiln incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
K031	Vitrification	Chemical precipitation
K032	Incineration	(No BDAT identified for organics)
K033	Incineration	(No BDAT identified for organics)
K034	Incineration	(No BDAT identified for organics)
K035	Incineration	Biological treatment, steam stripping, carbon adsorption, or liquid extraction
K036	Incineration	Biological treatment
K037	Rotary kiln incineration	Biological treatment
K038	Rotary kiln incineration	Biological treatment
K040	Rotary kiln incineration	Biological treatment
K041	Incineration	(No BDAT identified for organics)
K042	Incineration	(No BDAT identified for organics)
K043	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
K046 (Nonreactive subcategory)	Stabilization	Alkaline precipitation, settling, filtration
K046 (Reactive subcategory)	Deactivation followed by stabilization	Alkaline precipitation, settling, filtration
K048	Solvent extraction or incineration (organics), stabilization of ash	Biological treatment or wet-air oxidation followed by carbon adsorption (organics); incineration (cyanides); chromium reduction, chemical precipitation, vacuum filtration (metals)
K049	Solvent extraction or incineration (organics), stabilization of ash	Biological treatment or wet-air oxidation followed by carbon adsorption (organics); incineration (cyanides); chromium reduction, chemical precipitation, vacuum filtration (metals)
K050	Solvent extraction or incineration (organics), stabilization of ash	Biological treatment or wet-air oxidation followed by carbon adsorption (organics); incineration (cyanides); chromium reduction, chemical precipitation, vacuum filtration (metals)
K051	Solvent extraction or incineration (organics), stabilization (lead)	Biological treatment or wet-air oxidation followed by carbon adsorption (organics); incineration (organics); chemical precipitation (lead); chromium reduction, chemical precipitation, vacuum filtration (chromium)

TABLE 6.2
BDAT TECHNOLOGIES FOR WASTES SUBJECT
TO A CONCENTRATION-BASED TREATMENT STANDARD¹—Continued

Waste description	Best demonstrated available technologies (BDAT)	
	Nonwastewater	Wastewater
K052	Solvent extraction or incineration (organics), stabilization of ash	Biological treatment or wet-air oxidation followed by carbon adsorption (organics); incineration (cyanides); chromium reduction, chemical precipitation, vacuum filtration (metals)
K060 K061	Incineration High-temperature metals recovery ⁴	Biological treatment Chromium reduction, chemical precipitation with lime and sulfides, sludge dewatering; chemical precipitation with magnesium hydroxide, filtration (lead)
K062	Chromium reduction, chemical precipitation, filtration, sludge dewatering. Alternative standards based on high-temperature metals recovery	— ²
K069 (Calcium sulfate subcategory)	Stabilization	Chemical precipitation with lime and sulfides (cadmium); chemical precipitation with magnesium hydroxide (lead)
K069 (Non-calcium sulfate subcategory)	(Treatment method specified)	Chemical precipitation with lime and sulfides (cadmium); chemical precipitation with magnesium hydroxide (lead)
K071	Acid leaching, chemical oxidation, dewatering	Sulfide precipitation, filtration
K073	Incineration	(No BDAT identified for organics)
K083	Incineration (organics), stabilization (metals)	Biological treatment, steam stripping, carbon adsorption, or liquid extraction (organics); chemical precipitation (metals)
K084	Vitrification	Chemical precipitation
K085	Incineration	(No BDAT identified for organics)
K086	Incineration (organics); chromium reduction, lime precipitation, filtration (metals)	(No BDAT identified for organics); chromium reduction, lime precipitation, filtration (metals); alkaline chlorination (cyanides)
K087	Rotary kiln incineration, stabilization of ash	Biological treatment or wet-air oxidation followed by carbon adsorption (organics); chemical precipitation, filtration (metals)
K093	Rotary kiln incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
K094	Rotary kiln incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
K095	Rotary kiln incineration	(No BDAT identified for organics)
K096	Rotary kiln incineration	(No BDAT identified for organics)
K097	Incineration	(No BDAT identified for organics)
K098	Incineration	(No BDAT identified for organics)
K099	Chlorine oxidation	— ²
K100	Stabilization	Chromium reduction, lime and sulfide precipitation (cadmium and chromium); chemical precipitation with magnesium hydroxide (lead)

TABLE 6.2
BDAT TECHNOLOGIES FOR WASTES SUBJECT
TO A CONCENTRATION-BASED TREATMENT STANDARD¹—Continued

Waste description	Best demonstrated available technologies (BDAT)	
	Nonwastewater	Wastewater
K101	Vitrification	Chemical precipitation
K102	Vitrification	Chemical precipitation
K103	Solvent extraction, followed by steam stripping, followed by carbon adsorption	— ²
K104	Solvent extraction, followed by incineration, followed by carbon adsorption, followed by carbon regeneration	— ²
K105	Incineration	(No BDAT identified for organics)
K106 (<260 mg/kg total mercury)	Acid leaching and chemical precipitation	Chemical precipitation with sulfides
K106 (≥ 260 mg/kg total mercury)	(Treatment method specified)	Chemical precipitation with sulfides
K111	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
K115	Stabilization (nickel)	— ²
K117	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
K118	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
K131	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
K132	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
K136	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
P004	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
P010	Vitrification	Chemical precipitation
P011	Vitrification	Chemical precipitation
P012	Vitrification	Chemical precipitation
P013	Electrolyte oxidation followed by alkaline chlorination (cyanides); stabilization (metals)	Chemical precipitation
P020	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
P021	Electrolytic oxidation followed by alkaline chlorination (cyanides); chemical precipitation, settling, filtration (metals)	Alkaline chlorination (cyanides); chemical precipitation, settling and sludge dewatering (metals)
P022	(Treatment method specified)	Biological treatment or wet-air oxidation followed by carbon adsorption
P024	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
P029	Electrolytic oxidation followed by alkaline chlorination (cyanides); chemical precipitation, settling, filtration (metals)	Alkaline chlorination (cyanides); chemical precipitation, settling and sludge dewatering (metals)

TABLE 6.2
BDAT TECHNOLOGIES FOR WASTES SUBJECT
TO A CONCENTRATION-BASED TREATMENT STANDARD¹—Continued

Waste description	Best demonstrated available technologies (BDAT)	
	Nonwastewater	Wastewater
P030	Electrolytic oxidation followed by alkaline chlorination (cyanides); chemical precipitation, settling, filtration (metals)	Alkaline chlorination (cyanides); chemical precipitation, settling and sludge dewatering (metals)
P036	Vitrification	Chemical precipitation
P037	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
P038	Vitrification	Chemical precipitation
P039	Rotary kiln incineration	Biological treatment
P047 (4,6-Dinitro- <i>o</i> -cresol)	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
P048	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
P050	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
P051	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
P056	(Treatment method specified)	Chemical precipitation
P059	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
P060	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
P063	Electrolytic oxidation followed by alkaline chlorination (cyanides); chemical precipitation, settling, filtration (metals)	Alkaline chlorination (cyanides); chemical precipitation, settling and sludge dewatering (metals)
P065 (low mercury)	Acid leaching, chemical precipitation	Chemical precipitation with sulfides
P071	Rotary kiln incineration	Biological treatment
P073	Stabilization	Incineration or chemical oxidation
P074	Electrolytic oxidation followed by alkaline chlorination (cyanides); chemical precipitation, settling, filtration, stabilization (metals)	Alkaline chlorination (cyanides); chemical precipitation, settling and sludge dewatering (metals)
P077	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
P082	(Treatment method specified)	Biological treatment or wet-air oxidation followed by carbon adsorption
P089	Rotary kiln incineration	Biological treatment
P092 (low mercury)	Acid leaching, chemical precipitation	Chemical precipitation with sulfides
P094	Rotary kiln incineration	Biological treatment
P097	Rotary kiln incineration	Biological treatment
P098	Electrolytic oxidation followed by alkaline chlorination (cyanides); chemical precipitation, settling, filtration (metals)	Alkaline chlorination (cyanides); chemical precipitation, settling and sludge dewatering (metals)
P099	Electrolytic oxidation followed by alkaline chlorination (cyanides); chemical precipitation, settling, filtration, stabilization (metals)	Alkaline chlorination (cyanides); chemical precipitation, settling and sludge dewatering (metals)

TABLE 6.2
BDAT TECHNOLOGIES FOR WASTES SUBJECT
TO A CONCENTRATION-BASED TREATMENT STANDARD¹—Continued

Waste description	Best demonstrated available technologies (BDAT)	
	Nonwastewater	Wastewater
P101	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
P103	Stabilization	Chemical precipitation with sulfides
P104	Electrolytic oxidation followed by alkaline chlorination (cyanides); chemical precipitation, settling, filtration, stabilization (metals)	Alkaline chlorination (cyanides); chemical precipitation, settling and sludge dewatering (metals)
P106	Electrolytic oxidation followed by alkaline chlorination (cyanides); chemical precipitation, settling, filtration (metals)	Alkaline chlorination (cyanides); chemical precipitation, settling and sludge dewatering (metals)
P110	Incineration (organics); stabilization (lead)	Chemical precipitation, filtration, settling
P113	(Treatment method specified)	Chemical precipitation
P114	Stabilization, vitrification or recovery	Chemical precipitation with sulfides
P115	(Treatment method specified)	Chemical precipitation
P119	(Treatment method specified)	Chemical precipitation
P120	(Treatment method specified)	Chemical precipitation
P121	Electrolytic oxidation followed by alkaline chlorination (cyanides); chemical precipitation, settling, filtration (metals)	Alkaline chlorination (cyanides); chemical precipitation, settling and sludge dewatering (metals)
P123	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U002	Incineration or fuel substitution	Biological treatment or wet-air oxidation followed by carbon adsorption
U003	(Treatment method specified)	Biological treatment or wet-air oxidation followed by carbon adsorption
U004	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U005	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U009	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U012	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U018	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U019	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U022	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U024	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U025	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U027	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U028	Rotary kiln incineration	Biological treatment or wet-air oxidation followed by carbon adsorption

TABLE 6.2
BDAT TECHNOLOGIES FOR WASTES SUBJECT
TO A CONCENTRATION-BASED TREATMENT STANDARD¹—Continued

Waste description	Best demonstrated available technologies (BDAT)	
	Nonwastewater	Wastewater
U029	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U030	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U031	Incineration or fuel substitution	Biological treatment or wet-air oxidation followed by carbon adsorption
U032	Chromium reduction, lime or sulfide precipitation, sludge dewatering	Chromium reduction, lime or sulfide precipitation, sludge dewatering
U036	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U037	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U038	(Treatment method specified)	Biological treatment or wet-air oxidation followed by carbon adsorption
U039	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U043	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U044	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U045	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U047	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U048	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U050	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U051	Incineration (organics); stabilization (lead)	Incineration (organics); chemical precipitation (lead)
U052	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U057	(Treatment method specified)	Biological treatment or wet-air oxidation followed by carbon adsorption
U060	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U061	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U063	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U066	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U067	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U068	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U069	Rotary kiln incineration	Biological treatment or wet-air oxidation followed by carbon adsorption

TABLE 6.2
BDAT TECHNOLOGIES FOR WASTES SUBJECT
TO A CONCENTRATION-BASED TREATMENT STANDARD¹—Continued

Waste description	Best demonstrated available technologies (BDAT)	
	Nonwastewater	Wastewater
U070	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U071	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U072	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U075	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U076	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U077	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U078	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U079	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U080	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U081	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U082	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U083	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U084	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U088	Rotary kiln incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U093	(Treatment method specified)	2
U101	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U102	Rotary kiln incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U105	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U106	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U107	Rotary kiln incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U108	Incineration or fuel substitution	Biological treatment or wet-air oxidation followed by carbon adsorption
U111	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U112	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U117	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U118	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption

TABLE 6.2
BDAT TECHNOLOGIES FOR WASTES SUBJECT
TO A CONCENTRATION-BASED TREATMENT STANDARD¹—Continued

Waste description	Best demonstrated available technologies (BDAT)	
	Nonwastewater	Wastewater
U120	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U121	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U127	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U128	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U129	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U130	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U131	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U134	(Treatment method specified)	Chemical precipitation
U136	Vitrification	Chemical precipitation
U137	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U138	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U140	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U141	Incineration	Wet-air oxidation followed by PACT
U142	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U144	Incineration followed by stabilization	Chemical oxidation followed by chemical precipitation
U145	Incineration followed by stabilization	Chemical oxidation followed by chemical precipitation
U146	Incineration followed by stabilization	Chemical reduction, lime or sulfide precipitation, sludge dewatering
U151 (<260 mg/kg total mercury)	Acid leaching, chemical precipitation	Chemical precipitation with sulfides
U151 (≥260 mg/kg total mercury)	(Treatment method specified)	Chemical precipitation with sulfides
U152	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U155	Incineration	Wet-air oxidation followed by PACT
U157	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U158	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U159	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U161	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U162	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption

TABLE 6.2
BDAT TECHNOLOGIES FOR WASTES SUBJECT
TO A CONCENTRATION-BASED TREATMENT STANDARD¹—Continued

Waste description	Best demonstrated available technologies (BDAT)	
	Nonwastewater	Wastewater
U165	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U168	(Treatment method specified)	Biological treatment or wet-air oxidation followed by carbon adsorption
U169	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U170	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U172	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U174	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U179	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U180	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U181	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U183	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U185	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U187	Incineration	Wet-air oxidation followed by PACT
U188	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U190	Rotary kiln incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U192	Incineration	Wet-air oxidation followed by PACT
U196	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U203	Incineration	Wet-air oxidation followed by PACT
U204	Stabilization	Chemical precipitation with sulfides
U205	Stabilization	Chemical precipitation with sulfides
U207	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U208	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U209	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U210	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U211	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U214	(Treatment method specified)	Chemical precipitation
U215	(Treatment method specified)	Chemical precipitation
U216	(Treatment method specified)	Chemical precipitation
U217	(Treatment method specified)	Chemical precipitation

TABLE 6.2
BDAT TECHNOLOGIES FOR WASTES SUBJECT
TO A CONCENTRATION-BASED TREATMENT STANDARD¹—Continued

Waste description	Best demonstrated available technologies (BDAT)	
	Nonwastewater	Wastewater
U220	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U225	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U226	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U227	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U228	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U235	Rotary kiln incineration	Biological treatment
U239	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U240 (2,4-D)	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U243	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption
U247	Incineration	Biological treatment or wet-air oxidation followed by carbon adsorption

¹Wastes for which a method of treatment is specified are listed in Table 6.1; for these wastes, only the specified technologies may be used. Use of BDAT as listed in Table 6.2 is not required for wastes with concentration-based standards; any technology may be used as long as wastes or treatment residues meet the concentration-based standards. The entries in this table are extracted from regulatory preambles, which are often inconsistent or incomplete. Readers desiring additional information on BDAT identification should contact the RCRA Docket, (202) 260-9327.

²Separate BDAT not specified for wastewaters.

³Separate BDAT not specified for metals in wastewaters.

⁴Effective November 9, 1992, high-temperature metals recovery is BDAT for all K061 nonwastewaters and the high- and low-zinc subcategories are eliminated.

Source: McCoy and Associates, Inc.

Chemical Conservation Corporation
Orlando, Florida

* * *

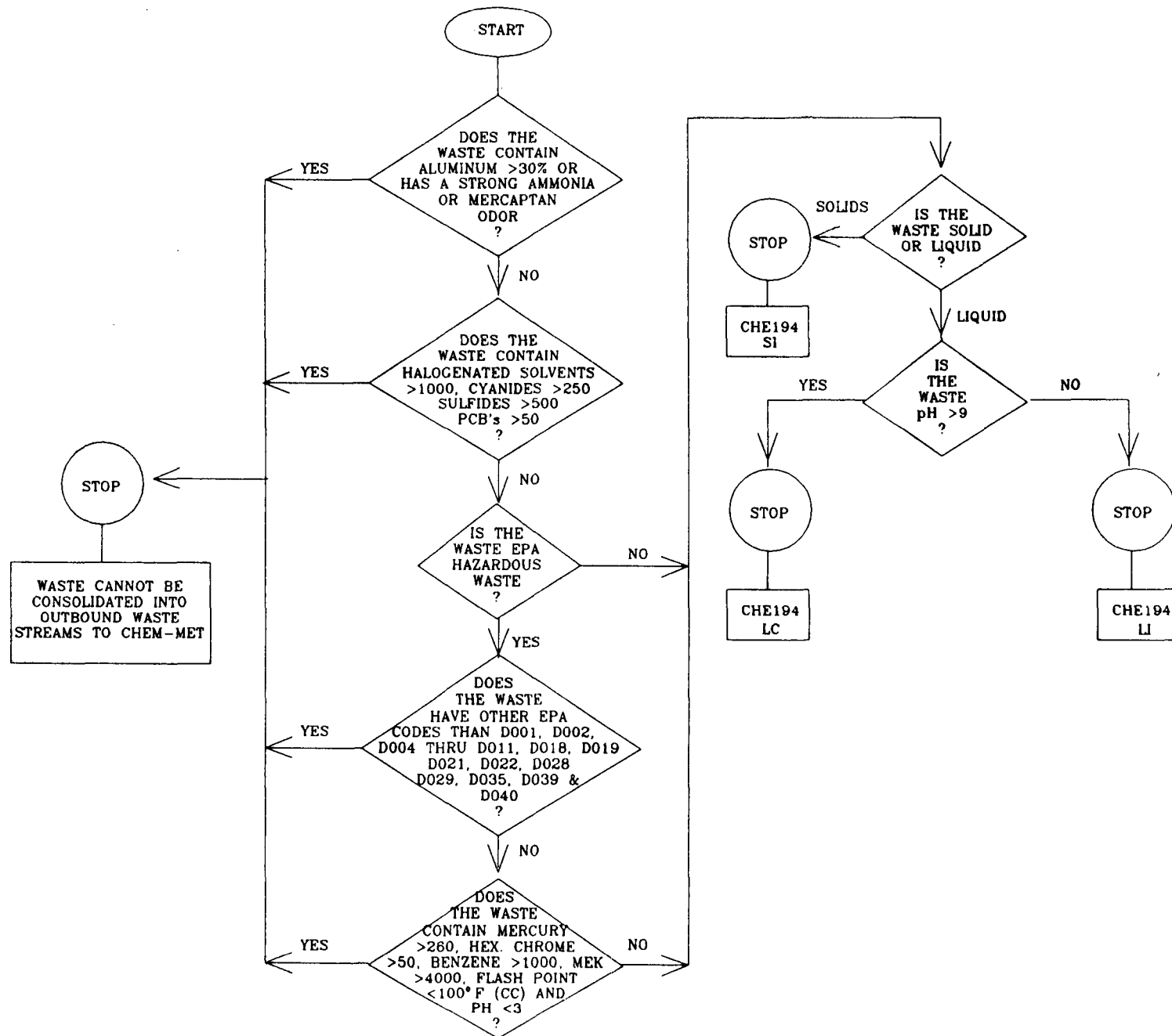
MEMORANDUM

TO: Joe Drucke
FROM: Armando Gonzalez
SUBJECT: WASTE STREAMS CONSOLIDATION FOR CHEM-MET AND
CHEM-CON, VALDOSTA
DATE: October 31, 1994

Chem-Con's effort to make of the labpack program a successful operation requires that most of the waste removed from lab pack drums be consolidated into waste streams destined to Chem-Met or Chem-Con, Valdosta, whenever all safety concerns and regulatory requirements are fully addressed. It is important that waste which consists of small amount of materials that may contain undesirable constituents or properties be well dispersed throughout larger amounts of inert waste material. Attached to this memorandum are two sheets containing a simplified decision making diagram to help determine which wastes may be consolidated into waste streams outbound to Chem-Met and Chem-Con, Valdosta. Please be advised that the diagrams do not address some hazardous properties (like explosive, radioactive, bio-hazardous, etc.) which are obviously not acceptable at both facilities.

CC: Wm F. Labadie
Patrick Sullivan

WASTE EVALUATION CRITERIA FOR CONSOLIDATION INTO OUTBOUND WASTE STREAMS TO CHEM-MET
 (all results are in total concentration levels and units are in parts per million unless specified otherwise)



WASTE EVALUATION CRITERIA FOR CONSOLIDATION INTO OUTBOUND WASTE STREAMS TO CHEM-CON VALDOSTA

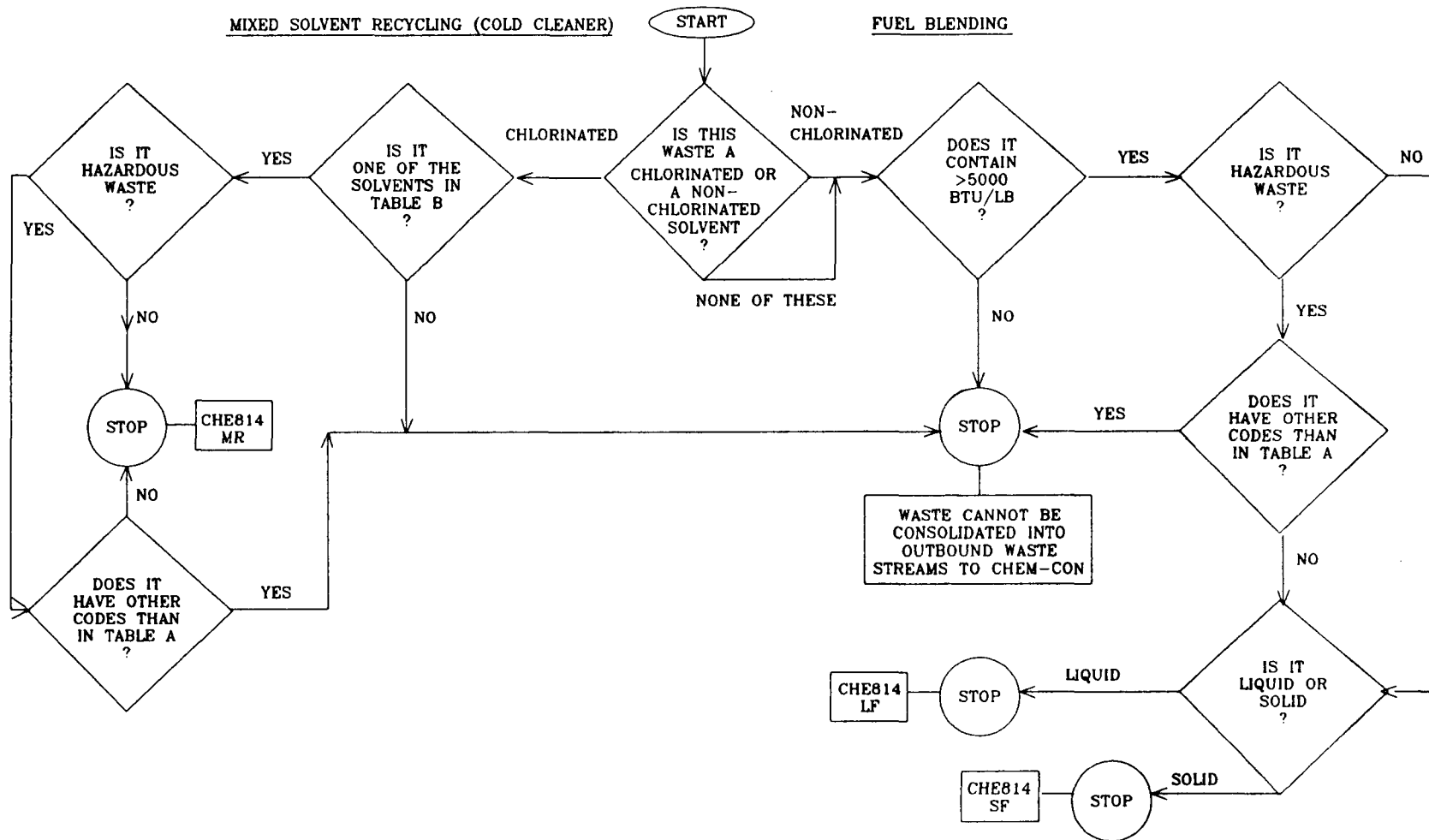


TABLE A

D001	D019	D029	D039	U031
D004	D020	D030	D040	U112
D005	D021	D031	D041	U140
D006	D022	D032	D042	U154
D007	D023	D033	D043	U159
D008	D024	D034	F001	U161
D009	D025	D035	F002	U220
D010	D026	D036	F003	U226
D011	D027	D037	F005	U228
D018	D028	D038	U002	U239

TABLE B

PERCHLOROETHYLENE (TETRACHLOROETHYLENE)
 1,1,1 TRICHLOROETHANE
 TRICHLOROETHYLENE
 TRICHLOROTRIFLUOROETHANE
 METHYLENE CHLORIDE (DICHLOROMETHANE)
 CARBON TETRACHLORIDE
 ETHYLENE DICHLORIDE
 CHLOROFORM

3/15/94
Submittal date
unknown

LAB PACK
PREPARATION GUIDE

I. INTRODUCTION

Chemical Conservation Corporation (Chem-Con) has developed this manual to help generators obtain approval for disposal of lab-packs at its facility. The information provided in this document does not include the name of all the materials that may present a danger during lab-pack preparation, transportation or disposal, nor does it address all the hazards that may be involved during lab-pack preparation and handling. Information contained in this manual should be used as guidelines to meet Chem-Con's specifications when preparing lab-packs for disposal.

II. EVALUATION OF MATERIALS

1. Identification of Materials

Materials that are to be placed in a lab-pack should be identified by their most appropriate name or description. The material name or description should be clearly marked using a permanent ink marker on a label made of durable and weather resistant material, which should be affixed to the surface of the primary (inner) container holding the material. The identification should be either of the following three types:

- a. **Technical Names and Mixtures:** The order of preference for technical names to be used for describing materials in a lab-pack are the ones which are listed in column (2) of the 49 CFR §172.101 - Hazardous Materials Table (HMT) first, and second, the names that appear in the Cross Index of Names of the most recent edition of The Merck Index. A name which does not appear in the table or index mentioned above will require that a Material Safety Data Sheet (MSDS) be provided by the generator. Mixtures should identify technical names involved and matrix where they are contained, if any.
- b. **Descriptions:** A material may have a description (i.e. Batteries, wet, filled with acid) that fits one listed in column (2) of the 49 CFR §172.101 - Hazardous Materials Table (HMT), in such case it should be used to identify the material. Otherwise, a description should indicate characteristics of the material, if any, from which the DOT Hazard Class and Packing Group may be evaluated in accordance with Part 173 of the 49 CFR.
- c. **Trade Names:** Material identified with trade names not listed in the Cross Index of Names of the most recent edition of The Merck Index should be accompanied by their corresponding MSDSs.

2. Classification of Materials

The classification process for materials to be placed in a lab-pack should be conducted in accordance with DOT regulations by determining the hazard class (or division) and the packing group. The DOT hazard class and packing group for the materials should be obtained from columns (3) and (5) of the 49 CFR §172.101 - Hazardous Materials Table (HMT) for materials whose technical name or description appear in the table, or evaluated in accordance with Part 173 of the 49 CFR for those materials which do not appear in the table, if any is applicable. The hazard class and packing group should be entered in the label

affixed to the primary (inner) container holding the material by entering first the class or division number followed by PG and the corresponding roman numeral notation (6.1 PGIII). Materials having the same DOT hazard class should be grouped together, and solids separated from liquids. These groups should be further divided in packing groups in accordance with the table provided in Section V.

III PROHIBITED MATERIAL

1. Forbidden Materials

Materials showing the entry "forbidden" in column (3) of the 49 CFR §172.101 - Hazardous Materials Table (HMT) except for the organic peroxides listed in 49 CFR 173.225(b) - Organic Peroxide Table shown in Appendix A (see Section IV).

2. Explosive Materials

Materials having a DOT Hazard Class 1 (Divisions 1.1, 1.2, 1.3, 1.4 and 1.5)

3. Bio-hazardous Materials

Materials having a DOT Hazard Class 6.2 or otherwise designated as infectious and medical waste, or etiologic agent.

4. Radioactive Materials

Materials having a DOT Hazard Class 7

5. Listed Self-Reactive Materials

Materials listed in the 49 CFR §173.224(b) - Self-Reactive Materials Table shown in Appendix A.

6. Prohibited Organic Peroxide Materials

- a. Organic Peroxides types A and B (in the HMT).
- b. Organic Peroxides types C, D, E and F, solids or liquids, which require temperature control (in the HMT).

IV RESTRICTED MATERIALS

Organic peroxide materials listed in the 49 CFR §173.225(b) - Organic Peroxide Table shown in Appendix A, which are not any of the prohibited materials listed in Section III above will be considered for approval on a case-by-case basis. Restricted materials should be overpacked and profiled individually (no more than one material having one technical name per lab-pack and profile).

V SEGREGATION OF MATERIALS

Only materials having the same DOT Hazard Class are allowed in a lab-pack in accordance with 49 CFR §173.12(b)(2)(iii). However, other DOT regulations require further segregation within the same DOT hazard class based on the division and packing group. The Segregation Table for Materials in Lab-Packs

shown in page 4, complies with the requirements stated in the previous sentences. The table indicates what materials may be packed together in a lab-pack. The packing reference numbers constitute individual lab-pack; materials shown in two different reference numbers cannot be packed in the same lab-pack. The only exception to the statement in the previous sentence is for non-regulated materials (packing reference number 17) which may be packed with any regulated material as long as compatibility with such materials is demonstrated, or easily verified.

VI INCOMPATIBILITY EVALUATION

1. The DOT Method

Materials whose names or descriptions are listed in the HMT should be evaluated for incompatibility in accordance with requirements stipulated in the 49 CFR §177.848. Packing reference numbers 1 through 17 in the segregation table shown in page 4 comply with the segregation requirements §177.848 for materials in the lab pack.

2. The EPA Method

Materials whose names or descriptions are not listed in the HMT should be evaluated for incompatibility in accordance with the method indicated by EPA in publication EPA-600/2-80-076. A general description of this method is provided in Appendix B.

VII INNER PACKAGING

The inner packaging should be either glass, not exceeding 1 gallon rated capacity, or metal or plastic, not exceeding 5 gallons rated capacity. Materials having the DOT Hazard Class 5.2, the DOT Hazard Class 6.1, Packing Group I, the DOT Hazard Class 4.2, Packing Group I, bromine pentafluoride, bromine trifluoride, chloric acid and oleum (fuming sulfuric acid), must meet their specific packaging requirements described in the 49 CFR Part 173. The material the inner container is made of should be compatible with the materials it contains.

VIII OUTER PACKAGING

The outer packaging should be a UN 1A2 (open head steel drum formerly DOT 17H), a UN 1G (open head fiber drum formerly DOT 21C) or a UN 1H2 (open head plastic drum) meeting the Packing Group III performance level for liquids or solids. The materials described in the previous section must meet their specific packaging requirement in the 49 CFR Part 173, and they cannot be lab-packed. The material the outer container is made of should be compatible with the materials it contains.

IX MAXIMUM MATERIAL QUANTITY IN LAB PACKS

<u>Container Vol.</u>	<u>Liquids Max Vol.</u>	<u>Solids Max. Wt.</u>	<u>Oxidizers Max. Wt.</u>
55 gallon	20 gallons	200 pounds	100 pounds
30 gallon	11 gallons	120 pounds	75 pounds
20 gallon	7 gallons	80 pounds	50 pounds
5 gallons	2 gallons	20 pounds	15 pounds

The gross weight of the complete package may not exceed 452 pounds.

SEGREGATION TABLE FOR MATERIALS IN LAB-PACKS

PACK- ING REF.	MATERIAL DESCRIPTION	DOT HAZARD CLASS	PACK- ING GROUPS	INNER PACKAGING ALLOWED	OUTER PACKAGING ALLOWED	ADDITIONAL REQUIREMENTS
1.	Flammable gases	2.1	N/A	49 CFR Part 173 Subpart G	See Section VIII	
2.	Non-flammable non-poisonous gases	2.2	N/A	49 CFR Part 173 Subpart G	See Section VIII	
3.	Poisonous gases	2.3	N/A	49 CFR Part 173 Subpart G	See Section VIII	
4.	Flammable and combustible liquids	3	I II III	See Section VII	See Section VIII	
5.	Self-reactive and readily combustible solids	4.1	I II III	49 CFR Part 173 Subpart E	See Section VIII	Wetted explosives are pro- hibited; see Section III.5. One inner container in lab-pack
6.	Spontaneously combustible solids	4.2	I	49 CFR Part 173 Subpart E	See Section VIII	Only one material type and inner container allowed in a lab-pack
7.	Self-reactive, readily and spontaneously combustible solids	4.2	II III	See Section VII	See Section VIII	
8.	Dangerous when wet	4.3	I II III	See Section VII	See Section VIII	
9.	Oxidizing Materials	5.1	I II III	See Section VII	See Section VIII	
10.	Organic Peroxides	5.2	II	49 CFR Section 173.225	See Section VIII	See Section IV
11.	Poisonous Materials	6.1	I	49 CFR Part 173 Subpart E	See Section VIII	See Section VII
12.	Poisonous Materials	6.1	II III	See Section VII	See Section VIII	
13.	Acidic Corrosives	8	I II III	See Section VII	See Section VIII	
14.	Caustic Corrosives	8	I II III	See Section VII	See Section VIII	
15.	Bromine pentafluoride, Bro- mine trifluoride, Chloric acid, Oleum (fuming H ₂ SO ₄)	49 CFR §172.101 (HNT)	49 CFR §172.101 (HMT)	49 CFR Part 173 Subpart E	See Section VIII	Every material should be labpacked individually
16.	Miscellaneous Hazardous Materials	9	III	See Section VII	See Section VIII	Every material in a lab pack should be evaluated in accordance with Section VI
17.	Non-regulated Materials	N/A	N/A	See Section VII	See Section VIII	Every material in a lab-pack should be evaluated in accordance with Section VI

X PACKAGING OF LAB PACKS

Only vermiculite should be used to separate inner containers in a lab-pack, unless another type of absorbent is indicated or approved in the profile. A minimum of a two-inch separation between the inner containers and the outer container sides, and a one inch separation between inner containers should be provided. The inside of metal and fiber outer containers should be fitted with a plastic liner before packaging begins.

XI MARKINGS AND LABELS

The markings in the hazardous waste label (or non-EPA regulated label for DOT regulated materials) should contain the DOT Description shown in the upper left hand side of the Drum Inventory sheet including other markings required for reportable quantities, inhalation hazard and marine pollutant substances. EPA hazardous waste codes should be the ones shown in the Drum Inventory sheet, as many as they may fit in the space reserved for such codes. Other spaces of the hazardous waste label (or non-EPA/DOT regulated label) should be completed accordingly.

DOT label should conform to column (6) of the HMT, as well as labels required for marine pollutants, dangerous when wet and labels indicating package orientation.

XII DRUM INVENTORY

The drum inventory sheet shown in Appendix C should be completed in all applicable spaces as indicated in notes and footnotes contained in the sheet. The space for waste codes ~~and hazard class~~ should be entered "NONE" for those materials to which they do not apply.

The line item number in the first column at the left of the inventory sheet should also be entered in the label affixed to the inner container for the corresponding material. The material/chemical name or description should conform to directives given in Section II.1. Make sure that instructions contained in the upper most note of the inventory sheet is followed for all affected materials. If materials in the lab-pack are not the same, the most appropriate shipping name to be entered in the upper left hand side may be one of the generic names contained in the list found in 49 CFR §172.203(k)(3). As many inventory sheets as necessary may be used to list the materials packed in a lab-pack as long as a Generator Drum No. is provided, and the order and total number of sheets for such lab-pack is recorded next to the right hand side of the drum number in space reserved for such data. Inventory sheets listing materials in a lab-pack should be affixed to the outside of the outer container using plastic envelopes that provide protection to the sheets and adhere to the outside of the outer container. Another set of inventory sheets should be included inside the lab-pack container, in case the one affixed to the outside waste becomes damaged or falls off the side. Profiles and manifests should have a set of corresponding inventory sheets attached. Inventory sheets should be certified by the generator since they become a supplement to the corresponding profile.

XIII PROFILING LAB PACKS

The profiles shown in Appendix D should have Sections A, B, E, F, G, I and L completed. Sections H and J may be left blank as long as the corresponding information is provided in the inventory sheets. Section F should account for the toxic elements and compounds in all materials packed in the lab-pack and Section G should include the waste codes listed in all the inventory sheet for the lab-pack in question.

XIV MANIFESTS AND LAND BANS

Lab-Packs should be manifested in accordance with EPA and DOT regulations that apply to the lab-packed materials. One land ban form should be completed for every manifest. A copy of the land ban form is provided in Appendix E.

XV SAFETY AND HEALTH

Personnel involved in lab-pack operation should be trained to standards required in the Hazardous Waste Operations and Emergency Operations of the 29 CFR Part 1910.120.

APPENDIX A

49 CFR § 173.224 - Packaging and control and
emergency temperatures for
self-reactive materials

49 CFR § 173.225 - Packaging requirements and
other provisions for organic
peroxides

(2) For transportation by passenger-carrying aircraft, a wheelchair equipped with a wet battery must conform to §173.222.

(d) *Truck bodies or trailers on cars.* Truck bodies or trailers with automatic heating or refrigerating equipment of the flammable liquid type may be shipped with fuel tanks filled and equipment operating or inoperative, when used for the transportation of other freight and loaded on flat cars as part of a joint rail and highway movement, provided the equipment and fuel supply conform to the requirements of §177.834(l) of this subchapter and are of a type which has been examined by the Bureau of Explosives and approved by the Associate Administrator for Hazardous Materials Safety.

(e) *Gases.* Compressed gas tanks and cylinders, containing gases, which are component parts of vehicles or mechanical equipment must conform to §173.306.

(f) *Other hazardous materials.* Other hazardous materials must be packaged and transported in accordance with the requirements of this subchapter.

(g) *Exceptions.* Except as provided in paragraph (f) of this section, shipments made under the provisions of this section—

(1) Are not subject to any other requirements of this subchapter, for transportation by motor vehicle or rail car; and

(2) Are not subject to the requirements of subparts D, E, and F (marking, labeling, and placarding, respectively) of part 172 of this subchapter, for transportation by vessel or aircraft.

§173.221 Polystyrene beads, expandable.

Polystyrene beads or granules, expandable, impregnated with flammable gas or liquid as a blowing agent and plastic moulding materials in dough, sheet or extruded rope form must be packed in wooden (4C1 or 4C2), plywood (4D), fiberboard (4G) or reconstituted wood (4F) boxes with sealed inner plastic liners, plywood drums (1D), fiber drums (1G) with sealed inner plastic liner or in metal (1A1, 1A2, 1B1 or 1B2) packagings.

§173.222 Wheelchairs equipped with wet electric storage batteries.

Wheelchairs equipped with wet storage batteries are not subject to the requirements of this subchapter other than the provisions of §175.10(a)(19) and (20) of this subchapter.

§173.224 Packaging and control and emergency temperatures for self-reactive materials.

(a) When the §172.101 Table specifies that a Division 4.1 material be packaged in accordance with this section, only non-bulk packagings which conform to the provisions of this section may be used. Each packaging must conform to the general packaging requirements of subpart B, part 173, and to the requirements of part 178 of this subchapter at the Packing Group II performance level. Packing Group I and Packing Group III non-bulk packagings are not authorized. Self-reactive materials which require temperature control are subject to the provisions of §173.21(f).

(b) *Self-reactive materials table.* The self-reactive materials table specifies, by identification (ID) number the packing method that must be used, the control temperature, and the emergency temperature, as follows:

(1) *ID numbers.* The first column of the table gives the identification numbers for self-reactive materials as assigned in Column 4 of the §172.101 Table.

(2) *Packing methods.* The second column of the table designates the packing method or methods that are authorized to package the self-reactive material. The table of packing methods in paragraph (c) of this section defines the packing methods.

(3) *Temperatures.* Column 3a specifies the control temperature. Column 3b specifies the emergency temperature. The letters "NR" means that temperature controls are not required.

§173.224(b)—SELF-REACTIVE MATERIALS TABLES

ID No. (1)	Proper shipping name (2)	Packing methods (3)	Temperature, °C (°F)	
			Control (4a)	Emergency (4b)
UN2951	Diphenyloxide-4,4'-disulfohydrazide	F1, F5a	NR	NR
UN2952	Azodiisobutyronitrile	F1, F2, F3, F5a	40 (104)	45 (113)
UN2953	2,2'-Azodi-(2,4 dimethylvaleronitrile)	F1, F2, F3, F5a	10 (50)	15 (59)
UN2954	1,1'-Azodi-(hexahydrobenzonitrile)	F1, F2, F3, F5a	NR	NR
UN2955	2,2'-Azodi-(2,4-dimethyl-4-methoxy valeronitrile)	F1, F2, F3, F5a	-5 (23)	5 (41)
UN2970	Benzene sulfohydrazide	F1, F2, F3, F5a	NR	NR
UN2971	Benzene-1,3-disulfohydrazide, [not more than 52% as a paste]	F1, F2, F3, F5a	NR	NR
UN2972	N,N'-Dinitrosopentamethylenetetramine [not more than 82% with phlegmatizer] ..	F1, F2, F3, F5a	NR	NR
UN2973	N,N'-Dinitroso-N,N'-dimethyl terephthalamide [not more than 72% as a paste] ...	F1, F5a	NR	NR
UN3030	2,2'-Azodi (2-methyl-butyrionitrile)	F5b	40 (104)	45 (113)
UN3033	3-Chloro-4-diethylaminobenzene diazonium zinc chloride	F1, F6	NR	NR

§173.224(b)—SELF-REACTIVE MATERIALS TABLES, Continued

ID No (1)	Proper shipping name (2)	Packing methods (3)	Temperature, °C (°F)	
			Control (4a)	Emergency (4b)
UN3034	4-Dipropylaminobenzenediazonium zinc chloride	F1, F6	NR	NR
UN3035	3-(2-Hydroxyethoxy)-4-pyrrolidin-1-yl-benzenediazonium zinc chloride	F1, F6	40 (104)	45 (113)
UN3036	2,5-Diethoxy-4-morpholinobenzenediazonium zinc chloride	F1, F6	35 (95)	40 (104)
UN3037	4-(Benzyl (ethyl) amino)-3-ethoxy-benzenediazonium zinc chloride	F1, F6	40 (104)	45 (113)
UN3038	4-(Benzyl (methyl) amino)-3-ethoxy-benzenediazonium zinc chloride	F1, F6	40 (104)	45 (113)
UN3039	4-Dimethylamino-6-(2-dimethyl) aminoethoxy toluene-2-diazonium zinc chloride	F1, F6	40 (104)	45 (113)
UN3040	Sodium 2-diazo-1-naphthol-4-sulphonate	F1, F6	NR	NR
UN3041	Sodium 2-diazo-1-naphthol-5-sulphonate	F1, F6	NR	NR
UN3042	2-Diazo-1-naphthol-4-sulphochloride	F1	NR	NR
UN3043	2-Diazo-1-naphthol-5-sulphochloride	F1	NR	NR

(c) Table of packing methods for selfreactive materials. The table of packing methods for self reactive materials specifies, by packing method, packaging quantity limits and the types of packagings that are authorized, as follows:

(1) *Packing method.* The first column of the table provides the packing method (e.g., F1).

(2) *Quantity limitations.* Column 2a specifies the maximum net mass per inner packaging, in kilograms and

pounds, where inner packagings are required. If Column 2a is blank, inner packagings are not required. Column 2b specifies the maximum net mass per outer packaging, in kilograms and pounds.

(3) *Description of packaging.* Column 3a specifies the type of inner packaging that must be used. If Column 3a is blank, inner packagings are not required. Column 3b specifies the outer packaging that must be used.

§173.224(c)—PACKING METHODS FOR SELF-REACTIVE MATERIALS

Packing method (1)	Contents (2)		Description of packaging (3)	
	Maximum of inner packaging (2a)	Maximum of whole packaging (2b)	Inner packaging	Outer packaging
F1		50 kg (110 lb)		Fiber drum 1G, with plastic liner or internal coating.
F2	50 kg (110 lb)	50 kg (110 lb)	Plastic bag, packed singly	Fiberboard box 4G.
F3	5 kg (11 lb)	40 kg (88 lb)	Plastic boxes, plastic bottles or jars	Fiberboard box 4G.
F4	5 kg (11 lb)	25 kg (55 lb)	Plastic bottles or jars, plastic bags, plastic boxes	Fiber drum 1G.
F5a		50 kg (110 lb)		Fiberboard box 4G.
F5b		25 kg (55 lb)		Fiber drum, sift proof 1G.
F6	55 kg (121 lb)	55 kg (121 lb)	Plastic bags	Fiber drum, sift proof 1G.
				Steel drum, removable head 1A2.
				Aluminum drum, removable head 1B2.

§173.225 Packaging requirements and other provisions for organic peroxides.

(a) *General.* When the §172.101 Table specifies that an organic peroxide be packaged under this section, the organic peroxide must be packaged and offered for transportation in accordance with the provisions of this section. Each packaging must conform to the general requirements of subpart B of part 173 and to the applicable requirements of part 178 of this subchapter. Nonbulk packagings must meet Packing Group II performance levels. Packing Group I and Packing Group III nonbulk packagings are not authorized. Organic peroxides which require temperature control are subject to the provisions of §173.21(f).

(b) *Organic peroxides table.* The following Organic Peroxides Table specifies, by technical name, those organic peroxides that are authorized for transportation and not subject to the approval provisions of §173.128 of

this part. An organic peroxide identified by technical name in the following table is authorized for transportation only if it conforms to all applicable provisions of the table. For an organic peroxide not identified in the table by technical name or a formulation of identified organic peroxides, the provisions of paragraph (c) of §173.128 apply. The column headings of the Organic Peroxides table are as follows:

(1) *Technical name.* The first column specifies the technical name.

(2) *ID number.* The second column specifies the identification (ID) number which is used to identify the proper shipping name in the §172.101 Table.

(3) *Concentration of organic peroxide.* The third column specifies concentration (mass percent) limitations, if any, in mixtures or solutions for the organic peroxide. Limitations are given as minimums, maximums, or a

range, as appropriate. A range includes the lower and upper limits (i.e., "53100" means from, and including, 53 percent to, and including 100 percent).

(4) *Concentration of diluents.* The fourth column specifies the type and concentration (mass percent) of diluent or inert solid, when required. Other types and concentrations of diluents may be authorized if approved by the Associate Administrator for Hazardous Materials Safety.

(i) The required mass percent of "Diluent type A" is specified in Column 4a. A diluent type A is an organic liquid that does not detrimentally affect the thermal stability or increase the hazard of the organic peroxide and with a boiling point not less than 150°C at atmospheric pressure. Type A diluents may be used for desensitizing all organic peroxides.

(ii) The required mass percent of "Diluent type B" is specified in Column 4b. A diluent type B is an organic liquid that does not detrimentally affect the thermal stability or increase the hazard of the organic peroxide and which has a boiling point, at atmospheric pressure, of less than 150°C but at least 60°C, and a flash point greater than 5°C. A Type B diluent may only be used for the desensitization of an organic peroxide for which it is specified in the table. The boiling point of a type B diluent must be at least 50°C above the control temperature of the organic

peroxide. A Type A diluent may be used to replace a Type B diluent in equal concentration.

(iii) The required mass percent of "Inert solid" is specified in column 4c. An inert solid is a solid that does not detrimentally affect the thermal stability or increase the hazard of the organic peroxide.

(5) *Concentration of water.* Column 5 specifies, in mass percent, the minimum amount of water, if any, which must be in formulation.

(6) *Packing method.* Column 6 specifies the highest packing method (largest packaging capacity) which is authorized for the organic peroxide. Lower numbered packing methods (smaller packaging capacities) are also authorized. For example, if OP3A is specified, then OP2A and OP1A are also authorized. The Table of Packing Methods in paragraph (d) of this section defines the packing methods.

(7) *Temperatures.* Column 7a specifies the control temperature. Column 7b specifies the emergency temperature. Temperatures are specified only when temperature controls are required. (See §173.21(f)).

(8) *Notes.* Column 8 specifies other applicable provisions, as set forth in notes following the table.

ORGANIC PEROXIDES TABLE

Technical Name (1)	ID Number (2)	Concentration (Mass %) (3)	Diluent (Mass %)			Water (Mass %) (5)	Packing Method (6)	Temperature(°C)		Notes (8)
			A (4a)	B (4b)	I (4c)			Control (7a)	Emergency (7b)	
Acetyl acetone peroxide	UN3105	≤ 42	≥ 48			≥ 8	OP7A			2
Acetyl acetone peroxide as a paste	UN3106	≤ 32					OP7B			21
Acetyl benzoyl peroxide	UN3105	≤ 45	≥ 55				OP7A			
Acetyl cyclohexanesulfonyl peroxide	UN3112	≤ 82				≥ 12	OP4B	-10	0	
Acetyl cyclohexanesulfonyl peroxide	UN3115	≤ 32		≥ 68			OP7A	-10	0	
tert-Amyl hydroperoxide	UN3107	≤ 88	≥ 6			≥ 6	OP8A			
tert-Amyl peroxybenzoate	UN3105	≤ 96	≥ 4				OP7A			
tert-Amyl peroxy-2-ethylhexanoate	UN3115	≤ 100					OP7A	20	25	
tert-Amyl peroxyneodecanoate	UN3115	≤ 77		≥ 23			OP7A	0	10	
tert-Amyl peroxyvalerate	UN3113	≤ 77		≥ 23			OP5A	10	15	
tert-Amylperoxy-3,5,5-trimethylhexanoate	UN3101	≤ 100					OP5A			
tert-Butyl cumyl peroxide	UN3105	≤ 100					OP7A			1,9
n-Butyl-4,4-di-(tertbutylperoxy) valerate	UN3103	> 52, ≤ 100					OP5A			
n-Butyl-4,4-di-(tertbutylperoxy) valerate	UN3106	≤ 52			≥ 48		OP7B			
tert-Butyl hydroperoxide	UN3103	> 72 ≤ 90				≥ 10	OP5A			
tert-Butyl hydroperoxide	UN3105	≤ 80	≥ 20				OP7A			4
tert-Butyl hydroperoxide	UN3109	≤ 72				≥ 28	OP8A			14
tert-Butyl hydroperoxide and di-tert-Butyl peroxide	UN3103	≤ 82								
di-tert-Butyl peroxide	UN3103	≥ 9				≥ 7	OP5A			
tert-Butyl monoperoxymaleate	UN3102	> 52 ≤ 100					OP5B			
tert-Butyl monoperoxymaleate	UN3103	≤ 52	≥ 48				OP6A			
tert-Butyl monoperoxy maleate as a paste	UN3108	≤ 42					OP8B			21
tert-Butyl monoperoxyphthalate	UN3102	≤ 100					OP5B			
tert-Butyl peroxyacetate	UN3101	> 52, ≤ 77	≥ 23				OP5A			
tert-Butyl peroxyacetate	UN3103	≤ 52	≥ 48				OP6A			
tert-Butyl peroxybenzoate	UN3103	> 77 ≤ 100	≤ 22				OP5A			
tert-Butyl peroxybenzoate	UN3105	> 52, ≤ 77	≥ 23				OP7A			1
tert-Butyl peroxybenzoate	UN3106	≤ 52			≥ 48		OP7B			

ORGANIC PEROXIDES TABLE, Continued

Technical Name (1)	ID Number (2)	Concentration (Mass %) (3)	Diluent (Mass %)			Water (Mass %) (5)	Packing Method (6)	Temperature (°C)		Notes (8)
			A (4a)	B (4b)	I (4c)			Control (7a)	Emergency (7b)	
tert-Butyl peroxyacrylate	UN3105	≤ 77	≥ 23				OP7A			
tert-Butyl peroxydiethylacetate	UN3113	≤ 100					OP5A	20	25	
tert-Butyl peroxydiethyl acetate and tert-Butyl peroxybenzoate	UN3105	≤ 33 ≤ 33	≥ 33				OP7A			
tert-Butyl peroxy-2-ethylhexanoate	UN3113	> 52, ≤ 100					OP6A	20	25	
tert-Butyl peroxy-2-ethylhexanoate	UN3117	≤ 52		≥ 48			OP8A	20	25	
tert-Butyl peroxy-2-ethylhexanoate and 2,2-Di-(tert-butylperoxy)butane	UN3115	≤ 31 ≤ 36		≥ 33			OP7A	35	40	
tert-Butyl peroxy-2-ethylhexanoate and 2,2-Di-(tert-butylperoxy)butane	UN3106	≤ 12 ≤ 14	≥ 14		≥ 60		OP7B			
tert-Butyl peroxyisobutyrate	UN3111	> 52, ≤ 77		≥ 23			OP5A	15	20	
tert-Butyl peroxyisobutyrate	UN3115	≤ 52		≥ 48			OP7A	15	20	
tert-Butylperoxy isopropylcarbonate	UN3103	≤ 77	≥ 23				OP5A			
tert-Butyl peroxyneodecanoate	UN3115	> 77, ≤ 100					OP7A	-5	5	
tert-Butyl peroxyneodecanoate	UN3115	≤ 77		≥ 23			OP7A	0	10	
3-tert-Butylperoxy-3-phenylphthalide	UN3106	≤ 100					OP7B			
tert-Butyl peroxyprivalate	UN3113	> 67, ≤ 77	≥ 23				OP5A	0	10	
tert-Butyl peroxyprivalate	UN3115	≤ 67		≥ 33			OP7A	0	10	
tert-Butylperoxy stearylcarbonate	UN3106	≤ 100					OP7B			
tert-Butyl peroxy-3,5,5-trimethylhexanoate	UN3105	≤ 100					OP7A			
3-Chloroperoxybenzoic acid	UN3102	> 57, ≤ 86				≥ 14	OP1B			
3-Chloroperoxybenzoic acid	UN3106	≤ 57			≥ 3	≥ 40	OP7B			
Cumyl hydroperoxide	UN3109	≤ 90	≥ 10				OP8A			14
Cumyl peroxyneodecanoate	UN3115	≤ 77		≥ 23			OP7A	-10	0	
Cumyl peroxyprivalate	UN3115	≤ 77		≥ 23			OP7A	-5	5	
Cyclohexanone peroxide(s)	UN3104	≤ 91				≥ 9	OP6B			
Cyclohexanone peroxide(s) as a paste	UN3106	≤ 72					OP7B			5,21
Cyclohexanone peroxide(s)	UN3105	≤ 72	≥ 28				OP7A			5
Cyclohexanone peroxide(s)	Exempt	≤ 32			≥ 68					
Diacetone alcohol peroxides	UN3115	≤ 57		≥ 26		≥ 8	OP7A	30	35	5
Diacetyl peroxide	UN3115	≤ 27		≥ 73			OP7A	20	25	8
Di-tert-amyl peroxide	UN3107	≤ 100					OP8A			
Dibenzoyl peroxide	UN3102	> 52, ≤ 100			≤ 48		OP2B			3
Dibenzoyl peroxide	UN3102	> 78, ≤ 94				≥ 6	OP4B			3
Dibenzoyl peroxide	UN3104	≤ 77				≥ 23	OP6B			
Dibenzoyl peroxide	UN3106	≤ 62			≥ 28	≥ 10	OP7B			
Dibenzoyl peroxide as a paste	UN3106	> 52, ≤ 62					OP7B			21
Dibenzoyl peroxide as a paste	UN3108	≤ 52					OP8B			21
Dibenzoyl peroxide	UN3106	> 35, ≤ 52		≥ 48			OP7B			
Dibenzoyl peroxide	Exempt	≤ 35		≥ 65						
Dibenzyl peroxydicarbonate	UN3112	≤ 87				≥ 13	OP5B	25	30	
Di-(4-tert-butyl(cyclohexyl) peroxydicarbonate	UN3114	≤ 100					OP6B	30	35	
Di-(4-tert-butyl(cyclohexyl) peroxydicarbonate as a stable dispersion in water	UN3119	≤ 42					OP8A	30	35	
Di-tert-butyl peroxide	UN3107	≤ 100					OP8A			
2,2-Di-(tert-butylperoxy)butane	UN3103	≤ 52	≥ 48				OP6A			
1,1-Di-(tert-butylperoxy)cyclohexane	UN3101	> 80, ≤ 100					OP5A			
1,1-Di-(tert-butylperoxy)cyclohexane	UN3103	> 52, ≤ 80	≥ 20				OP5A			
1,1-Di-(tert-butylperoxy)cyclohexane	UN3105	≤ 52	≥ 48				OP7A			
1,1-Di-(tert-butylperoxy)cyclohexane	UN3106	≤ 42	≥ 13		≥ 45		OP7B			
1,1-Di-(tert-butylperoxy)cyclohexane	UN3107	≤ 27	≥ 36				OP8A			22
2,2-Di-(4,4-tert-butylperoxycyclo hexyl)propane	UN3106	≤ 42			≥ 58		OP7B			
Di-n-butyl peroxydicarbonate	UN3115	> 27, ≤ 52		≥ 48			OP7A	-15	-5	
Di-n-butyl peroxydicarbonate	UN3117	≤ 27		≥ 73			OP8A	-10	0	
Di-sec-butyl peroxydicarbonate	UN3113	> 52, ≤ 100					OP4A	-20	-10	6

ORGANIC PEROXIDES TABLE, Continued

Technical Name (1)	ID Number (2)	Concentration (Mass %) (3)	Diluent (Mass %)			Water (Mass %) (5)	Packing Method (6)	Temperature (°C)		Notes (8)
			A (4a)	B (4b)	I (4c)			Control (7a)	Emergency (7b)	
Di-sec-butyl peroxydicarbonate	UN3115	≤ 52		≥ 48			OP7A	-15	-5	
Di-(2-tert-butylperoxyisopropyl) benzene(s)	UN3106	> 42, ≤ 100			≤ 57		OP7B			1,9
Di-(2-tert-butylperoxyisopropyl) benzene(s)	Exempt	≤ 42			≥ 58					
Di-(tert-butylperoxy)phthalate	UN3105	> 42, ≤ 52	≥ 48				OP7A			
Di-(tert-butylperoxy)phthalate as a paste	UN3106	≤ 52					OP7B			21
Di-(tert-butylperoxy)phthalate	UN3107	≤ 42	≥ 58				OP8A			
2,2-Di-(tert-butylperoxy)propane	UN3105	≤ 52	≥ 48				OP7A			
2,2-Di-(tert-butylperoxy)propane	UN3106	≤ 42	≥ 13		≥ 45		OP7B			
1,1-Di-(tert-butylperoxy)-3,3,5-trimethyl- cyclohexane	UN3101	> 57, ≤ 100					OP5A			
1,1-Di-(tert-butylperoxy)-3,3,5-trimethyl- cyclohexane	UN3106	≤ 57			≥ 43		OP7B			
1,1-Di-(tert-butylperoxy)-3,3,5-trimethyl- cyclohexane	UN3107	≤ 57	≥ 43				OP8A			
Dicetyl peroxydicarbonate	UN3116	≤ 100					OP7B	20	25	
Dicetyl peroxydicarbonate as a stable dispersion in water.	UN3119	≤ 42					OP8A	30	35	
Di-4-chlorobenzoyl peroxide	UN3102	≤ 77				≥ 23	OP5B			
Di-4-chlorobenzoyl peroxide as a paste	UN3106	≤ 52					OP7B			21
Di-4-chlorobenzoyl peroxide	Exempt	≤ 32			≥ 68					
Dicumyl peroxide	UN3110	> 42, ≤ 100			≤ 57		OP8B			9
Dicumyl peroxide	Exempt	≤ 42			≥ 58					
Dicyclohexyl peroxydicarbonate	UN3112	> 91, ≤ 100					OP5B	5	10	
Dicyclohexyl peroxydicarbonate	UN3114	≤ 91				≥ 9	OP3B	5	10	
Didecanoyl peroxide	UN3114	≤ 100					OP6B	15	20	
Di-2,4-dichlorobenzoyl peroxide	UN3102	≤ 77				≥ 23	OP5B			
Di-2,4-dichlorobenzoyl peroxide as a paste with silicon oil.	UN3106	≤ 52					OP7B			
Di-(2-ethylhexyl) peroxydicarbonate	UN3113	> 77, ≤ 100					OP5A	-20	-10	
Di-(2-ethylhexyl) peroxydicarbonate	UN3115	≤ 77					OP7A	-15	-5	
Di-(2-ethylhexyl) peroxydicarbonate as a stable dispersion in water.	UN3117	≤ 42					OP8A	-15	-5	
Di-(2-ethylhexyl) peroxydicarbonate as a stable dispersion in water (frozen).	UN3117	≤ 42					OP8B	-15	-5	
Diethyl peroxydicarbonate	UN3115	≤ 27		≥ 73			OP7A	-10	0	
2,2-Dihydroperoxypropane	UN3102	≤ 27			≥ 73		OP5B			
Di-(1-hydroxycyclohexyl) peroxide	UN3106	≤ 100					OP7B			
Diisobutyl peroxide	UN3111	> 32, ≤ 52		≥ 48			OP5A	-20	-10	
Diisobutyl peroxide	UN3115	≤ 32		≥ 68			OP7A	-20	-10	
Diisopropyl peroxydicarbonate	UN3112	> 52, ≤ 100					OP2B	-15	-5	
Diisopropyl peroxydicarbonate	UN3115	≤ 52		≥ 48			OP7A	-10	0	
Diisotridecyl peroxydicarbonate	UN3115	≤ 100					OP7A	-10	0	
Dilauroyl peroxide	UN3106	≤ 100					OP7B			
Dilauroyl peroxide as a stable dispersion in water.	UN3109	≤ 42					OP8A			
Di-(2-methylbenzoyl) peroxide	UN3112	≤ 87				≥ 13	OP5B	30	35	
2,5-Dimethyl-2,5-di-(benzoyl-peroxy) hexane	UN3102	> 82, ≤ 100					OP5B			
2,5-Dimethyl-2,5-di-(benzoyl-peroxy) hexane	UN3106	≤ 82			≥ 18		OP7B			
2,5-Dimethyl-2,5-di-(benzoyl-peroxy) hexane	UN3104	≤ 82				≥ 18	OP5B			
2,5-Dimethyl-2,5-di-(tert-butyl-peroxy) hexane	UN3105	> 52, ≤ 100					OP7A			
2,5-Dimethyl-2,5-di-(tert-butyl-peroxy) hexane	UN3106	≤ 52			≥ 48		OP7B			
2,5-Dimethyl-2,5-di-(tert-butyl-peroxy) hexyne-3	UN3103	> 52, ≤ 100					OP5A			
2,5-Dimethyl-2,5-di-(tert-butyl-peroxy) hexyne-3	UN3106	≤ 52			≥ 48		OP7B			
2,5-Dimethyl-2,5-di-(2-ethylhexanoyl- peroxy) hexane	UN3115	≤ 100					OP7A	20	25	

ORGANIC PEROXIDES TABLE, Continued

Technical Name (1)	ID Number (2)	Concentration (Mass %) (3)	Diluent (Mass %)			Water (Mass %) (5)	Packing Method (6)	Temperature(°C)		Notes (8)
			A (4a)	B (4b)	I (4c)			Control (7a)	Emergency (7b)	
2,5-Dimethyl-2,5-dihydroperoxyhexane	UN3104	≤ 82				≥ 18	OP6B			
2,5-Dimethyl-2,5-di-(3,5,5-trimethylhexanoylperoxy) hexane	UN3105	≤ 77	≥ 23				OP7A			
Dimynslyl peroxydicarbonate	UN3116	≤ 100					OP7B	20	25	
Dimynslyl peroxydicarbonate as a stable dispersion in water.	UN3119	≤ 42					OP8A	20	25	
Di-n-nonanoyl peroxide	UN3118	≤ 100					OP7B	0	10	
Di-n-octanoyl peroxide	UN3114	≤ 100					OP5B	10	15	
Diperoxy azelaic acid	UN3116	≤ 27			≥ 73		OP7B	35	40	
Diperoxy dodecane diacid	UN3118	> 13, ≤ 42			≥ 58		OP7B	40	45	
Diperoxy dodecane diacid	Exempt	≤ 13								
Di-(2 Phenoxyethyl) peroxydicarbonate	UN3102	> 85, ≤ 100					OP5B			
Di-(2 phenoxyethyl) peroxydicarbonate	UN3106	≤ 85				≥ 15	OP7B			
Dipropionyl peroxide	UN3117	≤ 27		≥ 73			OP8A	15	20	
Di-n-propyl peroxydicarbonate	UN3113	≤ 100					OP4A	-25	-15	
Distearyl peroxydicarbonate	UN3106	≤ 87			≥ 13		OP7B			
Disuccinic acid peroxide	UN3102	> 72, ≤ 100					OP4B			18
Disuccinic acid peroxide	UN3116	≤ 72				≥ 28	OP7B	10	15	18
Di-(3,5,5-trimethyl-1,2-dioxo-1-yl-3) peroxide as a paste	UN3116	≤ 52					OP7B	30	35	21
Di-(3,5,5-trimethylhexanoyl) peroxide	UN3115	≤ 82	≥ 18				OP7A			
Ethyl-3,3-di-(tert-amyloxy)butyrate	UN3105	≤ 67	≥ 33				OP7A			
Ethyl-3,3-di-(tert-butylperoxy)butyrate	UN3103	> 77, ≤ 100					OP5A			
Ethyl-3,3-di-(tert-butylperoxy)butyrate	UN3105	≤ 77	≥ 23				OP7A			
Ethyl-3,3-di-(tert-butylperoxy)butyrate	UN3106	≤ 52			≥ 48		OP7B			
3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetraoxacyclononane	UN3102	> 52, ≤ 100					OP4B			
3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetraoxacyclononane	UN3105	≤ 52	≥ 48				OP7A			
3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetraoxacyclononane	UN3106	≤ 52			≥ 48		OP7B			
Isopropylcumyl hydroperoxide	UN3109	≤ 72	≥ 28				OP8A			14
p-Menthyl hydroperoxide	UN3105	> 55, ≤ 100					OP7A			
p-Menthyl hydroperoxide	UN3109	≤ 55	≥ 45				OP8A			14
Methylcyclohexanone peroxide(s)	UN3115	≤ 67		≥ 33			OP7A	35	40	
Methyl ethyl ketone peroxide(s)	UN3101	≤ 52	≥ 48				OP5A			5
Methyl ethyl ketone peroxide(s)	UN3105	≤ 45	≥ 55				OP7A			5
Methyl ethyl ketone peroxide(s)	UN3107	≤ 40	≥ 60				OP8A			5
Methyl isobutyl ketone peroxide(s)	UN3105	≤ 62	≥ 19				OP7A			5,23
Organic peroxide, solid, temperature controlled	UN3114						OP2B			12
Organic peroxide, liquid, sample	UN3103						OP2A			12
Organic peroxide, liquid, temperature controlled	UN3113						OP2A			12
Organic peroxide, solid, sample	UN3104						OP2B			12
Peroxyacetic acid, type D, stabilized	UN3105	≤ 43					OP7A			20
Peroxyacetic acid, type E, stabilized	UN3107	≤ 43					OP8A			20
Peroxyacetic acid, type F, stabilized	UN3109	≤ 43					OP8A			20
Pinanyl hydroperoxide	UN3105	> 55, ≤ 100					OP7A			
Pinanyl hydroperoxide	UN3109	≤ 55	≥ 45				OP8A			14
Tetrahydronaphthyl hydroperoxide	UN3106	≤ 100					OP7B			
1,1,3,3-Tetramethylbutyl hydroperoxide	UN3105	≤ 100					OP7A			
1,1,3,3-Tetramethylbutylperoxy-2-ethylhexanoate	UN3115	≤ 100					OP7A	20	25	
2,4,4-Trimethylpentyl-2-peroxy phenoxyacetate	UN3115	≤ 37		≥ 63			OP7A	-10	0	

Notes:

1. For domestic shipments, OP8A is authorized.
2. Available oxygen must be <4.7 percent.

3. For concentrations <80 percent OP5B is allowed. For concentrations >80 percent but >85 percent, OP4B is allowed. For concentrations >85 percent, maximum package size is OP2B.

4. The diluent may be replaced by di-tert-butyl peroxide.

5. Available oxygen must be ≤ 9 percent.
6. For domestic shipments, OP5A is authorized.
7. [Reserved]
8. Only non-metallic packagings are authorized.
9. For domestic shipments, this material may be transported in bulk packagings under the provisions of §173.225(e)(3)(v).
10. [Reserved]
11. [Reserved]
12. Samples may only be offered for transportation when all available data indicate that the sample is no more dangerous than an Organic Peroxide type C, and the sample is packaged using packaging method OP2A for liquids or OP2B for solids, as appropriate, in quantities less than 10 kg per shipment, employing any necessary temperature controls.
13. [Reserved]
14. This material may be transported in bulk packagings under the provisions of §173.225(e).
15. [Reserved]
16. [Reserved]
17. [Reserved]
18. Addition of water to this organic peroxide will decrease its thermal stability.
19. [Reserved]
20. Mixtures with hydrogen peroxide, water and acid(s).
21. With diluent type A, with or without water.
22. With > 3 percent, by mass, ethylbenzene.
23. With > 19 percent, by mass, methyl isobutyl ketone.

(c) *New organic peroxides, formulations and samples.* (1) Except as provided for samples in paragraph

(c)(4) of this section, no person may offer for transportation an organic peroxide which is not identified by technical name in the Organic Peroxides Table of this section, or a formulation of one or more organic peroxides which are identified by technical name in that table, unless the organic peroxide is assigned a generic type and shipping description and is approved by the Associate Administrator for Hazardous Materials Safety under the provisions of §173.128(c) of this subchapter.

(2) Except as provided under the provisions of an approval under §173.128(c) of this subchapter, bulk packagings are not authorized.

(3) Non-bulk packagings are authorized as specified in the Packing Method Table for Generic Types, as follows. Column 1 of the table specifies the generic type by identification (ID) number from the §172.101 Table. Column 2 of the table specifies the generic proper shipping name from the §172.101 Table. Column 3 of the table specifies the series of packing methods authorized for use (e.g., "OP1A-OP5A" means that packing methods OP1A, OP2A, OP3A, OP4A, and OP5A are authorized). The Table of Packing Methods in paragraph (d) of this section defines the packing methods. The Packing Method Table for Generic Types is as follows:

§173.225(c).—PACKING METHOD TABLE FOR GENERIC TYPES

UN No. (1)	Proper shipping name (2)	Packing method (3)
UN3101	Organic peroxide type B, liquid	OP1A-OP5A
UN3102	Organic peroxide type B, solid	OP1B-OP5B
UN3103	Organic peroxide type C, liquid	OP1A-OP6A
UN3104	Organic peroxide type C, solid	OP1B-OP6B
UN3105	Organic peroxide type D, liquid	OP1A-OP7A
UN3106	Organic peroxide type D, solid	OP1B-OP7B
UN3107	Organic peroxide type E, liquid	OP1A-OP8A
UN3108	Organic peroxide type E, solid	OP1B-OP8B
UN3109	Organic peroxide type F, liquid	OP1A-OP8A
UN3110	Organic peroxide type F, solid	OP1B-OP8B
UN3111	Organic peroxide type B, liquid, temperature controlled	OP1A-OP5A
UN3112	Organic peroxide type B, solid, temperature controlled	OP1B-OP5B
UN3113	Organic peroxide type C, liquid, temperature controlled	OP1A-OP6A
UN3114	Organic peroxide type C, solid, temperature controlled	OP1B-OP6B
UN3115	Organic peroxide type D, liquid, temperature controlled	OP1A-OP7A
UN3116	Organic peroxide type D, solid, temperature controlled	OP1B-OP7B
UN3117	Organic peroxide type E, liquid, temperature controlled	OP1A-OP8A
UN3118	Organic peroxide type E, solid, temperature controlled	OP1B-OP8B
UN3119	Organic peroxide type F, liquid, temperature controlled	OP1A-OP8A
UN3120	Organic peroxide type F, solid, temperature controlled	OP1B-OP8B

(4) *Samples.* Samples of new organic peroxides or new formulations of organic peroxides identified in the Organic Peroxides Table in paragraph (b) of this section, for which complete test data are not available, and which are to be transported for further testing or evaluation, may be assigned an appropriate shipping description for organic peroxide Type C, packaged and offered for transportation, under the following conditions:

(i) Data available to the person offering the material for transportation must indicate that the sample would pose a level of hazard no greater than that of an organic peroxide Type B and that the control temperature, if any, is sufficiently low to prevent any dangerous decomposition and sufficiently high to prevent any dangerous phase separation;

(ii) The sample must be packaged in accordance with packing method OP2A or OP2B, for a liquid or solid, respectively;

(iii) Packages of the organic peroxide may be offered for transportation and transported in a quantity not to exceed 10 kg (22 pounds) per transport vehicle; and

(iv) One of the following shipping descriptions must be assigned:

(A) Organic peroxide Type C, liquid, 5.2, UN 3103;

(B) Organic peroxide Type C, solid, 5.2, UN 3104;

(C) Organic peroxide Type C, liquid, temperature controlled, 5.2, UN 3113; or

(D) Organic peroxide Type C, solid, temperature controlled, 5.2, UN 3114.

(d) *Tables of Packing Methods.* The tables in this paragraph specify the types of packagings and quantity

limitations that apply for each packing method in the series OP1A-OP8A, for liquids (Packagings for Liquid Organic Peroxides), and the series OP1B-OP8B, for solids (Packaging for Solid Organic Peroxides). In each table, Column 1a specifies the type of packaging, Column 1b specifies the packaging code, and Columns 2a through 2h specify the packing methods.

(1) A liquid organic peroxide for which a packing method is specified in paragraph (b) or (c) of this section must be packaged in accordance with the following provisions:

§173.225(d)(1)—PACKAGINGS FOR LIQUID ORGANIC PEROXIDES

Type and materials	Packaging code	Maximum quantity or net mass per packing method ¹							
		OP1A ²	OP2A ²	OP3A ²	OP4A ²	OP5A ²	OP6A ²	OP7A	OP8A
Steel drum	1A1	(*)	(*)	(*)	(*)	(*)	(*)	60 L	225 L
Steel drum ³	1A2	(*)	(*)	(*)	(*)	(*)	(*)	50 kg	200 kg
Aluminum drum	1B1	(*)	(*)	(*)	(*)	(*)	(*)	60 liters	225 liters
Fiber drum ³	1G	0.5 kg	0.5/10 kg	5 kg	5/25 kg	25 kg	50 kg	50 kg	200 kg
Plastics drum	1H1	0.5 L	0.5 L	5 L	5 L	30 L	60 L	60 L	225 L
Plastics jerrycan	3H1	0.5 L	0.5 L	5 L	5 L	30 L	60 L	60 L	60 L
Wooden box ³	4C1	0.5 kg	0.5/10 kg	5 kg	5/25 kg	25 kg	50 kg	50 kg	100 kg
Plywood box ³	4D	0.5 kg	0.5/10 kg	5 kg	5/25 kg	25 kg	50 kg	50 kg	100 kg
Fiberboard box ³	4G	0.5 kg	0.5/10 kg	5 kg	5/25 kg	25 kg	50 kg	50 kg	100 kg
Plastics receptacle with outer steel drum	6HA1	(*)	(*)	(*)	(*)	(*)	(*)	60 L	225 L
Plastics receptacle with outer aluminum drum	6HB1	(*)	(*)	(*)	(*)	(*)	(*)	60 L	225 L
Plastics receptacle with outer fiber drum	6HG1	0.5 L	0.5 L	5 L	5 L	30 L	60 L	60 L	225 L
Plastics receptacle with outer fiberboard box	6HG2	0.5 L	0.5 L	5 L	5 L	30 L	60 L	60 L	60 L
Plastics receptacle with outer plastics drum	6HH1	0.5 L	0.5 L	5 L	5 L	30 L	60 L	60 L	225 L
Plastics receptacle with outer solid plastics box	6HH2	0.5 L	0.5 L	5 L	5 L	30 L	60 L	60 L	60 L

(*) = Prohibited for organic peroxide types B and C.

¹ = If two values are given, the first applies to the maximum net mass per inner receptacle and the second to the maximum net mass of the complete package.

² = For combination packagings containing organic peroxide type B or C, only plastics bottles, plastics jars, glass bottles or glass ampoules may be used as inner packagings. However, glass receptacles may only be used as inner receptacles for packing methods OP1A and OP2A.

³ = Only allowed as part of a combination packaging. Inner receptacles must be suitable for liquids.

(2) A solid organic peroxide for which a packing method is specified in paragraph (b) or (c) of this section

must be packaged in accordance with the following provisions:

§173.225(d)(2)—PACKAGINGS FOR SOLID ORGANIC PEROXIDES

Type and materials	Packaging code	Maximum quantity or net mass per packing method ¹							
		OP1B ²	OP2B ^{2,3}	OP3B ²	OP4B ²	OP5B ²	OP6B ²	OP7B	OP8B
Steel drum	1A2	(*)	(*)	(*)	(*)	(*)	(*)	50 kg	200 kg
Aluminum drum	1B2	(*)	(*)	(*)	(*)	(*)	(*)	50 kg	200 kg
Fiber drum	1G	0.5 kg	0.5/10 kg	5 kg	5/25 kg	25 kg	50 kg	50 kg	200 kg
Plastics drum	1H2	0.5 kg	0.5/10 kg	5 kg	5/25 kg	25 kg	50 kg	50 kg	200 kg

§173.225(d)(2)—PACKAGINGS FOR SOLID ORGANIC PEROXIDES, Continued

Type and materials	Packaging code	Maximum quantity or net mass per packing method ¹							
		OP1B ²	OP2B ^{2,3}	OP3B ²	OP4B ²	OP5B ²	OP6B ²	OP7B	OP8B
Wooden box	4C1	0.5 kg	0.5/10 kg	5 kg	5/25 kg	25 kg	50 kg	50 kg	100 kg
Plywood box	4D	0.5 kg	0.5/10 kg	5 kg	5/25 kg	25 kg	50 kg	50 kg	100 kg
Fiberboard box	4G	0.5 kg	0.5/10 kg	5 kg	5/25 kg	25 kg	50 kg	50 kg	100 kg
Plastics receptacle with outer steel drum	6HA1	(*)	(*)	(*)	(*)	(*)	(*)	50 kg	200 kg
Plastics receptacle with outer aluminum drum	6HB1	(*)	(*)	(*)	(*)	(*)	(*)	50 kg	200 kg
Plastics receptacle with outer fiber drum	6HG1	0.5 kg	0.5 kg	5 kg	5 kg	25 kg	50 kg	50 kg	200 kg
Plastics receptacle with outer fiberboard box	6HG2	0.5 kg	0.5 kg	5 kg	5 kg	25 kg	50 kg	50 kg	75 kg
Plastics receptacle with outer plastics drum	6HH1	0.5 kg	0.5 kg	5 kg	5 kg	25 kg	50 kg	50 kg	200 kg
Plastics receptacle with outer solid plastics box	6HH2	0.5 kg	0.5 kg	5 kg	5 kg	25 kg	50 kg	50 kg	75 kg

*Prohibited for organic peroxide types B and C.

¹If two values are given, the first applies to the maximum net mass per inner receptacle and the second to the maximum net mass of the complete package.

²For combination packagings containing organic peroxide type B or C, only non-metallic packagings allowed. However, glass receptacles may only be used as inner receptacles for packing methods OP1B and OP2B.

³If fire retardant partitions are used, the maximum net mass of the complete package may be 25 kg.

(e) *Bulk packagings for organic peroxides.* When bulk packagings are authorized under the provisions of the Organic Peroxides Table in paragraph (b) of this section, only the following packagings are authorized:

(1) *Rail cars.* DOT 103W, 103AW, 111A60F1, 111A60W1, 111A100F2, and 111A100W2 tank car tanks are authorized. DOT 103W, 111A60F1 and 111A60W1 tank car tanks must have bottom outlets effectively sealed from inside. Gauging devices are required on DOT 103W tank car tanks. Riveted tank car tanks are not authorized.

(2) *Cargo tanks.* Specification MC 310, MC 311, MC 312 and DOT 412 cargo tank motor vehicles with a tank design pressure of at least 172 kPa (25 psig) are authorized. Bottom outlets are not authorized.

(3) *Portable tanks.* (i) Specification IM 101 intermodal portable tanks are authorized as follows:

(A) Each tank must have a minimum design pressure of 267 kPa (39 psig), a minimum shell thickness of 6.35 mm (0.250 inch) mild steel.

(B) Bottom outlets are not authorized.

(C) Each tank must be equipped with at least two self-reclosing pressure relief devices of at least 7.6 cm (3.0 inches) diameter. The pressure relief devices must be set at a pressure that is determined by the following formula:

Pressure relief valve setting = 1.2 X [Vapor pressure of lading at 46°C (115°F) + Static head of lading + Pressure of gas padding, if any]

(ii) Specification 57 metal portable tanks are authorized only for tertbutyl cumyl peroxide, di-(2-tert-butylperoxyisopropyl)-benzene(s), and dicumyl peroxide.

(4) For tertiary butyl hydroperoxide (TBHP), each tank car, cargo tank or portable tank must contain 7.6 cm (3.0 inches) low density polyethylene (PE) saddles having a melt index of between 0.2 and 10.0 g/min (ASTM D1238, condition E) as part of the lading, with a ratio of PE to TBHP over a range of 0.008 to 0.012 by mass. Alternatively, plastic or metal containers equipped with fusible plugs having a melting point between 69°C (156°F) and 71°C (160°F) and filled with a sufficient quantity of water to dilute the TBHP to 65 percent or less by mass may be used. The PE saddles must be visually inspected after each trip and, at a minimum, once every 12 months, and replaced when discoloration, fracture, severe deformation, or other indication of change is noted.

§173.226 Materials poisonous by inhalation, Division 6.1, Packing Group I, Hazard Zone A.

Division 6.1, Packing Group I, materials that are poisonous by inhalation and that fall within the boundaries of Hazard Zone A in the graph found in §173.133 must be packed in non-bulk packagings in accordance with the following paragraphs:

(a) In specification cylinders, as authorized in §173.40.

(b) In 1A1, 1B1, 1H1, 1N1, or 6HA1 drums further packed in a 1A2 or 1H2 drum. Both inner and outer drums must conform to the performance test requirements of Subpart M of Part 178 of this subchapter at the Packing Group I performance level. The outer drum must have a minimum thickness of 1.35 mm (0.053 in-

APPENDIX B
EPA INCOMPATIBILITY EVALUATION METHOD

D-34 Proposal P 168

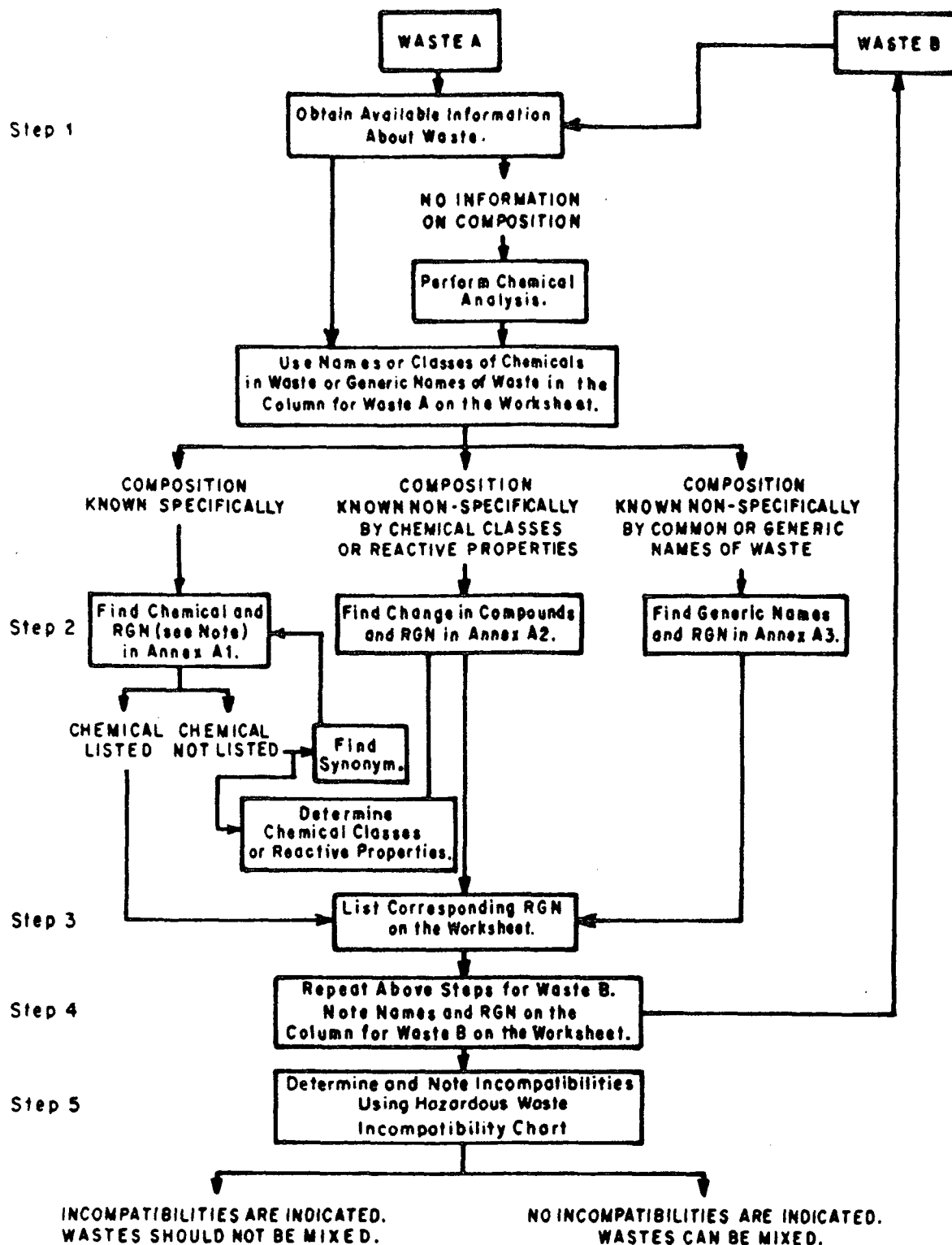


FIG. 1 Flow Diagram for Determining Hazardous Waste Incompatibility

APPENDIX C
LAB PACK - DRUM INVENTORY

Generator Name:

CCC Profile No.: _____

DOT Shipping Name:

Generator Drum No.: _____ **Sheet** _____ **of** _____ **per drum**

Hazard Class:

UN/NA ID No. _____ PG _____ Outer Container Type/Size: _____

PG _____ Outer Container Type/Size: _____

Outer Container Type/Size: _____

NOTE: Only one DOT hazard class/division materials in every lab pack container. Segregate hazardous class 6.1, packing group I.

[illegible]

NOTE: Line item numbers in this sheet must be entered on labels affixed to inner containers holding materials/chemicals identified in the corresponding line. Chemicals/Materials that appear in the "U" or "P" hazardous waste list must have the EPA hazardous waste code; otherwise, enter "used", "spent" or "more than one active ingredient", if it applies, to explain why the code is not assigned.

CERTIFICATION: The listing above is an accurate and complete description of the contents of this drum and they are packed in accordance to 49 CFR §173.12.

Generator Name: _____ and Signature: _____ Packed by: _____

*** Physical State: S=Solid; L=Liquid; R=Residue (Sludge); A=Aerosol; G=Gas**

**** Container Type:** G=Glass; M=Metal; P=Plastic; F=Fiber; A=Aerosol Can; C=Gas Cylinder

APPENDIX D
WASTE MATERIAL PROFILE

F) TOXICITY CHARACTERISTICS/ Indicate concentration levels (C.L.) for T.C. constituents shown below. See instructions for (1), (2), (3) below.

(1) Signs below indicate (+) Heavy Metals, (-) Pesticides and Herbicides, (X) Volatile Organics, (÷) Acid Extractables, (0) Base/Neutrals

(2) For REGULATORY C.L. " $\frac{1}{2}$ " <0.5 " indicates greater than or equal to 0.5 (regulated); " $\frac{1}{2}$ " <0.5 " indicates less than 0.5

(3) Please indicate EXACT C.L. test method: TCLP ___; E.P. TOX ___; Total ___; and unit: mg/L ___ mg/kg ___ ppm ___ ppb ___ Other ___

WASTE CODE(1)	T.C. CONSTITUENTS	REGULATORY C.L.	(2)(mg/L)	EXACT C.L.(3)	WASTE CODE(1)	T.C. CONSTITUENTS	REGULATORY C.L.	(2)(mg/L)	EXACT C.L.(3)
D004	+ Arsenic	___	≥ ___	<5.0	D024	÷ m-Cresol	___	≥ ___	<200.0
D005	+ Barium	___	≥ ___	<100.0	D025	÷ p-Cresol	___	≥ ___	<200.0
D006	+ Cadmium	___	≥ ___	<1.0	D026	÷ Cresol	___	≥ ___	<200.0
D007	+ Chromium	___	≥ ___	<5.0	D027	X 1,4-Dichlorobenzene	___	≥ ___	<7.5
D008	+ Lead	___	≥ ___	<5.0	D028	X 1,2-Dichloroethane	___	≥ ___	<0.5
D009	+ Mercury	___	≥ ___	<0.2	D029	X 1,1-Dichloroethylene	___	≥ ___	<0.7
D010	+ Selenium	___	≥ ___	<1.0	D030	0 2,4-Dinitrotoluene	___	≥ ___	<0.13
D011	+ Silver	___	≥ ___	<5.0	D031	- Heptachlor	___	≥ ___	<0.008
D012	-- Endrin	___	≥ ___	<0.02	D032	0 Hexachlorobenzene	___	≥ ___	<0.13
D013	-- Lindane	___	≥ ___	<0.4	D033	0 Hexachlorobutadiene	___	≥ ___	<0.5
D014	-- Methoxychlor	___	≥ ___	<10.0	D034	0 Hexachloroethane	___	≥ ___	<3.0
D015	-- Toxaphene	___	≥ ___	<0.5	D035	X Methyl Ethyl Ketone	___	≥ ___	<200.0
D016	-- 2,4-D	___	≥ ___	<10.0	D036	0 Nitrobenzene	___	≥ ___	<2.0
D017	-- 2,4,5-TP (Silvex)	___	≥ ___	<1.0	D037	÷ Pentachlorophenol	___	≥ ___	<100.0
D018	X Benzene	___	≥ ___	<0.5	D038	0 Pyridine	___	≥ ___	<5.0
D019	X Carbon Tetrachloride	___	≥ ___	<0.5	D039	X Tetrachloroethylene	___	≥ ___	<0.7
D020	-- Chlordane	___	≥ ___	<0.03	D040	X Trichloroethylene	___	≥ ___	<0.5
D021	X Chlorobenzene	___	≥ ___	<100.0	D041	÷ 2,4,5-Trichlorophenol	___	≥ ___	<400.0
D022	X Chloroform	___	≥ ___	<6.0	D042	÷ 2,4,6-Trichlorophenol	___	≥ ___	<2.0
D023	÷ o-Cresol	___	≥ ___	<200.0	D043	X Vinyl Chloride	___	≥ ___	<0.2

G) WASTE MANAGEMENT INFORMATION/ Is this a RCRA/EPA Hazardous Waste? NO ___ YES ___

If Yes list all EPA Hazardous Waste Codes _____

Is this a land banned waste? No ___ Yes ___ (A completed land ban form shall accompany every manifest and generator must keep a copy)

H) SHIPPING INFORMATION/ Is this waste a DOT Hazardous Material? NO ___ YES ___

Proper Shipping Name _____

Hazard Class _____ PG _____ UN/NA ID No. _____ INHALATION HAZARD? YES ___ NO ___ MARINE POLLUTANT? YES ___ NO ___

Two major components to be disclosed in the U.S. DOT Description: _____

I) NESHAP-BENZENE REQUIREMENT INFORMATION/(If you answer "NO" to any of the first 3 questions, do not continue)

DOES THIS WASTE: CONTAIN BENZENE ≥10PPM? YES ___ NO ___; ... HAS AN ANNUAL AVERAGE WATER CONTENT >10%? YES ___ NO ___; ... IS GENERATED BY A HAZARDOUS WASTE TSD FACILITY OR ONE HAVING A STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE 2800-2899, 2911 OR 3312? YES ___ NO ___; ... AND OTHER WASTE STREAM(S) GENERATED BY THE FACILITY, FOR ALL OF WHICH THE ANSWER TO THE PREVIOUS QUESTIONS HAVE BEEN "YES" CONTAIN A TOTAL ANNUAL BENZENE QUANTITY ≥ 10 Mg/YEAR? YES ___ NO ___. IF YOU HAVE ANSWERED "YES" TO THE FOUR QUESTIONS ABOVE, THEN, THIS WASTE IS SUBJECT TO THE BENZENE EMISSION CONTROL REQUIREMENTS OF 40 CFR PART 61, SUBPART FF, UNLESS IT IS COVERED BY AN EXEMPTION. IS THIS WASTE SUBJECT TO THE 40 CFR PART 61, SUBPART FF? YES ___ NO ___; IF YOU ENTERED "YES" IN THE LAST QUESTION OR IN THE FIRST THREE QUESTIONS ABOVE, PLEASE INDICATE THE CONCENTRATION OF BENZENE IN THE WASTE STREAM IN PPM _____

J) COLLECTION INFORMATION/

Anticipated approximate amount per collection _____ VOL/WT Unit: _____ Every _____ Month(s) _____ Year(s)

Containers size(s) and type(s): _____ (Please match sizes and types if more than one.)

K) COMMENTS/ _____**L) CERTIFICATION/**

I _____ hereby certify that all the information submitted in this and all attached documents is complete and accurate. All known and suspected hazards have been disclosed.

Title _____ Date _____ Signature _____

APPENDIX E
LAND BAN FORM
AND
F039 CONSTITUENTS TABLE

Chemical Conservation Corporation
And
Chemical Conservation of Georgia, Inc.
LAND DISPOSAL RESTRICTION NOTIFICATION AND CERTIFICATION FORM

FROM: Generator Name _____ Document Manifest No. _____

CHEM-CON Approval # 11A _____ 11B _____ 11C _____ 11D _____

The waste(s) identified on the indicated manifest and bearing the indicated EPA Hazard Waste Code(s) are subject to the land disposal restrictions of 40 CFR Part 268. The regulatory requirement and information applicable to the restricted waste is shown in this form.

PLEASE MARK THE APPROPRIATE BOX IN EACH SECTION.

1. 11A ☐ 11B ☐ 11C ☐ 11D ☐ This is a wastewater stream. 11A ☐ 11B ☐ 11C ☐ 11D ☐ This is a non-wastewater stream.
2. 11A ☐ 11B ☐ 11C ☐ 11D ☐ A waste analysis is attached. 11A ☐ 11B ☐ 11C ☐ 11D ☐ A waste analysis is not attached.
3. 11A ☐ 11B ☐ 11C ☐ 11D ☐ 268.7(a)(1): The waste does not meet the applicable standards in 40 CFR 268 Subpart D and/or exceeds the applicable prohibition levels in 40 CFR 268.32 or RCRA 3004(d)(California List) and may not be land disposed until it meets the standards listed below.

A: CHECK APPROPRIATE BOX(ES) FOR CORRESPONDING HAZARDOUS WASTE CODE(S), CONSTITUENTS AND SUBCATEGORY(IES).
USE TABLE B FOR WASTE CODES NOT FOUND IN THIS LISTING.

Line Item of Section 11 in Manifest	Waste Code	Constituent/ Subcategory	Instability Group		Line Item of Section 11 in Manifest	Waste Code	Constituent/ Subcategory	Instability Group			
			mg/kg (TOTAL)	mg/L (TOTAL)				mg/kg (TOTAL)	mg/L (TOTAL)		
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F001	Carbon Tetrachloride	5.6	N/A	0.057	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F005	Toluene	28.0	N/A	0.08
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F001	Methylene Chloride	33.0	N/A	0.089	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F005	Pyridine	16.0	N/A	0.014
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F001	Tetrachloroethylene	5.6	N/A	0.056	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D001	Ignitable Liquid/ (≥ 10% TOC)	(5*)	(5*)	N/A
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F001	1,1,1-Trichloroethane	5.6	N/A	0.054	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D001	Ignitable Liquid/ (1% < TOC < 10%)	(3*)	(3*)	N/A
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F001	Trichloroethylene	5.6	N/A	0.054	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D001	Ignitable Liquid/ (< 1% TOC + < 1% TSS)	N/A	N/A	(3*)
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F001	1,1,2-Trichloro- 1,2,2-Trifluoroethane	28.0	N/A	0.057	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D001	Ignitable Liquid/ (Compressed Gas)	(3*)	(3*)	N/A
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F001	Trichlorofluoromethane	33.0	N/A	0.02	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D001	Ignitable Liquid/ (Compressed Gas)	(3*)	(3*)	N/A
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F002	Chlorobenzene	5.7	N/A	0.057	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D004	Arsenic	N/A	5.0	5.0
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F002	1,2-Dichlorobenzene	6.2	N/A	0.088	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D005	Barium	N/A	100.0	100.0
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F002	Methylene Chloride	33.0	N/A	0.089	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D006	Cadmium	N/A	1.0	1.0
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F002	Methylene Chloride (Pharmaceutical use)	N/A	N/A	0.44	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D007	Chromium Total	N/A	5.0	5.0
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F002	Tetrachloroethylene	5.6	N/A	0.056	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D008	Lead	N/A	5.0	5.0
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F002	1,1,1-Trichloroethane	5.6	N/A	0.054	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D009	Low Mercury (<260 mg/kg Mercury)	N/A	0.2	0.2
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F002	1,1,2-Trichloroethane	7.6	N/A	0.030	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D009	High Mercury with Organics/ (≥260 mg/kg Mercury)	(7*)	(7*)	N/A
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F002	Trichloroethylene	5.6	N/A	0.054	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D009	High mercury without Organics/ (≥260 mg/kg Mercury)	(8*)	(8*)	N/A
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F002	1,1,2-Trichloro- 1,2,2-Trifluoroethane	28.0	N/A	0.057	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D009	Mercury	N/A	N/A	0.02
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F002	Trichlorofluoromethane	33.0	N/A	0.02	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D010	Selenium	N/A	5.7	1.0
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F003	Acetone	160.0	N/A	0.28	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	D011	Silver	N/A	5.0	5.0
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F003	N-Butyl Alcohol	2.6	N/A	5.6	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	U002	Acetone	160.0	N/A	0.28
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F003	Cyclohexanone	N/A	0.75	N/A	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	U031	n-Butanol	2.6	N/A	5.6
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F003	Ethyl Acetate	33.0	N/A	0.34	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	U112	Ethyl Acetate	33.0	N/A	0.34
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F003	Ethyl Benzene	6.0	N/A	0.057	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	U140	Isobutanol	170.0	N/A	5.6
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F003	Ethyl Ether	160.0	N/A	0.12	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	U154	Methanol	(6*)	N/A	(4*)
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F003	Methanol	N/A	0.75	N/A	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	U161	Methyl Ethyl Ketone	36.0	N/A	0.28
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F003	Methyl Isobutyl Ketone	33.0	N/A	0.14	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	U161	Methyl Isobutyl Ketone	33.0	N/A	0.14
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F005	Xylene	28.0	N/A	0.32	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	U220	Toluene	28.0	N/A	0.08
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F005	Benzene	3.7	N/A	0.070	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	U226	1,1,1-Trichloroethane	5.6	N/A	0.054
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F005	2-Ethoxyethanol	(1*)	N/A	(2*)	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	U228	Trichloroethylene	5.6	N/A	0.054
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F005	Carbon Disulfide	N/A	4.8	N/A	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	U239	Xylene	28.0	N/A	0.32
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F005	Isobutanol	170.0	N/A	5.6						
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F005	Methyl Ethyl Ketone	36.0	N/A	0.28						
A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>	F005	2-Nitropropane	(1*)	N/A	(4*)						

(1*) = INCIN, (2*) = BIODG or INCIN, (3*) = DEACT, (4*) = (WETOX OR CHOXD) or CARBN or INCIN, (5*) = FSUBS, RORGS or INCIN, (6*) = FSUBS or INCIN, (7*) = IMERC; or RMERC, (8*) = RMERC, TOC: TOTAL ORGANIC COMPOUNDS, TSS: TOTAL SUSPENDED SOLIDS

B: ENTER WASTE CODE(S), SUBCATEGORY(IES), TREATMENT STD.(S) AND TECHNOLOGY CODE(S) FOR CODES NOT FOUND ABOVE IN A.

SPECIFY LINE ITEM IN MANIFEST				US EPA WASTE CODE	SUBCATEGORY (if any)	PERFORMANCE BASED TREATMENT STD		TREATMENT TECHNOLOGY 268.42 SPECIFY TECHNOLOGY CODE
11A	11B	11C	11D			268.41 (a)	268.43 (a)	

This waste(s) may need to be treated for restricted F039 constituents in accordance with the following paragraph: Does the D001 and D002 waste(s) entered above (in Sec. A or B) for which the Treatment Technology Code is DEACT [(3*) in Sec. A], contain any F039 constituents in concentration levels exceeding their treatment standards shown in the attached sheet? No Yes. If YES, please circle the exceeded standards on the sheet and indicate waste stream(s) affected: _____ 11A _____ 11B _____ 11C _____ 11D

I certify that under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification.

Print Name _____ Signature _____ Date: _____
LD1

**P039 CONSTITUENTS AND TREATMENT STANDARDS FOR
D001 AND D002 WASTES SUBJECT TO DEACT
TREATMENT METHODS**

CCW - 268.43			CCW - 268.43			CCW - 268.43		
WW			WW			WW		
mg/l			mg/l			mg/l		
mg/kg			mg/kg			mg/kg		
Constituent	(ppm)	(ppm)	Constituent	(ppm)	(ppm)	Constituent	(ppm)	(ppm)
Acetone	0.28	160	m-Dichlorobenzenes	0.036	6.2	Naphthalene	0.059	3.1
Acenaphthalene	0.059	3.4	o-Dichlorobenzenes	0.088	6.2	2-Naphthylamine	0.52	N/A
Acenaphthene	0.059	4.0	p-Dichlorobenzenes	0.090	6.2	p-Nitroaniline	0.028	28
Acetonitrile	0.17	N/A	Dichlorodifluoromethane	0.23	7.2	Nitrobenzenes	0.068	14
Acetophenone	0.010	9.7	1,1-Dichloroethane	0.059	7.2	5-Nitro-2-toluidine	0.32	28
2-Acetylaminofluorene	0.059	140	1,2-Dichloroethane	0.21	7.2	4-Nitrophenol	0.12	29
Acrolein	0.29	N/A	1,1-Dichloroethylene	0.025	33	N-Nitrosodimethylamine	0.40	28
Acrylonitrile	0.24	84	trans-1,2-Dichloroethylene	0.054	33	N-Nitrosodimethylamine	0.40	N/A
Aldrin	0.021	0.066	2,4-Dichlorophenol	0.044	14	N-Nitroso-di-n-butylamine	0.40	17
4-Aminobiphenyl	0.13	N/A	2,6-Dichlorophenol	0.044	14	N-Nitrosomethylthylamine	0.40	2.3
Aniline	0.810	14	1,2-Dichloropropane	0.85	18	N-Nitrosomorpholine	0.40	2.3
Anthracene	0.059	4.0	cis-1,3-Dichloropropene	0.036	18	N-Nitrosopiperidine	0.013	35
Aramite	0.36	N/A	trans-1,3-Dichloropropene	0.036	18	N-Nitrosopyrrolidine	0.013	35
Aroclor 1016	0.013	0.92	Dieldrin	0.017	0.13	Parathion	0.014	4.6
Aroclor 1221	0.014	0.92	Diethyl phthalate	0.20	28	Pentachlorobenzenes	0.055	37
Aroclor 1232	0.013	0.92	2,4-Dimethyl phenol	0.036	14	Pentachlorodibenzo-furans	0.000063	0.001
Aroclor 1242	0.017	0.92	Dimethyl phthalate	0.047	28	Pentachlorodibenzo-p-		
Aroclor 1248	0.013	0.92	Di-n-butyl phthalate	0.057	28	dioxins	0.000063	0.001
Aroclor 1254	0.014	1.8	1,4-Dinitrobenzenes	0.32	2.3	Pentachloronitrobenzene	0.055	4.8
Aroclor 1260	0.014	1.8	4,6-Dinitro-o-cresol	0.28	160	Pentachlorophenol	0.089	7.4
alpha-BHC	0.00014	0.066	2,4-Dinitrophenol	0.12	160	Phenacetin	0.081	16
beta-BHC	0.00014	0.066	2,4-Dinitrotoluene	0.32	140	Phenanthrene	0.059	3.1
delta-BHC	0.023	0.066	2,6-Dinitrotoluene	0.55	28	Phenol	0.039	6.2
gamma-BHC	0.0017	0.066	Di-n-octyl phthalate	0.017	28	Phorase	0.021	4.6
Benzene	0.140	36	Di-n-propylnitrosamines	0.40	14	Phthalic anhydride	0.069	N/A
Benzo (a) anthracene	0.059	8.2	Diphenylamine	0.52	N/A	Proxamide	0.093	1.5
Benzo (b) fluoranthene	0.055	3.4	1,2-Diphenyl hydrazine	0.087	N/A	Pyrene	0.067	8.2
Benzo (k) fluoranthene	0.059	3.4	Diphenyl nitrosamine	0.40	N/A	Pyridine	0.014	16
Benzo (g,h,i) perylene	0.0055	1.5	1,4-Dioxane	0.12	170	Safrole	0.081	22
Benzo (a) pyrene	0.061	8.2	Disulfoton	0.017	6.2	Silvex (2,4,5-TP)	0.72	7.9
Bromodichloromethane	0.35	15	Endosulfan I	0.023	0.066	2,4,5-T	0.72	7.9
Bromoform (tribromomethane)	0.63	15	Endosulfan II	0.029	0.13	1,2,4,5-Tetrachlorobenzenes	0.055	19
Bromomethane(methyl bromide)	0.11	15	Endosulfan sulfate	0.029	0.13	Tetrachlorodibenzo-furans	0.000063	0.001
4-Bromophenyl phenyl ether	0.055	15	Endrin	0.0028	0.13	Tetrachlorodibenzo-p-		
n-Butanol (n-Butyl alcohol)	5.6	2.6	Ethyl aldehyde	0.025	0.13	dioxins	0.000063	0.001
Butyl benzyl phthalate	0.017	7.9	Ethyl acetate	0.34	33	1,1,1,2-Tetrachloroethane	0.057	42
2-sec-Butyl-4,6-dinitrophenol	0.066	2.5	Ethyl benzene	0.057	6.0	1,1,2,2-Tetrachloroethane	0.057	42
Carbon tetrachloride	0.057	5.6	Ethyl cyanide	0.24	360	Tetrachloroethylene	0.056	5.6
Carbon disulfide	0.014	N/A	Ethyl ether	0.12	160	2,3,4,6-Tetrachlorophenol	0.030	37
Chlordane	0.0033	0.13	bis-(2-Ethylhexyl)			Toluene	0.080	28
p-Chloroaniline	0.46	16	phthalate	0.28	28	Toxaphene	0.0095	1.3
Chlorobenzene	0.057	5.7	Ethyl methacrylate	0.14	160	1,2,4-Trichlorobenzenes	0.055	19
Chlorobenzilate	0.10	N/A	Ethylene oxide	0.12	N/A	1,1,1-Trichloroethane	0.054	5.6
2-Chloro-1,3-butadiene	0.057	N/A	Famphur	0.017	15	1,1,2-Trichloroethane	0.054	5.6
Chlorodibromomethane	0.057	15	Fluoranthene	0.068	8.2	Trichloroethylene	0.054	5.6
Chloroethane	0.27	6.0	Fluorene	0.059	4.0	2,4,5-Trichlorophenol	0.18	37
bis-(2-Chloroethoxy)			Fluorotrichloromethane	0.020	33	1,2,3-Trichloropropene	0.85	28
methane	0.036	7.2	Heptachlor	0.0012	0.066	2,4,6-Trichlorophenol	0.035	37
bis-(2-Chloroethyl)			Heptachlor epoxide	0.016	0.066	1,1,2-Trichloro-1,2,2-		
ether	0.033	7.2	Hexachlorobenzenes	0.055	37	trifluoroethane	0.057	28
Chloroform	0.046	5.6	Hexachlorobutadiene	0.055	28	Tris (2,3-dibromopropyl)		
bis-(2-Chloroisopropyl)			Hexachlorocyclo-			phosphate	0.11	N/A
ether	0.055	7.2	pentadiene	0.057	3.6	Vinyl Chloride	0.27	33
p-Chloro-m-cresol	0.018	14	Hexachlorodibenzo-furans	0.000063	0.001	Xylene(s)	0.32	28
Chloromethane (Methyl			Hexachlorodibenzo-p-			Cyanides (Total)	1.2	1.8
chloride)	0.19	33	dioxins	0.000063	0.001	Cyanides (Amenable)	0.86	N/A
2-Chloronaphthalene	0.055	5.6	Hexachloroethane	0.055	28	Fluoride	35	N/A
2-Chlorophenol	0.044	5.7	Hexachloropropene	0.035	28	Sulfide	14	N/A
3-Chloropropylene	0.036	28	Indeno (1,2,3-c,d) pyrene	0.0055	8.2			
Chrysene	0.059	8.2	Iodomethane	0.19	65	METALS		
o-Cresol	0.11	5.6	Isobutanol	5.6	170	Antimony	0.23*	1.9
Cresol (m- & p- isomers)	0.77	3.2	Isodrin	0.021	0.066	Arsenic	5.0*	1.4
Cyclohexanone	0.36	N/A	Isosafrole	0.081	2.6	Barium	52*	1.2
1,2-Dibromo-3-Chloropropane	0.11	15	Kepon	0.0011	0.13	Beryllium	0.82	N/A
1,2-Dibromoethane (Ethyl-			Methacrylonitrile	0.24	84	Cadmium	0.066*	0.20
lene dibromide)	0.028	15	Methanol	5.6	N/A	Chromium (Total)	5.2*	0.37
Dibromomethane	0.11	15	Methapyrene	0.081	1.5	Copper	1.3	N/A
2,4-Dichlorophenoxyacetic			Methoxychlor	0.25	0.18	Lead	0.51*	0.28
acid (2,4-D)	0.72	10	3-Methylcholanthrene	0.0055	15	Mercury	0.025*	0.15
o,p-DDD	0.023	0.087	4,4-Methylene-Bis-			Nickel	0.32*	0.55
p,p-DDD	0.023	0.087	(2-chloroaniline)	0.50	35	Selenium	5.7*	0.82
o,p-DDE	0.031	0.087	Methylene chloride	0.089	33	Silver	0.072*	0.29
p,p-DDE	0.031	0.087	Methyl ethyl ketone	0.28	36	Thallium	1.4	N/A
o,p-DDT	0.0039	0.087	Methyl isobutyl ketone	0.14	33	Vanadium	0.042	N/A
p,p-DDT	0.0039	0.087	Methyl methacrylate	0.14	160	Zinc	1.0	N/A
Dibenz (a,h) anthracene	0.055	8.2	Methyl methansulfonate	0.018	N/A			
Dibenzo(a,e)pyrene	0.061	N/A	Methyl parathion	0.014	4.6			

* CCWE - 268.41(a)
NWW (TCLP) mg/l