

**Texas A&M University System
Health Science Center
Institute of Biosciences and Technology
Safety Office**

HAZARDOUS WASTE PROGRAM

Table of Contents

I.	Introduction
II.	Definitions
III.	Hazardous Waste Disposal Regulations
IV.	Hazardous Waste Disposal Program
V.	Emergency Response to Hazardous Waste Spills
VI.	Guidelines For Disposal of Non-Hazardous Wastes
Appendix A	Identification of Hazardous Waste
Appendix B	Common Halogenated and Non-Halogenated Organic Solvents
Appendix C	Completing the IBT Chemical Waste Disposal Form

I. INTRODUCTION

The purpose of this document is to give faculty, staff, employees, and students at the Institute of Biosciences and Technology (IBT) a better understanding of federal and state hazardous waste disposal regulations and explain the Institute's compliance program.

The Safety Office administers the Hazardous Waste Management Program at IBT. Compliance with the program is critical and requires full cooperation by all waste generators. The main focus of the program is the management of hazardous chemical waste and does not include the management of radioactive, infectious and biological waste..

IBT is currently classified as a "Conditionally Exempt Small Quantity Generator" (CESQG) of hazardous waste and must comply with the State and Federal regulations on waste disposal associated with this classification. CESQG are exempt from most U.S. Environmental Protection Agency (EPA) regulations. CESQG are not subject to accumulation time limits, but they are subject to accumulation volume limits. IBT is not permitted to treat or dispose of waste locally. All waste must be transported to a permitted off-site facility for further storage, treatment, and/or disposal. It is illegal to dispose of hazardous waste by dilution, evaporation, or dumping into the sanitary or storm sewers or into the local landfill. The Safety Office collects, transports, and properly stores hazardous waste until shipped for disposal, and maintains permanent records of all disposed waste.

Individual users of hazardous materials have specific duties and responsibilities under state and federal law and IBT policy regarding hazardous waste handling and disposal. These responsibilities include hazardous waste identification and waste minimization as well as proper waste storage and disposal.

II. DEFINITIONS

Central Accumulation Area - Area(s) designated by the Safety Office to be used for the storage of hazardous wastes prior to shipment to permitted disposal facilities.

Disposal - The discharge, deposit, injection, dumping, spilling, or placing of any solid waste or hazardous waste (whether containerized or uncontainerized) into or on any land or water so that such solid waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any water, including ground waters.

EPA Identification Number - The number assigned by the EPA to each generator, transporter, and processing, storage or disposal facility.

Generator - Any person, by site, who produces municipal hazardous waste or industrial solid waste; any person who possesses municipal hazardous waste or industrial solid waste to be shipped to any other person; or any person whose act first causes the solid waste to become subject to regulation. Person refers to an individual, trust, firm corporation, Federal Agency, State, Political subdivision of a State, municipality, or any interstate body.

Hazardous Material - a substance or material, including a hazardous substance, which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated.

Hazardous Waste - Any solid waste material listed or identified in Title 40 Code of Federal Regulations, Part 261, Subpart C and D or exhibiting the characteristics of ignitability, corrosivity, reactivity, or EPA toxicity also defined in Part 261. Tables containing the listing and characteristics of hazardous wastes are shown in Appendix A.

Manifest - A legal document containing required information, which must accompany shipments of municipal hazardous waste or Class I industrial solid waste transported on public roads or thoroughfares.

Mixed Waste - A radioactive waste that is also a hazardous waste.

Permit - A written document issued by the EPA or TNRCC that, by its conditions, authorizes the construction, installation, modification, or operation of a specified municipal hazardous waste or industrial solid waste storage, processing, or disposal facility in accordance with specified limitations.

Processing - The extraction of materials, transfer, volume reduction, conversion to energy, or other separation and preparation of solid waste for reuse or disposal, including the treatment or neutralization of hazardous waste, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or as to recover energy or material from the waste or so as to render such waste non-hazardous or less hazardous; safer to transport, store, and dispose; or amenable for recovery, amenable for storage, or reduced in volume.

Satellite Accumulation Area - An area, system, or structure used for temporary accumulation of hazardous waste prior to transport to the central accumulation area.

Solid Waste - Any garbage, refuse, sludge from a waste treatment plant, water treatment plant, or air pollution control facility or other discarded material, including solid, liquid, semi-solid, or container gaseous material resulting from industrial, municipal, commercial, mining and agricultural operations, and from community and institutional activities.

Storage - The holding of solid waste for a temporary period, at the end of which the waste is processed, disposed of, recycled, or stored elsewhere.

Texas Solid Waste Number - The number assigned by the TNRCC to each generator, transporter, and processing, storage, or disposal facility

Universal Waste - Any hazardous waste subject to 40 CFR Part 273 and TAC 335.261 to include:

- a) Batteries including lead-acid that are not managed under 40 CFR 266, Subpart G;
- b) Recalled pesticides that are part of a voluntary or mandatory recall under FIFRA or pesticides managed as part of a waste pesticide program; and
- c) Mercury thermostats that are not hazardous using 40 CFR 261, Subpart C.

Waste - Any material for which there is no use and is to be discarded as valueless.

III HAZARDOUS WASTE DISPOSAL REGULATIONS

Federal and State regulations govern hazardous waste disposal. Non-compliance with any Hazardous Waste Regulation may result in substantial fines and penalties being assessed against IBT. Generators (IBT) may be cited or fined for violations that range from failure to properly label a container of hazardous waste to intentionally disposing of hazardous waste into the air, down the drain, or in the garbage. In addition, individual generators (i.e. principal investigators, employees) causing the violation may be personally liable.

A. Federal Regulations

The Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) as passed in 1976, is administered by the US Environmental Protection Agency (EPA) under Subtitle C, Hazardous Waste Management. Under this act, the EPA has the responsibility for regulating hazardous chemical wastes. RCRA established a “cradle to grave” hazardous waste management program to protect public health and the environment from improper disposal of hazardous waste. The law went into effect in November 1980.

B. Texas Regulations

The Texas Natural Resource Conservation Commission (TNRCC) administers a program equivalent to the RCRA for the State of Texas under the Industrial Solid Waste and Municipal Hazardous Waste Regulations (Title 31, Part IX, Chapter 335).

Hazardous waste generators must have an EPA Identification Number and a Texas Solid Waste Registration Number to store, process, dispose of, or transport hazardous waste. Hazardous waste cannot be offered to transporters or to storage, processing, or disposal facilities without these Numbers. Before transporting or offering hazardous waste for transportation to an off-site facility, all requirements of packaging, labeling, marking and placarding must be met. A completed and signed Uniform hazardous Waste Manifest must accompany every shipment.

Only EPA permitted Municipal Hazardous Waste (or Class I Industrial Hazardous Waste) Disposal Facility can accept hazardous waste. A limited number of facilities have approved incineration, neutralization, recycling, or landfill operations. A waste generator never totally loses liability for environmental damage; therefore, the selection of a reliable disposal facility is very important. In Texas, penalties for non-compliance may be civil, criminal, or administrative violations with penalties ranging from fines of up to \$25,000 per day to a 15-year prison term for individuals.

IV. HAZARDOUS WASTE DISPOSAL PROGRAM

The IBT Hazardous Waste Disposal Program, administered by the Safety Office:

1. Provides for collection of waste from labs
2. Provides technical information
3. Assistance to individual generators
4. Arranges for disposal services, and
5. Maintains permanent records of hazardous waste disposal.

A. Hazardous Waste Determination

A material is considered waste when the individual generator determines that it is no longer useful and should be discarded. Generators are responsible for following IBT disposal procedures, training employees in proper disposal procedures, and properly identifying the hazardous waste generated. The material is “hazardous waste” if it meets one or more of the following:

1. Is listed in 40 CFR 261.33 (Appendix A), or
2. It meets the definition of one of the following [40 CFR 261.21 - 261.24 (Appendix A)]:
 - (a) Ignitability (flashpoint < 60oC or supports combustion. Has an EPA Hazardous Waste Number of D001).
 - (b) Reactivity (e.g., responds violently to air or water, cyanides, explosives, unstable chemicals. Has an EPA Hazardous Waste Number of D003);
 - (c) Corrosivity (pH <4 or >10. Has an EPA Hazardous Waste Number of D002);
 - (d) EPA Toxicity (e.g., pesticides, heavy metals, poisons. Has an EPA Hazardous Waste Number of D004-D043);
 - (e) Universal Waste;
 - (f) Material is not excluded from regulations.
3. Is a mixture or solution containing a listed (Appendix A) waste and a non-hazardous waste.

B. Regulatory Compliance

The following requirements are designed to assure compliance with applicable federal and state requirements for the proper handling of hazardous waste and to reduce any potential impact on human health and the environment.

1. General
 - a. Hazardous chemicals can be treated to reduce the hazard or the quantity of waste in the laboratory if the treatment procedure is included in the experimental protocol.

- b. "Mixed Waste" (includes both radioactive material and hazardous chemicals) must be labeled to indicate all hazards present.
- c. Gas cylinders should be returned to the manufacturer or distributor whenever possible. Unreturnable cylinders should be tagged as hazardous waste.
- d. Photographic lab waste containing silver (fixers) must be disposed of as hazardous waste.
- e. Waste generators must maintain care, custody, and control of their hazardous waste accumulation areas.
- f. Do not store chemical waste in fume hoods

2. Containers

- a. Individual waste generators shall assure that their hazardous wastes are accumulated in safe, transportable containers and stored properly to prevent human exposure to or environmental release of the waste materials.
- b. Waste generators shall obtain their own waste containers. Containers must be in good condition and not leak. All containers must have suitable screw caps or other means of secure closure.
- c. Containers must be compatible with the chemical contents (i.e.; do not use metal containers for corrosive waste or plastic containers for organic solvents).
- d. Containers must be stored in a protected area that is accessible to waste disposal personnel.
- e. Containers for liquids must not be overfilled. Jugs and bottles should not be filled above the shoulder of the container. Closed head cans (5 gallons or less) should have at least two inches of head space between the liquid level and the head of the container.
- f. Depending on the density of the solid material, the weight capacity of the container could be exceeded if its internal volume were completely filled. This generally is not a problem for jars and open head cans (5 gallons or less). With due consideration to weight, containers for solids can be filled within two inches of the level of the closure.
- g. Containers must be closed or sealed to prevent leakage. ***All waste collection containers must be kept closed except when adding or removing material.***
- h. Empty Chemical Containers

Containers that held hazardous materials

EPA regulations stipulate that an empty chemical container must:

- (1) not contain free liquid or solid residue,
- (2) be triple rinsed (and the rinse collected as hazardous waste),
- (3) have the label removed or defaced,

- (4) have the lid or cap removed, and
- (5) have a hole punched in the bottom (metal or plastic containers).

When these requirements are satisfied, empty containers should be placed in a dumpster for disposal in a non-hazardous landfill. It is not necessary to break glass containers. Chemical containers not handled in this manner must be treated as hazardous waste (very expensive to dispose of).

Containers that held non-hazardous materials

The empty container must:

- (1) not contain free liquid or solid residue
- (2) have the label removed or defaced,
- (3) have the lid or cap removed, and
- (4) have a hole punched in the bottom (metal or plastic containers).

NOTE: *If custodial personnel have questions about an empty container, it will not be picked up.*

3. Segregation of Waste

a. Hazardous waste is divided into several categories:

- (1) Halogenated solvents*
- (2) Non-Halogenated solvents*
- (3) Acids (inorganic or organic)
- (4) Bases (inorganic or organic)
- (5) Heavy metals (silver, cadmium, lead, mercury, etc.)
- (6) Poisons (inorganic or organic)**
- (7) Reactives (cyanides, sulfides, water reactive chemical, peroxides, etc.)**

*See Appendix B for more information.

**See Appendix A for more information.

- b. Different categories of waste must not be co-mingled in the same waste container.
- c. Do not combine inorganic heavy metal compounds and organic waste solvents.
- d. Do not combine non-hazardous waste (i.e., mixture of water, dilute acetic acid, and sodium bicarbonate) with hazardous waste.
- e. Dry material (paper, rags, towels, gloves, or Kim Wipes, etc.) contaminated with flammable or extremely toxic chemicals must be double-bagged in heavy-duty plastic bags. The bagged materials must be treated as hazardous waste. **Do not use biohazard bags.**

- f. Sharps - (i.e., needles, razors, scalpel blades, etc.) must be collected in a container which will allow encapsulation prior to disposal in the dumpster. This usually means a plastic sharps container. When you dispose of sharps, they must be encapsulated even if the sharps were not contaminated with a hazardous agent. Encapsulation may be accomplished by various methods: plaster of Paris, wax or paraffin, or a commercial product such as an Isolyser. This is a requirement of the Texas Natural Resource Conservation Commission (TNRCC) which regulates the disposal of solid waste.

NOTE: *Do not dispose of sharps in cardboard boxes used to collect broken glass.*

- g. Broken Glass and other Sharp Glass Items - Broken glass, Pasteur pipettes, capillary tubes and other sharp glass items which are not contaminated with a hazardous agent are to be placed in a strong cardboard box (that can be closed). When full, the box **MUST** be taped closed and then placed out for removal by custodial personnel.

NOTE: *A box that is not taped closed will NOT be removed by custodial personnel.*

4. Labels

- a. The original chemical label must be destroyed or defaced on containers used for waste accumulation.
- b. The container must:
 - (1) Be marked with the words "Hazardous Waste"
 - (2) Be dated
 - (3) Have its contents fully identified on a label when the chemical waste is first added.

5. Disposal

- a. Containers with improper caps, leaks, outside contamination, or improper labeling will not be collected until these have been corrected by the generator.
- b. It is illegal to dispose of hazardous chemicals in any of the following ways:
 - (1) Disposal down the drain.
 - (2) Intentional evaporation in a fume hood
 - (3) Disposal in the regular trash.
- c. When the container is ready for disposal, complete a Waste Disposal Form (See Appendix C) and attach it to the container. **Print the information on the form legibly.** Call the Safety Office to schedule a pick-up.

V. EMERGENCY RESPONSE TO HAZARDOUS WASTE SPILLS

The following general rules should be followed in the event of a large (i.e. greater than 5 gallons of a typical solvent; much less for more toxic materials) hazardous materials spill or other emergency.

1. **ACTIVATE EVACUATION (FIRE) ALARM, IF NECESSARY, FOR THE BUILDING**
If the incident could threaten the health of individuals in the building activate the alarm. Be familiar with the sound of the alarm system in your facility.
2. **CALL FOR HELP, AND CALL SECURITY, IF NECESSARY, AT 677-7464.**
Get as much information as you can about the chemical. If possible, locate a Material Safety Data Sheet (MSDS). Be sure Security has been accurately informed as to the nature and location of the spill, and whether there are injuries requiring the assistance of an ambulance. Security will contact the Safety Office.
3. **ATTEND TO LIFE-THREATENING INJURIES**
The primary concern in the event of an emergency is to protect life and health of others.
4. **PREVENT ACCESS TO THE AREA**
Barricades of some sort should be set up to prevent inadvertent access to the area of the spill. This action may be necessary to prevent injury and to control the spread of contamination.
5. **CONTAIN THE SPILL TO PREVENT RELEASE TO THE ENVIRONMENT.**
If the spill can be safely contained, prevent release to the sanitary sewer system, the storm sewer, and/or the ground. Do not jeopardize your own safety.
6. **INITIATE MATERIAL SPECIFIC CLEAN-UP PROCEDURES.**
The Safety Office will assist in spill clean-up. However, accountability for the spill and disposal of spill residue belongs to the individual or department.

VI. GUIDELINES FOR DISPOSAL OF NON-HAZARDOUS WASTES

Not all laboratory wastes are hazardous and so should not be entered into the IBT hazardous waste program. The following guidelines for determining which non-hazardous laboratory wastes are suitable for disposal through normal waste channels were developed after careful review of TNRCC regulations.

1. No wastes which are defined as hazardous by EPA may be placed in the dumpsters. See appendix A for a complete listing of such wastes.

2. Liquid waste (i.e. bottles of unused or partially used solutions) may not be disposed of to the dumpsters, as liquid wastes are not permitted at the municipal landfill.
3. Empty containers of waste commercial products or chemicals are acceptable if the conditions listed on page 5 are met.
4. Orange or red-bagged biohazardous material must be placed in an opaque (black or white) outer bags once it has been sterilized. Visible biohazardous bags will not be accepted at the landfill. Bags must be labeled with heat sensitive tape indicating that they have been autoclaved.
5. Certain solid, non-hazardous chemicals are suitable for disposal to the sanitary landfill. However, such chemicals should not be placed in laboratory trash containers as custodial personnel have been instructed not to handle any chemical wastes. Non-hazardous solids should be placed directly into the dumpsters or given to Safety Office personnel for disposal.

The following types of solid laboratory wastes which are generally considered non-hazardous or of low toxicity and so may be put directly in the dumpsters. As noted above, solutions of such wastes should not be put in the dumpster. Check with the Safety Office about sewer disposal for such solutions.

a. Organic chemicals:

Sugars and starches

Naturally occurring α -amino acids and salts

Citric acid and its Na, K, Mg, Ca, NH_4 salts

Lactic acid and its Na, K, Mg, Ca, NH_4 salts

Agar

b. Inorganic chemicals

Sulfates: Na, K, Mg, Ca, Sr, NH_4

Phosphates: Na, K, Mg, Ca, Sr, NH_4

Carbonates: Na, K, Mg, Ca, Sr, NH_4

Oxides: B, Mg, Ca, Sr, Al, Si, Ti, Mn, Fe, Co, Cu, Zn

Chlorides: Na, K, Mg

Fluorides: Ca

Borates: Na, K, Mg, Ca

c. Laboratory materials not contaminated with hazardous chemicals:

Chromatographic absorbents

Filter paper, filter aids, and glassware

Rubber and plastic protective clothing

6. If there is any question as to whether a waste is acceptable for landfilling, please contact the Safety Office.

APPENDIX A

IDENTIFICATION OF HAZARDOUS WASTE

40 CFR 261.21 Characteristic of Ignitability.

- F. A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:
1. It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume and has flash point less than 60C (140F), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D-93-79 or D-93-80 (incorporated by reference, see 40 CFR 260.11), or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D-3278-78 (incorporated by reference, see 40 CFR 260.11), or as determined by an equivalent test method approved by the Administrator under procedures set forth in 40 CFR 260.20 and 40 CFR 260.21.
 2. It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.
 3. It is an ignitable compressed gas as defined in 49 CFR 173.300 and as determined by the test methods described in that regulation or equivalent test methods approved by the Administrator under 40 CFR 260.20 and 40 CFR 260.21.
 4. It is an oxidizer as defined in 49 CFR 173.151
- G. A solid waste that exhibits the characteristic of ignitability has the EPA Hazardous Waste Number of D001.

40 CFR 261.22 Characteristic of Corrosivity.

- A. A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:
1. It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using Method 9040 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in 40 CFR 260.11.
 2. It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55C (130F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-

69 as standardized in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in 40 CFR 260.11.

3. A solid waste that exhibits the characteristic of corrosivity has the EPA Hazardous Waste Number of D002.

40 CFR 261.23 Characteristic of Reactivity.

- A. A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has *any* of the following properties:
 1. It is normally unstable and readily undergoes violent change without detonating.
 2. It reacts violently with water.
 3. It forms potentially explosive mixtures with water.
 4. When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.
 5. It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.
 6. It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.
 7. It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.
 8. It is a forbidden explosive as defined in 49 CFR 173.5 1, or a Class A explosive as defined in 49 CFR 173.53 or a Class B explosive as defined in 49 CFR 173.88.
- B. A solid waste that exhibits the characteristic of reactivity has the EPA Hazardous Waste Number of D003.

40 CFR 261.24 Toxicity Characteristic.

- A. A solid waste exhibits the characteristic of toxicity if the extract from a representative sample of the waste contains any of the contaminants listed in Table I at a concentration equal to or greater than the respective value given in that Table. Where the waste contains less than 0.5 percent filterable solids, the waste itself is considered to be the extract for the purpose of this section.
- B. A solid waste that exhibits the characteristic of toxicity has the EPA Hazardous Waste Number specified in Table I which corresponds to the toxic contaminant causing it to be hazardous.

Table I - Maximum Concentration of Contaminants for the Toxicity Characteristic

^[1] HW #	Contaminant	^[2] CAS #	Regulatory Level (mg/l)	^[1] HW #	Contaminant	^[2] CAS #	Regulatory Level (mg/l)
D004	Arsenic	7440-38-2	5.0	D032	Hexachlorobenzene	118-74-1	^[3] 0.13
D005	Barium	7440-39-3	100.0	D033	Hexachlorobutadiene	87-68-3	0.5
D018	Benzene	71-43-2	0.5	D034	Hexachlororthane	67-72-1	3.0
D006	Cadmium	7440-43-9	1.0	D008	Lead	7439-9-1	5.0
D019	Carbon Tetrachloride	56-23-5	0.5	D013	Lindane	58-89-9	0.4
D020	Chlordane	57-74-9	0.03	D009	Mercury	7439-97-6	0.2
D021	Chlorobenzene	108-90-7	100.0	D014	Methoxychlor	72-43-5	10.0
D022	Chloroform	67-66-3	6.0	D035	Methyl ethyl ketone	78-93-3	200.0
D007	Chromium	7440-47-3	5.0	D036	Nitrobenzene	98-95-3	2.0
D023	o-Cresol	95-78-7	^[4] 200.0	D037	Pentachlorophenol	87-86-5	100.0
D024	m-Cresol	108-39-4	^[4] 200.0	D038	Pyridine	110-86-1	^[3] 5.0
D025	p-Cresol	106-44-5	^[4] 200.0	D010	Selenium	7782-49-2	1.0
D026	Cresol	-----	^[4] 200.0	D011	Silver	7440-22-4	5.0
D016	2,4-D	94-75-7	10.0	D039	Tetrachloroethylene	127-18-4	0.7
D027	1,4-Dichlorobenzene	106-46-7	7.5	D015	Toxaphene	8001-35-2	0.5
D028	1,2-Dichloroethane	107-06-2	0.5	D040	Trichloroethylene	79-01-6	0.5
D029	1,1-Dichloroethylene	75-35-4	0.7	D041	2,4,5-Trichlorophenol	95-95-4	400.0
D030	2,4-Dinitrotoluene	121-14-2	^[3] 0.13	D042	2,4,6-Trichlorophenol	88-06-2	2.0
D012	Endrin	72-20-8	0.02	D017	2,4,5-TP (Silvex)	93-72-1	1.0
D031	Heptachlor (& its epoxide)	76-44-8	0.008	D043	D043 Vinyl Chloride	75-01-4	0.2

^[1] EPA Hazardous waste number.

^[2] Chemical abstracts service number.

^[3] Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory level.

^[4] If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (DO26) concentration is used. The regulatory level of total cresol is 200 mg/L.

40 CFR 261.33 Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof.

The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded as described in 40 CFR 261.2 (a)(2)(i), when they are mixed with waste oil or used oil or other material and applied to the land for dust suppression or road treatment, when they are otherwise applied to the land in lieu of their original intended use or when they are contained in products that are applied to the land in lieu of their original intended use, they are produced for use as (or as a component of) a fuel, distributed for use as a fuel, or burned as a fuel.

- A. Any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraph (e) or (f) of this section.
- B. Any off-specification commercial chemical or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraph (e) or (f) of this section.
- C. Any residue remaining in a container or in an inner liner removed from a container that has held any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraphs (e) or (f) of this section, unless the container is empty as defined in 40 CFR 261.7(b)
- D. Any residue or contaminated soil, water or other debris resulting from the cleanup of a spill into or on any land or water of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraph (e) or (f) of this section, or any residue or contaminated soil, water or other debris resulting from the cleanup off a spill, into on any land or water, of any off-specification commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraph (e) or (f) of this section.

[Comment: The phrase "commercial chemical product or manufacturing chemical intermediate having the generic name listed in..." refers to a chemical substance which is manufactured or formulated for commercial or manufacturing use which consists of the commercially pure grade of the chemical, any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole active ingredient. It does not refer to a material, such as a manufacturing process waste, that contains any of the substances listed in paragraph (e) or (f). Where a manufacturing process waste is deemed to be a hazardous waste because it contains a substance listed in paragraph (e) or (f), such waste will be listed in either 40 CFR 261.31 or 40 CFR 261.32 or will be identified as a hazardous waste by the characteristics set forth in Subpart C of this part]

- E. The commercial chemical products, manufacturing chemical intermediate off-specification commercial chemical product or manufacturing chemical intermediates referred to in paragraphs (a) through (d) of this section, are identified as acute hazardous wastes (H) and are subject to be the small quantity exclusion defined in 40 CFR 261.5(e).

[Comment: For the convenience of the regulated community the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), and R (Reactivity). Absence of a letter indicates that the compound only is listed for acute toxicity]

HW #	CAS #	SUBSTANCE	HW #	CAS #	SUBSTANCE
P023	107-20-0	Acetaldehyde, chloro-	P012	1327-53-3	Arsenic oxide As ₂ O ₃
P002	591-08-2	Acetamide N-(aminothioxomethyl)-	P011	1303-28-2	Arsenic Oxide As ₂ O ₅
P057	640-19-7	Acetamide, 2-fluoro-	P011	1303-28-2	Arsenic pentoxide
P058	62-74-8	Acetic acid, fluoro-, sodium salt	P012	1327-53-3	Arsenic trioxide
P002	591-08-2	1-Acetyl-2-thiourea	P038	692-42-2	Arsine, diethyl-
P003	107-02-8	Acrolein	P036	696-28-6	Arsonous dichloride, phenyl-
P070	116-06-3	Aldicarb	P054	151-56-4	Azinidine
P203	1646-88-4	Aldicarb sulfone	P067	75-55-8	Aziridine, 2-methyl-
P004	309-00-2	Aldrin	P013	542-62-1	Barium cyanide
P005	107-18-6	Allyl Alcohol	P024	106-47-8	Benzenamine, 4-chloro-
P006	20859-73-8	Aluminium phosphide (R,T)	P077	100-01-6	Benzenamine, 4-nitro-
P007	2763-96-4	5-(aminomethyl)-3-isoxazolol	P028	100-44-7	Benzene, (chloromethyl)-
P008	504-24-5	4-Aminopyridine	P042	54-43-4	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)
P009	131-74-8	Ammonium picrate (R)	P046	122-09-8	Benzeneethanamine, alpha, alpha-dimethyl-
P119	7803-55-6	Ammonium Vanadate	P014	108-98-5	Benzenethiol
P099	506-61-6	Argentate (1-), bis(cyano-C)-, potassium	P127	1563-66-2	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-, methylcarbamate
P010	7778-39-4	Arsenic Acid H ₃ AsO ₄	P188	57-64-7	Benzonic acid, 2-hydroxy-, compd. With (3aS-cis)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo[2,3-b]indol-5-yl methylcarbamate ester (1:1).

HW #	CAS #	SUBSTANCE
P001	^[1] 81-81-2	2H-1 Benzopyran-2-one,4-hydroxy-3-(3-oxo-1-phenyl butyl)-, & salts when present at concentrations greater than 0.3%.
P028	100-44-7	Benzyl chloride
P015	7440-41-7	Beryllium power
P017	598-31-2	Bromoacetone
P018	357-57-3	Brucine
P045	39196-18-4	2-Butanone, 3,3-dimethyl-1-(methylthio) -, O-[methylamino]carbonyl oxime
P021	592-01-8	Calcium cyanide
P021	591-01-8	Calcium cyanide Ca(CN) ₂
P189	55285-14-8	Carbamic acid, [(dibutylamino)thio] methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester.
P191	644-64-4	Carbamic acid, dimethyl-,1-[(dimethyl-amino)carbonyl]-5-methyl-1H-pyrazol 3-yl ester.
P192	119-38-0	Carbamic acid, dimethyl-3-methyl-1-(1-methylethyl)-1H-pyrazol-5-yl ester
P190	1129-41-5	Carbamic acid, methyl-, 3-methylphenyl ester
P127	1563-66-2	Carbofuran
P022	75-15-0	Carbon disulfide
P095	75-44-5	Carbonic dichloride
P189	55285-14-8	Carbosulfan
P023	107-20-0	Chloroacetaldehyde
P029	544-92-3	Copper cyanide
P029	544-92-3	Copper cyanide Cu(CN)
P202	64-00-6	m-Cumenyl methylcarbamate

HW #	CAS #	SUBSTANCE
P030	-----	Cyanides (soluble cyanide salts), Not otherwise specified
P031	460-19-5	Cyanogen
P033	506-77-4	Cyanogen chloride
P033	506-77-4	Cyanogen chloride (CN)Cl
P024	106-47-8	p-Chloroaniline
P026	5344-82-1	1-(o-Chlorophenyl)thiourea
P027	542-76-7	3-Chloropropionitrile
P034	131-89-5	2-Cyclohexyl-4,6-dinitrophenol
P016	542-88-1	Dichloromethyl ether
P036	696-28-6	Dichlorophenylarsine
P038	692-42-2	Diethylarsine
P041	311-45-5	Diethyl-p-nitrophenyl phosphate
P040	297-97-2	O,O-Diethyl O-pyrazinyl phosphorothioate
P043	55-91-4	Diisopropylfluorophosphate (DFP)
P004	309-00-2	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa-chloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)-
P060	465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa-chloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5beta,8beta,8abeta)-
P037	60-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-,(1alpha,2beta,2alpha,3beta,6beta,6alpha,7beta,7alpha)-
P051	¹ 71-20-8	2,7:3,6-Dimethanonaphth[2,3-j]oxirene 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-,(1alpha,2beta,2abeta,3alpha,6alpha,6abeta,7beta,7alpha)-& metabolites

HW #	CAS #	SUBSTANCE
P044	60-51-5	Dimethoate
P046	122-09-8	alpha, alpha-Dimethylphenethylamine
P191	644-64-4	Dimetilan
P047	^[1] 534-52-1	4,6-Dinitro-o-cresol, & salts
P048	51-28-5	2,4-Dinitrophenol
P020	88-85-7	Dinoseb
P085	152-16-9	Diphosporamide, octamethyl-
P111	107-49-3	Diposphoric acid, tetraethyl ester
P039	298-04-4	Disulfoton
P049	541-53-7	Dithiobiuret
P185	26419-73-8	Dithiolane-2- carboxaldehyde ,2,4-dimethyl-,O- [(methylamino)-carbonyl]oxime
P050	115-29-7	Endosulfan
P088	145-73-3	Endothall
P051	72-20-8	Endrin
P051	72-20-8	Endrin, & metabolites
P042	51-43-4	Epinephrine
P031	460-19-5	Ethanedinitrile
P194	23135-22-0	Ethanimidothioic acid,2-(dimethyl amino)-N- [[methylamino) carbonyl] oxy]-2-oxo-, methyl ester.
P066	16752-77-5	Ethanimidothioic acid,N [(methyl-amino)carbonyl]oxy]-,methyl ester.
P101	107-12-0	Ethyl cyanide
P054	151-56-4	Ethyleneimine
P097	52-85-7	Famphur
P056	7782-41-4	Fluorine
P057	640-19-7	Fluoroacetamide
P058	62-74-8	Fluoroacetic acid, sodium salt
P198	23422-53-9	Formetanate hydrochloride
P197	17702-57-7	Formparanate

HW #	CAS #	SUBSTANCE
P065	628-86-4	Fulmic acid, mercury(2+)salt (R,T)
P059	76-44-8	Heptachlor
P062	757-58-4	Hexaethyl tetraphosphate
P116	79-19-6	Hydrazinecarbothioamide
P068	80-34-4	Hydrazine,methyl-
P063	74-90-8	Hydrocyanic acid
P063	74-90-8	Hydrogen cyanide
P096	7803-51-2	Hydrogen phosphide
P060	465-73-6	Isodrin
P192	119-38-0	Isolan
P202	64-00-6	3-Isoprppylphenyl N-methylcarbamate
P007	2763-96-4	3(2H)-Isoxazolone, 5-(aminomethyl)-
P196	15339-36-3	Manganese, bis(dimethyl carbamodi-thioato-S,S')-,
P196	A539-36-3	Manganese dimethyldithiocarbamate
P092	62-38-4	Mercury, (acetato-O)phenyl-
P065	624-86-4	Mercury fulminate(R,T)
P082	62-83-9	Methanamine, N-methyl-N-nitroso-
P064	624-83-9	Methane, isocyanato-
P016	542-88-1	Methane, oxybis[chloro-
P112	509-14-8	Methane, tetranitro- (R)
P118	75-70-7	Methanethiol, trichloro-
P198	23422-53-9	Methanimidamide, N,N-dimethyl-N' - [3-[[methyl amino)-carbonyl] oxy]phenyl]-, monohydrochloride.
P197	17702-57-7	Methanimidedamide, N,N-dimethyl-N' -[2-methyl-4-[[methylamino) carbonyl]oxy]phenyl]-
P050	115-29-7	6,9-Methano-2,4,3,-benzodi oxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide
P059	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
P199	2032-65-7	Methiocarb
P066	16752-77-5	Methomyl

HW #	CAS #	SUBSTANCE
P068	60-34-4	Methyl hydrazine
P064	624-83-9	2-Methylactonitrile
P071	298-00-0	Methyl parathion
P190	1129-41-5	Metholcarb
P128	315-8-4	Mexacarbate
P072	86-88-4	alpha-Naphthylthiourea
P073	13463-39-3	Nickel carbonyl
P073	13463-9-3	Nickel carbonyl Ni(CO) ₄ , (T-4)-
P074	557-19-7	Nickel cyanide
P074	557-19-7	Nickel cyanide Ni(CN) ₂
P075	¹ 54-11-5	Nicotine & salts
P076	10102-43-9	Nitric oxide
P077	100-01-6	p-Nitroaniline
P078	10102-44-0	Nitrogen dioxide
P076	10102-43-9	Nitrogen oxide NO
P078	10102-44-0	Nitrogen dioxide NO ₂
P081	55-63-0	Nitroglycerine (R)
P082	62-75-9	N-Nitrosodimethylamine
P084	4549-40-0	N-Nitrosomethylvinylamine
P085	152-16-9	Octamethylpyrophosphoramide
P087	20816-12-0	Osmium oxide OsO ₄ , (T-4)
P087	20816-12-0	Osmium tetroxide
P088	145-73-3	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
P194	23135-22-0	Oxamyl
P089	56-38-2	Parathion
P034	131-89-5	Phenol, 2-cyclohexyl-4,6-dinitro-
P048	51-28-5	Phenol, 2,4-dinitro

HW #	CAS #	SUBSTANCE
P047	¹¹ 534-52-1	Phenol 2-methyl-4-6-dinitro- & salts
P020	88-85-7	Phenol,2-(1methylprophyl)-4,6-dinitro-
P009	131-74-8	Phenol, 2,4,6-tinitro-, ammonium salt (R)
P128	315-18-4	Phenol 4-(dimethylamino)-3,5-dimethyl methylcarbamate (ester).
P199	2032-65-7	Phenol,(3,5-dimethyl-4-(methylthio)-, methylcarbamate
P202	64-00-6	Phenol, 3-(1-methylethyl)-,methyl carbamate
P201	2631-37-0	Phenol, 3-methyl-5-(1-methyl ethyl)-, methyl carbamate.
P092	62-38-4	Phenylmercury acetate
P093	103-85-5	Phenylthiourea
P094	298-02-0	Phorate
P095	75-44-5	Phosgene
P096	7803-51-2	Phosphine
P041	311-45-5	Phosphoric acid, diethyl 4-nitrophenyl ester
P039	298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)methyl]ester
P094	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl]ester
P044	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2oxoethyl]ester
P043	55-91-4	Phosphorofluoridic acid, bis(1-methyl-ethyl)ester
P089	56-38-2	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl)ester
P040	297-97-2	Phosphorothioic acid, O,O-diethylO-pyrazinyl ester
P097	52-85-7	Phosphorothioic acid, O-4[(dimethyl-amino)sulfonyl] phenyl] O,O-dimethyl ester
P071	298-00-0	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl)ester
P204	57-47-6	Physostigmine
P188	57-64-7	Physostigmine salicylate.
P110	78-00-2	Plumbane,tetraethyl-
P098	151-50-8	Potassium cyanide
P098	151-50-8	Potassium cyanide K(CN)
P099	506-61-6	Potassium silver cyanide

HW #	CAS #	SUBSTANCE
P201	2631-37-0	Promecarb
P070	116-06-3	Propanal, 2-methyl-2-(methylthio)-O-[(methylamino)carbonyl]oxime
P203	1646-88-4	Propanal, -methyl-2(methylsulfonyl)-O-[(methylamio)carbonyl]oxime.
P101	107-12-0	Propanenitrile
P027	542-76-7	Propanenile, 3-chloro-
P069	75-86-5	Propanenile, 2-ydroxy-2-methyl-
P081	55-63-0	1,2,3-Propanetriol, trinitrate (R)
P017	598-31-2	2-Propanone, 1-bromo-
P102	107-19-7	Propargyl alcohol
P003	107-02-8	2-Propenal
P005	107-18-6	2-Propen-1-ol
P067	75-55-8	1,2-Propylenimine
P102	107-19-7	2-Propyn-1-ol
P008	504-24-5	4-Pyridinamine
P075	^[1] 54-11-5	Pyridine, 3-(1-methyl-2-yrrolidinyl)-, (S)-, & salts
P204	57-47-6	Pyrrolo[2,3-b]indol-5-ol, 1,1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-methyl-carbamate (ester, (3aS-cis)-
P114	12039-52-0	Seleniuos acid, dithallium (1+) salt
P103	630-10-4	Selenourea
P104	506-64-9	Silver cyanide
P104	506-64-9	Silver cyanide Ag(CN)
P105	26628-22-8	Sodium azide
P106	143-33-9	Sodium cyanide
P106	143-33-9	Sodium cyanide Na(CN)
P108	^[1] 57-24-9	Strychnidin-10one, & salts
P018	357-57-3	Strychnidin-10-one,2,3-dimethoxy-
P108	^[1] 57-24-9	Strychnine, & salts
P115	7446-18-6	Sulfuric acid, dithallium(1+) salt
P109	3689-24-5	Tetraethyldithiopyrophosphate
P110	78-00-2	Tetraethyl lead
P111	107-49-3	Tetraethyl pyrophosphate
P112	509-14-8	Tetranitromethane (R)

HW #	CAS #	SUBSTANCE
P062	757-58-4	Tetraphosphoric acid, hexaethyl ester
P113	1314-32-5	Thallic oxide
P113	1314-32-5	Thallium oxide Tl ₂ O ₃
P114	12039-52-0	Thallium(I) selenite
P115	746-18-6	Thallium(I) sulfate
P109	36196-18-4	Thiodiphosphoric acid, tetraethyl ester
P045	39196-4	Thiofanox
P049	541-53-7	Thiomidodicarbonic diamide [(H ₂ N)C(S)] ₂ NH
P014	108-98-5	Thiophenol
P116	79-19-6	Thiosemicarbazide
P026	5344-82-1	Thiourea, (2-chlorophenyl)-
P072	86-8-4	Thiorea, 1-naphthalenyl-
P093	103-85-5	Thiorea, phenyl-
P185	26419-73-8	Tirpate
P123	8001-35-2	Toxaphene
P118	75-70-7	Trichoromethanethiol
P119	7803-55-6	Vanadic acid, ammonium salt
P120	1314-62-1	Vanadium oxide V ₂ O ₅
P120	1314-62-1	Vanadium pentoxide
P084	45-49-40-0	Vinylamine, N-methyl-N-nitroso
P001	^[1] 81-81-2	Warfarin, & salts, when present at concentrations greater than 0.3%
P205	137-30-4	Zinc, bis(Dimethylcarbomodithioato-S, S')-
P121	557-21-1	Zinc cyanide
P121	57-21-1	Zinc cyanide Zn(CN) ₂
P122	1314-84-7	Zinc Phosphide Zn ₃ P ₂ , when present at concentrations greater than 10% (R,T)
P205	137-30-4	Ziram

- F. The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products referred to in paragraphs (a) through (d) of this section, are identified as toxic wastes (T), unless otherwise designated and are subject to the small quantity generator exclusion defined in 40 CFR 261.5 (a) and (g).

[Comment: For the convenience of the regulated community, the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), R (Reactivity), I (Ignitability) and C (Corrosivity). Absence of a letter indicates that the compound is only listed for toxicity.]

These wastes and their corresponding EPA Hazardous Waste Numbers are:

HW #	CAS #	SUBSTANCE	HW #	CAS #	SUBSTANCE
U394	30558-43-1	A2213	U278	22781-23-3	Bendiocarb
U001	75-07-0	Acetaldehyde (I)	U364	22961-82-6	Bendiocarb phenol
U034	75-87-6	Acetaldehyde, trichloro-	U271	17804-35-2	Benomyl
U187	62-44-2	Acetamide, N-(4-ethoxyphenyl)-	U157	56-49-5	Benz[<i>j</i>]aceanthrylene, 1,2-dihydro-3-methyl
U005	53-96-3	Acetamide, N-9H-fluoren-2-yl-	U016	225-51-4	Benz[<i>c</i>]acridine
U240	194-75-7	Acetic acid, (2,4 – dichlorophenoxy), salts & esters	U017	98-87-3	Benzal chloride
U112	141-78-6	Acetic acid, ethyl ester (I)	U192	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-
U144	301-04-2	Acetic acid, lead(2+) salt	U018	56-55-3	Benz[<i>a</i>]anthracene
U214	563-68-8	Acetic acid, thallium(1+) salt	U094	57-97-6	Benz[<i>a</i>]anthracene, 7,12-dimethyl-
See F027	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-	U353	106-49-0	Benzenamine, 4-methyl-
U002	67-64-1	Acetone (I)	U158	101-15-5	Benzenamine, 4,4'-methylenebis[2-chloro-
U003	75-05-8	Acetonitrile (I,T)	U222	636-21-5	Benzenamine, 2-methyl-, hydrochloride
U004	98-86-2	Acetophenone	U181	99-55-8	Benzenamine, 2-methyl-5-nitro
U005	53-96-3	2-Acetylaminofluorene	U019	71-43-2	Benzene (I,T)
U006	75-36-5	Acetyl chloride (C,R,T)	U038	510-15-6	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester
U007	79-06-1	Acrylamide	U030	101-55-3	Benzene, 1-bromo-4-phenoxy-
U008	79-10-7	Acrylic acid (I)	U035	305-03-3	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-
U009	107-13-1	Acrylonitrile	U037	108-90-7	Benzene, chloro-
U011	61-82-5	Amitrole	U221	25376-45-8	Benzenediamine, ar-methyl
U012	62-53-3	Aniline (I,T)	U028	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester
U136	75-60-5	Arsinic acid, dimethyl-	U069	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester
U014	492-80-8	Auramine	U088	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester
U015	115-02-6	Azaserine	U102	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
U010	50-07-7	Azirino[2',3'≤3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-[(aminocarbonyloxy)methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-1aalpha, 8beta, 8alpha, 8balpha)]-	U107	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester
U280	101-27-9	Barban	U070	95-50-1	Benzene, 1,2-dichloro-

HW #	CAS #	SUBSTANCE	HW #	CAS #	SUBSTANCE
U071	541-73-1	Benzene, 1,3-dichloro-	U095	119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-
U072	106-46-7	Benzene, 1,4-dichloro-	U225	75-25-2	Bromoform
U060	72-54-8	Benzene, 1,1'-(2,2-dichloroethylidene) bis[4-chloro-	U030	101-55-3	4-Bromophenyl phenyl ether
U017	98-87-3	Benzene, (dichloromethyl)-	U128	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U223	26471-62-5	Benzene, 1,3-diisocyanatomethyl-(R,T)	U172	924-16-3	1-Butanamine, n-butyl-N-nitroso-
U239	1330-20-7	Benzene, dimethyl- (I,T)	U031	71-36-3	1-Butanol (I)
U201	108-46-3	1,3-Benzenediol	U159	78-93-3	2-Butanone (I,T)
U127	118-74-1	Benzene, hexachloro-	U160	1338-23-4	2-Butanone, peroxide (R,T)
U056	110-82-7	Benzene, hexahydro- (I)	U053	4170-30-3	2-Butenal
U220	108-88-3	Benzene, methyl-	U074	764-41-0	2-Butene, 1,4-dichloro- (I,T)
U105	121-14-2	Benzene, 1-methyl-2,4-dinitro-	U143	303-34-4	2-Butenoic acid, 2-methyl-, 7-[[[2,3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z), 7(2S*,3R*), 7aalpha]]-
U106	606-20-2	Benzene, 2-methyl-1,3-dinitro-	U031	71-36-3	n-Butyl alcohol (I)
U055	98-82-8	Benzene, (1-methylethyl)- (I)	U136	75-60-5	Cacodylic acid
U169	98-95-3	Benzene, nitro-	U032	13765-19-0	Calcium Chromate
U183	608-93-5	Benzene, pentachloro-	U215	6533-73-9	Carbonic acid, dithallium (1+) salt
U185	82-68-8	Benzene, pentachloronitro-	U033	353-50-4	Carbonic difluoride
U020	98-09-9	Benzenesulfonic acid chloride (C,R)	U156	79-22-1	Carbonochloridic acid, methyl ester (I,T)
U020	98-09-9	Benzenesulfonyl chloride (C,R)	U033	353-50-4	Carbon oxyfluoride (R,T)
U207	95-94-3	Benzene, 1,2,4,5-tetrachloro-	U211	56-23-5	Carbon tetra chloride
U061	50-29-3	Benzene, 1,1'-(2,2,2-trichloroethylidene) bis[4-chloro-	U034	75-87-6	Chloral
U247	72-43-5	Benzene, 1,1'-(2,2,2-trichloroethylidene) bis[4-methoxy-	U035	305-03-3	Chlorambucil
U023	98-07-7	Benzene, (trichloromethyl)-	U036	57-74-9	Chlordane, alpha & gamma isomers
U234	99-35-4	Benzene, 1,3,5-trinitro-	U026	494-03-1	Chlornaphazin
U021	92-87-5	Benzidine	U03	108-90-7	Chlorobenzene
U202	¹ 81-07-2	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide, and salts	U038	510-15-6	Chlorobenzilate
U278	22781-23-3	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate.	U039	59-50-7	p-Chloro-m-cresol
U364	22961-82-6	1,3-Benzodioxol-4-ol, 2,2-dimethyl-	U042	110-75-8	2-Chloroethyl vinyl ether
U203	94-57-7	1,3-Benzodioxole, 5-(2-propenyl)-	U044	67-66-3	Chloroform
U141	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-	U046	107-30-2	Chloromethyl methyl ether
U367	1563-38-8	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-	U047	91-58-7	Beta-Chloronaphthalene
U090	94-58-6	1,3-Benzodioxole, 5-propyl-	U048	95-57-8	o-Chlorophenol
U064	189-55-9	Benzo[rs]pentaphene	U049	3465-93-3	4-Chloro-m-cresol
U248	¹ 81-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenyl-butyl)-, & salts, when present at concentrations of 0.3% or less	U032	13765-19-0	Chromic acid H ₂ CrO ₄ , calcium salt
U022	50-32-8	Benzo[a]pyrene	U050	218-01-9	Chrysene
U197	106-51-4	p-Benzoquinone	U051	Creosote
U023	98-07-7	Benzotrichloride (C,R,T)	U052	1319-77-3	Cresol (Cresylic acid)
U085	1464-53-5	2,2'-Bioxirane	U053	4170-30-3	Crotonaldehyde
U021	92-87-5	[1,1'-Biphenyl]-4,4'-diamine	U055	98-82-8	Cumene (I)
U073	91-94-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-	U246	506-68-3	Cyanogen bromide (CN)Br
U091	119-90-4	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-	U197	106-51-4	2,5-Cyclohexadiene-1,4-dione

HW #	CAS #	SUBSTANCE	HW #	CAS #	SUBSTANCE
U056	110-82-7	Cyclohexane (I)	U101	105-67-9	2,4-Dimethylphenol
U129	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha, 2alpha, 3beta, 4alpha, 5alpha, 6beta)-	U102	131-11-3	Dimethyl phthalate
U057	108-94-1	Cyclohexanone (I)	U103	77-78-1	Dimethyl sulfate
U130	77-47-4	1,3-cyclopentadinene, 1,2,3,4,5,5-hexachloro-	U105	121-14-2	2,4-Dinitrotoluene
U058	50-18-0	Cyclophosphamide	U106	606-20-2	2,6-Dinitrotoluene
U240	¹ 94-75-7	2,4-D, salts & esters	U107	117-84-0	Di-n-octyl phthalate
U059	20830-81-3	Daunomycin	U108	123-97-1	1,4-Dioxane
U060	72-54-8	DDD	U109	122-66-7	1,2-Diphenylhydrazine
U061	50-29-3	DDT	U110	142-84-7	Dipropylamine (I)
U062	2303-16-4	Diallate	U111	621-64-7	Di-n-propylnitrosamine
U063	53-70-3	Dibenz[a,h]anthracene	U041	106-89-8	Epichlorohydrin
U064	189-55-9	Dibenzo[a,i]pyrene	U001	75-07-0	Ethanal (I)
U066	96-12-8	1,2-Dibromo-3-chloropropane	U404	121-44-8	Ethanamine, N,N-diethyl-
U069	84-74-2	Dibutyl phthalate	U174	55-18-5	Ethanamine, N-ethyl-N-nitroso-
U070	95-50-1	o-Dichlorobenzene	U155	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-
U071	541-73-1	m-Dichlorobenzene	U067	106-93-4	Ethane, 1,2-dibromo-
U072	106-46-7	p-Dichlorobenzene	U076	75-34-3	Ethane, 1,1-dichloro-
U073	91-94-1	3,3'-Dichlorobenzidine	U077	107-06-2	Ethane, 1,2-dichloro-
U074	764-41-0	1,4-Dichloro-2-butene (I,T)	U131	67-72-1	Ethane, hexachloro-
U075	75-71-8	Dichlorodifluoromethane	U024	111-91-1	Ethane, 1,1'-[methylenebis(oxy)bis[2-chloro-
U078	75-35-4	1,1-Dichloroethylene	U117	60-29-7	Ethane, 1,1'-oxybis- (I)
U079	156-60-5	1,2-Dichloroethylene	U025	111-44-4	Ethane, 1,1'-oxybis[2-chloro-
U025	111-44-4	Dichloroethyl ether	U184	76-01-7	Ethane, pentachloro-
U027	108-60-1	Dichloroisopropyl ether	U208	630-20-6	Ethane, 1,1,1,2-tetrachloro-
U024	111-91-1	Dichloromethoxy ethane	U209	79-34-5	Ethane, 1,1,2,2-tetrachloro-
U081	120-83-2	2,4-Dichlorophenol	U218	62-55-5	Ethanethioamide
U082	87-65-0	2,6-Dichlorophenol	U226	71-55-6	Ethane, 1,1,1-trichloro-
U084	542-75-6	1,3-Dichloropropene	U227	79-00-5	Ethane, 1,1,2-trichloro-
U085	1464-53-5	1,2:3,4-Diepoxybutane (I,T)	U410	59669-26-0	Ethanimidiothioic acid, N,N'-[thiobis[(methylimino)carbo
U108	123-91-1	1,4-Diethyleneoxide	U394	30558-43-1	nyloxy]]bis-, dimethyl ester Ethanimidiothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-,methyl ester
U028	117-81-7	Diethylhexyl phthalate	U359	110-80-5	Ethanol, 2-ethoxy-
U395	5952-26-1	Diethylene glycol, dicarbamate	U173	1116-54-7	Ethanol, 2,2'-(nitrosoimino)bis-
U086	1615-80-1	N,N'-Diethylhydrazine	U395	5952-26-1	Ethanol, 2,2'-oxybis- dicarbamate
U087	3288-58-2	O,O-Diethyl S-methyl dithiophosphate	U004	98-86-2	Ethanone, 1-phenyl-
U088	84-66-2	Diethyl phthalate	U043	75-01-4	Ethene, chloro-
U089	56-53-1	Diethylstilbesterol	U042	110-75-8	Ethene, (2-Chloroethoxy)-
U090	94-58-6	Dihydrosafrole	U078	75-35-4	Ethene, 1,1-dichloro-
U091	119-90-4	3,3'-Dimethoxybenzindine	U079	156-60-5	Ethene, 1,2-dichloro- (E)-
U092	124-40-3	Dimethylamine (I)	U210	127-18-4	Ethene, tetrachloro-
U093	60-11-7	p-Dimethylaminoazobenzene	U228	79-01-6	Ethene, trichloro-
U094	57-97-9	7,12-Dimethylbenz[a]anthracene	U112	141-78-6	Ethyl acetate (I)
U095	119-93-7	3,3'-Dimethylbenzindine	U113	140-88-5	Ethyl acrylate (I)
U096	80-15-9	Alpha,alpha-Dimethylbenzylhydroperoxide (R)	U238	51-79-6	Ethyl carbamate (urethane)
U097	79-44-7	Dimethylcarbamoyl chloride	U117	60-29-7	Ethyl ether (I)
U098	57-14-7	1,1-Dimethylhydrazine	U114	¹ 111-54-6	Ethylenebisdithiocarbamic acid, salts & esters
U099	540-73-8	1,2-Dimethylhydrazine	U067	106-93-4	Ethylene dibromide

HW #	CAS #	SUBSTANCE	HW #	CAS #	SUBSTANCE
U077	107-06-2	Ethylene dichloride	U163	70-25-7	MNNG
U359	110-80-5	Ethylene glycol monoethyl ether	U147	108-31-6	Maleic anhydride
U115	75-21-8	Ethylene oxide (I,T)	U148	123-33-1	Maleic hydrazide
U116	96-45-7	Ethylenethiourea	U149	109-77-3	Malononitrile
U076	75-34-3	Ethylidene dichloride	U150	148-82-3	Melphalan
U118	97-63-2	Ethyl methacrylate	U151	7439-97-6	Mercury
U119	62-50-0	Ethyl methanesulfonate	U152	126-98-7	Methacrylonitrile (I,T)
U120	206-44-0	Fluoranthene	U092	124-40-3	Methanamine, N-Methyl- (I)
U122	50-00-0	Formaldehyde	U029	74-83-9	Methane, bromo-
U123	64-18-6	Formic Acid (C,T)	U045	74-87-3	Methane, chloro- (I,T)
U124	110-00-9	Furan (I)	U046	107-30-2	Methane, chloromethoxy-
U125	98-01-1	2-Furancarboxaldehyde (I)	U068	74-95-3	Methane, dibromo-
U147	108-31-6	2,5-Furandione	U080	75-09-2	Methane, dichloro-
U213	109-99-9	Furan, tetrahydro (I)	U075	75-71-8	Methane, dichlorodifluoro-
U125	98-01-1	Furfural (I)	U138	74-88-4	Methane, iodo-
U124	110-00-9	Furfuran (I)	U119	62-50-0	Methanesulfonic acid, ethyl ester
U206	18883-66-4	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-, D-	U211	56-23-5	Methane, tetrachloro-
U206	18883-66-4	D-Glucose, 2-deoxy-2-[[[(methylnitrosoamino)-carbonyl]amino]-glycidyl]aldehyde	U153	74-93-1	Methanethiol (I,T)
U126	765-34-4	Guanidine, N-methyl-N'-nitro-N-nitroso-	U225	75-25-2	Methane, tribromo-
U163	70-25-7	Guanidine, N-methyl-N'-nitro-N-nitroso-	U044	67-66-3	Methane, trichloro-
U127	118-74-1	Hexachlorobenzene	U121	75-69-4	Methane, trichlorofluoro-
U128	87-68-3	Hexachlorobutadiene	U036	57-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-
U130	77-47-4	Hexachlorocyclopentadiene	U154	67-56-1	Methanol (I)
U131	67-72-1	Hexachloroethane	U155	91-80-5	Methapyrilene
U132	70-30-4	Hexachlorophene	U142	143-20-0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5a,5b,6-decachlorooctahydro-
U243	1888-71-7	Hexachloropropene	U247	72-43-5	Methoxychlor
U133	302-01-2	Hydrazine, (R,T)	U154	67-56-1	Methyl alcohol (I)
U086	1615-80-1	Hydrazine, 1,2-dimethyl-	U029	74-83-9	Methyl bromide
U098	57-14-7	Hydrazine, 1,1-dimethyl-	U186	504-60-9	1-Methylbutadiene (I)
U099	540-73-8	Hydrazine, 1,2-dimethyl-	U045	74-87-3	Methyl chloride (I,T)
U109	122-66-7	Hydrazine, 1,2-diphenyl-	U156	79-22-1	Methyl chlorocarbonate (I,T)
U134	7664-39-3	Hydrofluoric acid (C,T)	U226	71-55-6	Methyl chloroform
U134	7664-39-3	Hydrogen fluoride (C,T)	U157	56-49-5	3-Methylcholanthrene
U135	7783-06-4	Hydrogen sulfide	U158	101-14-4	4,4'-Methylenebis(2-chloroaniline)
U135	7783-06-4	Hydrogen sulfide H ₂ S	U068	74-95-3	Methylene bromide
U096	80-15-9	Hydroperoxide,1-methyl-1-phenylethyl(R)	U080	75-09-2	Methylene chloride
U116	96-45-7	2-imidazolidinethione	U159	78-93-3	Methyl ethyl ketone (MEK) (I,T)
U137	193-39-5	Indeno[1,2,3-cd]pyrene	U160	1338-23-4	Methyl ethyl ketone peroxide (R,T)
U190	85-44-9	1,3-Isobenzofurandione	U138	74-88-4	Methyl iodide
U140	78-83-1	Isobutyl alcohol (I,T)	U161	108-10-1	Methyl isobutyl ketone (I)
U141	120-58-1	Isosafrole	U162	80-62-6	Methyl methacrylate (I,T)
U142	143-50-0	Kepone	U161	108-10-1	4-Methyl-2-pentanone (I)
U143	303-34-4	Lasiocarpine	U164	56-04-2	Methylthiouracil
U144	301-04-2	Lead acetate	U010	50-07-7	Mitomycin C
U146	1335-32-6	Lead, bis(acetato-O)tetrahydroxytri-	U059	20830-81-3	5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy)-alpha-L-lyxo-hexopyranosyl]oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-
U145	7446-27-7	Lead phosphate	U167	134-32-7	1-Naphthalenamine
U146	1335-32-6	Lead subacetate	U168	91-59-8	2-Naphthalenamine
U129	58-89-9	Lindane	U026	494-03-1	Naphthalenamine,N,N'-bis(2-

chloroethyl)-

HW #	CAS #	SUBSTANCE	HW #	CAS #	SUBSTANCE
U165	91-20-3	Naphthalene	U132	70-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-
U047	91-58-7	Naphthalene, 2-chloro-	U411	114-26-1	Phenol, 2-(1-methylethoxy)-, methylcarbamate.
U166	130-15-4	1,4-Naphthalenedione	U170	100-02-7	Phenol, 4-nitro-
U236	72-57-1	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl[1,1'-diphenyl]-4,4'-diyl)bis(azo)bis[5-amino-4-hydroxy]-, tetrasodium salt	See F027	87-86-5	Phenol, pentachloro-
U279	63-25-2	1-Naphthalenol, methylcarbamate	See F027	58-90-2	Phenol, 2,3,4,6-tetrachloro-
U168	130-15-4	1,4-Naphthoquinone	See F027	95-95-4	Phenol, 2,4,5-trichloro-
U167	134-32-7	alpha-naphthylamine	See F027	88-06-2	Phenol, 2,4,6-trichloro-
U168	91-59-8	beta-naphthylamine	U150	148-82-3	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-
U217	10102-45-1	Nitric Acid, thallium(1+) salt	U145	7446-27-7	Phosphoric acid, lead(2+) salt (2:3)
U169	98-95-3	Nitrobenzene (I,T)	U087	3288-58-2	Phosphorodithioic acid, O,O-diethyl S-methyl ester
U170	100-02-7	p-Nitrophenol	U189	1314-80-3	Phosphorus sulfide (R)
U171	79-46-9	2-Nitropropane (I,T)	U190	85-44-9	Phthalic anhydride
U172	924-16-3	N-Nitrosodi-n-butylamine	U191	109-06-8	2-Picoline
U173	1116-54-7	N-Nitrosodiethanolamine	U179	100-75-4	Piperidine, 1-nitroso-
U174	55-18-5	N-Nitrosodiethylamine	U192	23950-58-5	Pronamide
U176	759-73-9	N-Nitroso-N-ethylurea	U194	107-10-8	1-Propanamine (I,T)
U177	684-93-5	N-Nitroso-N-methylurea	U111	621-64-7	1-Propanamine, N-nitroso-N-propyl-
U178	615-53-2	N-Nitroso-N-methylurethane	U110	142-84-7	1-Propanamine, N-propyl- (I)
U179	100-75-4	N-Nitrosopiperidine	U066	96-12-8	Propane, 1,2-dibromo-3-chloro-
U180	930-55-2	N-Nitrosopyrrolidine	U083	78-87-5	Propane, 1,2-dichloro-
U181	99-55-8	5-Nitro-o-toluidine	U149	109-77-3	Propanedinitrile
U193	1120-71-4	1,2-Oxathiolane, 2,2-dioxide	U171	79-46-9	Propane, 2-nitro- (I,T)
U058	50-18-0	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide	U027	108-60-1	Propane, 2,2'-oxybis[2-chloro-
U115	75-21-8	Oxirane (I,T)	U193	1120-71-4	1,3-Propane sultone
U126	765-34-4	Oxiranecarboxyaldehyde	See F027	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-
U041	106-89-8	Oxirane, (chloromethyl)-	U235	126-72-7	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U042	123-63-7	Paraldehyde	U140	78-83-1	1-Propanol, 2-methyl- (I,T)
U183	608-93-5	Pentachlorobenzene	U002	67-64-1	2-Propanone (I)
U184	76-01-7	Pentachloroethane	U007	79-06-1	2-Propenamide
U185	82-68-8	Pentachloronitrobenzene (PCNB)	U084	542-75-6	1-Propene, 1,3-dichloro-
See F027	87-86-5	Pentachlorophenol	U243	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-
U161	108-10-1	Pentanol, 4-methyl-	U009	107-13-1	2-Propenenitrile
U186	504-60-9	1,3-Pentadiene (I)	U152	126-98-7	2-Propenenitrile, 2-methyl- (I,T)
U187	62-44-2	Phenacetin	U008	79-10-7	2-Propenoic acid (I)
U188	108-95-2	Phenol	U113	140-88-2	2-Propenoic acid, ethyl ester (I)
U048	95-57-8	Phenol, 2-chloro-	U118	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester
U039	59-50-7	Phenol, 4-chloro-3-methyl-	U162	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U081	120-83-2	Phenol, 2,4-dichloro-	U373	122-42-9	Propham
U082	87-65-0	Phenol, 2,6-dichloro-	U411	114-26-1	Propoxur
U089	56-53-1	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)	U387	52888-80-9	Prosulfocarb

U101 U052 HW #	105-67-9 1319-77-3 CAS #	Phenol, 2,4-dimethyl Phenol, methyl- SUBSTANCE	U194 U083 HW #	107-10-8 78-87-5 CAS #	n-Propylamine (I,T) Propylene dichloride SUBSTANCE
U148	123-33-1	3,6-Pyridazinedione, 1,2-dihydro-	U223	26471-62-5	Toluene diisocyanate (R,T)
U196	110-86-1	Pyridine	U328	95-53-4	o-Toluidine
U191	109-06-8	Pyridine, 2-methyl-	U353	106-49-0	p-Toluidine
U237	66-75-1	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-	U222	636-21-5	o-Toluidine hydrochloride
U167	56-04-2	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thio-	U389	2303-17-5	Triallate
U180	930-55-2	Pyrrolidine, 1-nitroso-	U011	61-82-5	1H-1,2,4-Triazol-3-amine
U200	50-55-5	Reserpine	U408	118-79-6	2,4,6-Tribromophenol
U201	108-46-3	Resorcinol	U227	79-00-5	1,1,2-Trichloroethane
U202	¹ 81-07-2	Saccharin, & salts	U228	79-01-6	Trichloroethylene
U203	94-59-7	Safrole	U121	75-69-4	Trichloromonofluoromethane
U204	7783-00-8	Selenious acid	See	95-95-4	2,4,5-Trichlorophenol
U204	7783-00-8	Selenium dioxide	F027		
U205	7488-56-4	Selenium sulfide	See	88-06-2	2,4,6-Trichlorophenol
U205	7488-56-4	Selenium sulfide SeS ₂ (R,T)	F027		
U015	115-02-6	L-Serine, diazoacetate (ester)	U404	121-44-8	Triethylamine
See	93-72-1	Silvex (2,4,5-TP)	U234	99-35-4	1,3,5-trinitrobenzene (R,T)
F027			U182	123-63-7	1,3,5-Trioxane, 2,4,6-trimethyl-
U206	18883-66-4	Streptozotocin	U235	126-72-7	Tris(2,3-dibromopropyl) phosphate
U103	77-78-1	Sulfuric acid, dimethyl ester	U236	72-57-1	Trypan blue
U189	1314-80-3	Sulfur phosphide (R)	U237	66-75-1	Uracil mustard
See	93-76-5	2,4,5-T	U176	759-73-9	Urea, N-ethyl-N-nitroso-
F027			U177	684-93-5	Urea, N-methyl-N-nitroso-
U207	95-94-3	1,2,4,5-Tetrachlorobenzene	U043	75-01-4	Vinyl chloride
U208	630-20-6	1,1,1,2-Tetrachloroethane	U248	¹ 81-81-2	Warfarin, & salts when present at concentrations of 0.3% or less
U209	79-34-5	1,1,2,2-Tetrachloroethane	U239	1330-20-7	Xylene (I)
U210	127-18-4	Tetrachloroethylene	U200	50-55-5	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[3,4,5-trimethoxybenzoyl(oxy)]-, methyl ester, (3beta, 16beta, 17alpha, 18beta, 20alpha)-
See	58-90-2	2,3,4,6-Tetrachlorophenol	U249	1314-84-7	Zinc phosphide Zn ₃ P ₂ , when present at concentrations of 10% or less
F027					
U213	109-99-9	Tetrahydrofuran (I)			
U214	630-20-6	Thallium (I) acetate			
U215	6533-73-9	Thallium (I) carbonate			
U216	7791-12-0	Thallium (I) chloride			
U216	7791-12-0	Thallium Chloride TlCl			
U217	10102-45-1	Thallium (I) nitrate			
U218	62-55-5	Thioacetamide			
U410	59669-26-0	Thiodicarb			
U153	74-93-1	Thiomethanol (I,T)			
U244	137-26-8	Thioperoxydicarbonic diamide [(H ₂ N)C(S)] ₂ S ₂ , tetramethyl-			
U409	23564-05-8	Thiophanate-methyl			
U219	62-56-6	Thiourea			
U244	137-26-8	Thiram			
U220	108-88-3	Toluene			
U221	25376-45-8	Toluenediamine			

^[1] CAS Number given for parent compound only.

APPENDIX B

Common Halogenated and Non-halogenated Organic Solvents

Halogenated solvents (i.e. solvents containing the chlorine, fluorine, bromine, or iodine element) pose special disposal problems. As a direct result of these problems, most halogenated solvents are expensive to dispose of. Because of the high cost of disposal, halogenated solvents should be collected separately for most other solvents. A breakdown by solvent type is listed below to help generators categorize their waste solvents.

Common Halogenated And Non-Halogenated Organic Solvents:

Halogenated Solvents

- Chloroform
- Methylene Chloride (Dichloromethane)
- Carbon tetrachloride
- Trichloroethane
- Tetrachloroethane

Non-halogenated Solvents

- Methyl alcohol
- Ethyl alcohol
- Diethyl ether
- Benzene
- Acetonitrile
- Hexane
- Pentane
- Phenol
- Toluene
- Xylene
- Ethyl acetate
- Cyclohexane
- Butanol
- Acetone

Please note: Formaldehyde is consolidated under a separate waste stream and must not be mixed with other solvents.

APPENDIX C

Instructions for the IBT Chemical Waste Disposal Form

[Note: The numbers of the following section refer to the boxed numbers on the example IBT Chemical Waste Disposal Form]

Complete each of the sections of the waste form with the information requested. Note any special information requirements, explained below where necessary:

1. Principal Investigator: Name the investigator whose project is generating the waste.
2. Person Completing Form: Name the person who actually prepared the waste form.
3. Identification / Description of Waste Chemicals
 - ⇒ If the waste is a mixture of one or more constituents, place an "x" in the box marked "MIX".
 - ⇒ List all components of the waste using their common chemical or IUPAC names. Estimate and indicate the volume (liquids) or weight (solids) each represents in the container.
 - ⇒ Do not use chemical name abbreviations or formulas.
 - ⇒ The identification and quantity of any solids present in liquid waste must also be listed if such solids/sludges cannot be separated.

Example 1: Do not write "aqueous lead waste", write "1000 ppm lead nitrate in dilute nitric acid".

Example 2: If several chemicals have been poured in one container, mark the "MIX" box, and list the volume or weight of each component as follows: Acetone- 1L, Hexane- 500 ml., Methanol - 250 ml.
4. State: Circle the appropriate letter to indicate the present physical state of the waste. Circle "S" for solid, "L" for liquid, and "G" for Gas
5. pH: For liquid wastes, indicate with one significant digit the pH of the material. Determination by the use of pHydron Papers is acceptable.
6. Number, Size, & Type of Container(s): In order, show how many, and of what volume/weight, and of what type of container, are included in this entry. Differing types of containers should be listed on separate lines of the form.
 - Example 3: If you had 20 containers of waste in 4 liter bottles, your entry would be: 20 x 4 L bottles.
 - Example 4: If you had one, 5 gallon can of methylene chloride and 10 gallon mixture of trichloroethane and acetone in two, 5 gallon metal cans, you would need to use two lines of the form. For the methylene chloride you would enter on one line: 1 x 5 gal. can. For the two cans of the mixture of trichloroethane and acetone you would enter, on the next line down: 2 x 5 gal. cans.
7. Volume or Weight in Container: Indicate the sum total volume or weight of each container. Differing sizes of containers should be listed on separate lines of the form.
 - Example 5: If you had 5 bottles of liquid potassium chloride in the same size containers, each containing 400 milliliters, the entry would be : 400 ml each.
 - Example 6: If you had two containers of calcium hydroxide, one liquid and one solid, they would be listed on separate lines. In addition, section 5 of the form would indicate that one item was a liquid ("L") and the other was a solid ("S").
8. (Safety Office use Only) I.D. Number: Leave blank.
9. Special Handling Instructions: Note any access restrictions, or any special hazards associated with the waste.
10. Signature of Person Completing Form: The person who completed the form must sign it.
11. Date Signed

IBT Chemical Waste Disposal Form

(Read Instructions On Back Before Completing)

PI Name^[1]:

_____ (Please Print)

Person Completing Form^[2]:

_____ (Please Print Full Name)

Identification / Description of Waste ^[3]	State ^[4]	pH ^[5]	Number, Size & Type of Container ^[6] (ex: 3 x 1 L. Bot)	Volume or Weight in Container ^[7] (eg: 750 mL in each)	Safety Office ID# ^[8]
<input type="checkbox"/> Mix	S L G				
<input type="checkbox"/> Mix	S L G				
<input type="checkbox"/> Mix	S L G				
<input type="checkbox"/> Mix	S L G				
<input type="checkbox"/> Mix	S L G				

Special Notes or Handling Instructions^[9]:

Certification: I hereby declare that the identification / description of the waste chemicals is accurate and complete to the best of my knowledge.

Signed^[10]: _____ Date^[11]: _____

IBT Chemical Waste Disposal Form

(Read Instructions On Back Before Completing)

PI Name^[1]:

_____ (Please Print)

Person Completing Form^[2]:

_____ (Please Print Full Name)

Identification / Description of Waste ^[3]	State ^[4]	pH ^[5]	Number, Size & Type of Container ^[6] (ex: 3 x 1 L. Bot)	Volume or Weight in Container ^[7] (eg: 750 mL in each)	Safety Office ID# ^[8]
<input type="checkbox"/> Mix					
<input type="checkbox"/> Mix					
<input type="checkbox"/> Mix					
<input type="checkbox"/> Mix					
<input type="checkbox"/> Mix					

Special Notes or Handling Instructions^[9]:

Certification: I hereby declare that the identification / description of the waste chemicals in accurate and complete to the best of my knowledge.

Signed^[10]: _____ Date^[11]: _____