Lamar University

Hazardous Waste Management Program

Reference:

http://www.epa.gov/epawaste/hazard/generation/cesqg.htm

Click on this link on this web page

Part 261.5 of the Code of Federal Regulations (40 CFR Part 261.5)

and/or

Environment, Health and Safety Online - Summary of Requirements for CESQGs
1. **Purpose**

The purpose of this program is to provide a safe and compliant process for the disposal of Hazardous Wastes at Lamar University. The program is designed to comply with Federal and State regulations for Hazardous Waste.

This program does not apply to the disposal of radioactive, infectious, or biological wastes. Compliance is critical and requires full cooperation from all University departments.

2. **Hazardous Waste Regulation**

In 1980 the resource Conservation and Recovery Act (R.C.R.A.) was established and administered by the Environmental Protection Agency (EPA) (42 U.S.C.) Under this act the EPA has the responsibility for regulating hazardous chemical waste. R.C.R.A. established a ‘cradle to the grave’ hazardous chemical waste management requirement to protect the public health and environment from the improper disposal of chemical waste.

The Texas Commission on Environmental Quality (TCEQ) administers an equivalent to RCRA for the State of Texas under Industrial Solid Waste and Municipal Hazardous Waste Regulations (Title 31, Part IX, chapter 355).

Lamar University is a “Very Small Quantity Generator” (VSQG) previously known as “Conditionally Exempt Small Quantity Generator” (CESQG) of hazardous waste and must comply with State and Federal regulations on waste disposal to allow us to maintain this status. Very Small Quantity Generators (VSQG) generate 100 kilograms or less per month of hazardous waste, or 1 kilogram or less per month of acutely hazardous waste. All quantities of acute hazardous waste are subject to full regulation under parts 262 through 268, and parts 270 and 124 of this chapter, and the notification requirements of section 3010 of RCRA.

Please note that if we exceed our quotas to maintain our VSQG status then the paperwork and forms required by all who produce or purchase chemicals will be excessively more.

Lamar University is not allowed to treat or dispose of hazardous chemical waste other than by a licensed vendor. It is illegal to dispose of hazardous chemical waste by dilution, evaporation, or disposal in the sanitary/storm sewers or the local municipal landfill. Failure to comply with chemical waste regulations could result in large fines and penalties for the University. Individual generators/employees causing the violation may be personally liable. Violations can range from improper labeling waste to intentional disposing of Hazardous Chemical Waste into the air, down the drains or in the trash.
A Waste generator is responsible ‘from the cradle to the grave’ and is always responsible for environmental damage; therefore the choice of a reliable disposal facility is very important. In Texas non-compliance violations can be civil, criminal, or administrative violations and penalties can range from up to $25,000/day in fines to a fifteen year prison term for individuals.

3. Responsibilities

Lamar University’s Department of Environmental Health and Safety and Risk Management is responsible for:

- The administration of the Hazardous Waste Management Program at Lamar University.
- Ensuring that all chemical waste is properly packaged, labeled, logged before disposal
- Ensuring that all chemical waste is transported to a permitted off-site facility for storage, treatment and disposal.
- The collection, storage and transportation of all hazardous chemical waste for disposal.
- Provision of information and assistance to individual chemical waste generators
- Maintaining permanent records of movement of all Hazardous Chemical Waste on the campus.

Hazardous Waste Generators such as researchers; professors; shop foreman etc., are responsible for:

- Following the disposal procedures
- Assuring that their employees and research assistants are trained in proper disposal procedures
- Properly identifying the hazardous chemical waste
- Training the employees and students on the hazards of the chemicals and waste in their areas
- Developing Emergency Response Procedures for chemical spills.

4. Hazardous Waste Disposal Program

Hazardous Chemical Waste Determination

Material becomes a waste when it is no longer useful as determined by the ‘owner’ and shall be requested for disposal. If the material is to be disposed of, it shall be determined if this material is hazardous or non-hazardous.
Hazardous wastes are those defined by the United States Occupational Safety and Health Administration (OSHA) as a substance for which there is a statistically significant evidence, based on at least one scientific study, showing that acute or chronic harm may result from exposure to that substance. This is regardless of whether the handling of the material is proper or improper.

Chemical waste can be made less hazardous by treatment to reduce the hazard or the quantity of waste in the laboratory if the treatment protocol is included in the experimental procedure.

A chemical waste is hazardous if it fits into one of the following categories:

a. Listed Waste:

A listed waste is one included in one of four lists, generated by the United States Environmental Protection Agency (EPA; TCEQ). Identified by the letters F, K, P, and U. Within the lists the materials are assigned hazardous waste numbers and hazard rating by the EPA. The ratings systems and the lists are provided in appendix 2.

The definitions for the list types are as follows:

(i) Type F wastes are generic categories of solvents and wastes and waste water from some specific processes.

(ii) Type K wastes are hazardous wastes from specific sources.

(iii) Type P wastes include acutely hazardous wastes.

(iv) Type U wastes are specific commercial chemical products, chemical intermediates and off-specification chemical products.

b. Characteristic Waste:

If a waste is not found to be one of the Listed Wastes it may be an "unknown" waste, which must be tested to determine the nature of the waste properties or characteristics. The Characteristics to be evaluated are:

(i) Ignitability (Waste #D001): Any easily combustible or flammable liquid with a flash point less than 600 C (1400 F), or solid that burns easily.

(ii) Corrosivity (Waste #D002): Any waste that dissolves metals or other materials or burns the skin, pH less than 2 or greater than 12.5.

(iii) Reactivity (Waste #D003): Wastes which are unstable, release toxic gases, or undergo rapid or violent chemical reaction with water or other materials.
(iv) EP Toxicity (Waste #s D004-D017): Extracts of the material contain high concentrations of heavy metals and/or specific pesticides that could be released into ground water.

Appendix 2 contains the list of the contaminants and their maximum allowed concentrations to exempt from EPA Toxic designation.

**Hazardous Waste Accumulation and Storage:**

The University shall store all Hazardous Waste in a central temporary accumulation building. This temporary storage facility complies with subpart DD of the 40 CFR Part 265. The containment/storage building complies with 40 CFR 265.1101.

The University has two storage units within the containment building.

The chemical containment/storage building is located adjacent to the Dept. of Chemistry and Biochemistry building facing the Sheila Humphrey Recreational area parking lot.

**Inspection of the Temporary Accumulation unit**

The accumulation units shall be inspected regularly by the Hazardous Waste Coordinator to look for any signs of corrosion, dents, bulges, cracks, or other signs of deterioration that could cause hazardous waste to be released. The inspection shall be documented and retained for a period of one year. The standard for containment building condition reporting (40 CFR Part 265.1101 (c) (3) shall be followed upon detection of a condition that could lead to or has caused a release of hazardous waste.

**Emergency Preparedness and Prevention**

The central accumulation area/building shall be maintained and operated to minimize the potential for the release of hazardous material to the environment. (Refer to 40 CFR Part 265.31)

The following applicable emergency equipment and procedures shall be maintained in the central accumulation building by Facilities Management and periodically tested to ensure it is in working order:

- Fire alarms
- Spill control equipment
- Decontamination equipment
- Automatic sprinklers
- A posted list of emergency contact numbers
- All alarm systems and fire protection equipment shall be tested and maintained as necessary to assure its proper operation in the time of emergency by the Lamar University Facilities Management Department.
• Waste containers shall be arranged in the central accumulation area so that there is adequate aisle space to allow access for emergency personnel and equipment.
• Lamar University shall comply with the Preparedness and Prevention Standard 40 CFR Part 265.37 concerning emergency arrangements with local and state authorities.

**Procedures for Hazardous Waste Removal (Off-site)**

The Department of Risk Management shall require all contracted hazardous waste transporters to comply with the requirements set forth by this plan, in addition to the federal, state and local hazardous waste regulations.

**Packing**

The contracted hazardous waste transporter shall package all hazardous waste in accordance with all Department of Transportation regulations under 49 CFR Parts 173, 173.12 & Subpart B, 178, and 179.

The Department of Risk Management shall require all contracted hazardous waste transporters to carry emergency spill cleanup materials when packing hazardous materials for transportation.

**Labeling and Marking**

Before transporting the hazardous waste, the transporter shall label each package in accordance with Department of Transportation labeling requirements (49 CFR Part 172 Subpart D and E).

The transporter shall mark all containers of 110 gallons or less used in transportation with the following words and information displayed in accordance with the requirements of 49 CFR 172.304: “HAZARDOUS WASTE”

Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the “U.S. Environmental Protection Agency”.

**Placarding**

The transporter shall placard the transportation vehicle according to Department of Transportation regulations 49 CFR Part 172 Subpart F for hazardous materials.

**Manifest**

Lamar University Dept. of Environmental Health and Safety and Risk Management, Hazardous Waste Coordinator and hazardous waste transporter will mutually designate on the manifest one primary facility that is permitted to handle the waste described on the manifest.
Procedures for Hazardous Waste removal On-site

As waste is classified it shall be accumulated and stored until it can be disposed of. The following rules shall be applied to the accumulation and storage of materials classified as hazardous waste:

a. Hazardous wastes of differing classifications or physical properties shall be kept in separate closed containers, as shall wastes that are incompatible with one another. This will require that aqueous and organic wastes be separated. Halogenated and non-halogenated organic wastes shall be kept separate from one another.

b. Hazardous wastes shall be stored in closed containers that can be sealed and are not subject to decomposition by the contents.

(i) Aqueous hazardous waste solutions shall not be stored in metal drums.
(ii) Waste with pH greater than 8 wastes shall not be stored in glass containers.
(iii) Organic hazardous wastes shall be accumulated and stored in containers which do not contain polymer components that may be structurally weakened by exposure to the wastes.
(iv) Wide mouth containers shall not be used for liquids. Two inch space shall be maintained at the top of each container of liquid. Drums require a four inch head space.

c. Dry PPE waste (rags, towels, Tyvek suits, gloves etc.) is disposed of as Class I Non-RCRA Waste, assuming there are no visible liquids and no high toxicity constituents such as mercury, PCBs etc. This waste must be collected, bagged and labeled. This Non-RCRA Waste will be collected at the same time as any Hazardous Waste collection requested or by separate request. The local landfill is designated for municipal trash only; this waste needs to go a Class I landfill.

Universal Waste

This is any hazardous waste that is subject to 40 CFR Part 273 and TAC 335.261 and includes:

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

Nonhazardous waste:
Wastes that meet none of the criteria of hazardous wastes shall be considered as nonhazardous. Following certification of a waste as nonhazardous it may be treated as general garbage. It is important however that the waste be certified first.

**Disposal of Nonhazardous Wastes:**

The City of Beaumont does regulate what wastes may be disposed of in the public sewers. Some of these rules are more stringent than the criteria for classification of a waste as hazardous. Based on these rules, nonhazardous wastes that meet the following properties may NOT be disposed of in the sewer lines.

(i) Any fat, oil, grease, ash, cinder, sand, mud, shavings, metal, glass, tar or other solid or viscous liquid substance which may cause obstruction to the flow in sewer or other interferences with the proper operation of the wastewater treatment system.

(ii) Any liquid or vapor having a flash point temperature higher than 650°C (1500°F).

(iii) Any wastewater with a pH less than 6.0 or above 11.0 or having any corrosive property capable of causing damage or hazard to structures, equipment, or personnel of the wastewater treatment system.

(iv) Any waste or water containing suspended or undissolved solids of such character that unusual attention or expense is required to handle such material.

(v) Any water with objectionable odor or color.

**Hazardous Waste labelling:**

Original container labels shall be destroyed, defaced completely or preferably removed if used for chemical waste accumulation. When the waste is first added the words “Unwanted Material” or “other equally effective wording that is used consistently” shall be added to the label until time for collection and a “**Hazardous Waste**” determination made. Once unwanted material has been introduced to an accumulation/storage container, the date shall be noted on the container.

**Labelling Requirements:**

- EPA regulations require that waste containers be labelled with the chemical contents.
- The label has to have enough information to make a ‘Hazardous Waste’ determination.
• List all chemicals added including water. Lists can be continued on a separate label.
• List the amounts of the contributions to the container. Include the EPA waste identification number of a waste if known.
• Use full names of chemicals and compounds, NOT formula, abbreviations, or structures.
• GHS labels for all these chemicals listed shall be added.

If a chemical waste contains a material with hard-to-find Safety Data Sheets (e.g. an obscure proprietary material), then the Waste Generator shall supply an SDS for the Hazardous Waste Coordinator.

When a container is determined to require collection by the Hazardous Waste Assistant then a request shall be made and a completion date added to the label. The request for removal shall be by email, when containers are full or there is no expectation of any further wastes of the type in the container. This shall be within six months of the start of accumulation or within three days of the container being full if less than six months. (See section on Removal Procedures).

A file copy of the label used by the Hazardous Waste can be obtained from the Dept. of Risk Management Hazardous Waste Coordinator. Diagrams of these labels are shown in the “Labels” section. **Use of this label is encouraged.**

The labels can be printed on purpose made adhesive backed labels
On these labels;
The date is the date that accumulation is complete
The Waste Generator is the Principal Investigator or Research Faculty in charge of the lab that generated the waste.

Labels for containers of potentially explosive materials such as picric acid; silanes; nitro compounds and ethers shall indicate the percentage concentration of these chemicals.

Waste shall be removed from the site to the Waste handling area (room 114 in Chemistry building) by the Waste Handling Assistant. Waste from teaching laboratories shall be removed when all sections have completed the particular experiment that produces the waste. An exception to this exists where halogenated and non-halogenated organic solvent wastes produced in successive experiments are collected separately in larger containers. Such containers should be removed at the end of the semester.
Containers shall have a two inch headspace for bottles and four inch head space for drums.

Transport of waste shall be done following the rules for the transport of any chemical material.

Mercury thermometers that are broken and their pieces may contain small amounts of mercury and shall be placed in a separate labeled, and closed container from other glass,
this is considered hazardous waste, and shall be collected by the Hazardous Waste Assistant.

Clean glass wastes, particularly broken glass, shall be kept separate from the general garbage to avoid potential safety hazards to custodians. Specific glass containers shall be made available in each laboratory area for the disposal of glass waste. Workers shall wear goggles and appropriate gloves when disposing of this clean glass waste. **This waste is not collected by Dept. of Risk Management, it is the responsibility of the individual academic department.**

Needles, and needle-containing equipment (e.g. syringes with needles installed), are considered sharps waste, and thus medical waste. They must be disposed of in accordance with Texas regulation of health care facilities. In practice, this involves disposal via the University’s sharps containers, which are then sent back to the sharps container supplier, which safely processes the waste. The Hazardous Waste Disposal Coordinator can supply further details.

**Removal Procedures**

a. Once the container is ready for collection add the accumulation complete date and request collection by email from the Hazardous Waste Coordinator. The Coordinator needs to know the building and room number and shall generate an email response to the Hazardous Waste Assistant, copied to the generator. The Hazardous Waste Assistant shall arrange a fixed time to collect this waste with the generator and shall send this information by email, copied to the Coordinator.

b. Containers with improper caps, leaks, surface contamination or improper labelling shall not be accepted.

c. It is **illegal** to dispose of hazardous chemical in any of the following way:

   1. Disposal through the sanitary system
   2. Intentional evaporation in a fume hood.
   3. Disposal in the regular trash.

**Transportation**

- A two level cart, with a three-inch lip on each level, shall be used to transport all hazardous waste from the laboratory/site to the temporary handling area.
- Freight elevators, where possible, shall be used to transport waste to the temporary accumulation area. Personnel shall not ride the elevators with these materials.
- Chemically incompatible materials shall be separated using the two levels on the cart.
- Spill cleanup materials will be present on the cart at all times during pick-up of hazardous materials. Drip pads shall line each level of the cart to prevent any mixing of incompatible chemicals.
- Transportation cart shall be labeled with hazard warning signs.

**Personal Protection**
Personal protection equipment shall be required during hazardous waste pickups. Safety personnel will determine the level of protection required to safely transport the materials.

Labels
File copies of these can be obtained from the Waste Coordinator. Chemical name/common name shall be written for all chemicals in the container. Chemical Formulae or abbreviations are not acceptable. This information can be found on the SDS along with the GHS information.

UNIVERSAL WASTE
Lamar University
EPA ID No. TXD053623179

<table>
<thead>
<tr>
<th>Chemical Composition and Associated Hazard</th>
<th>%</th>
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</tbody>
</table>

☐ Corrosive        ☐ Reactive        ☐ Other (explain)
☐ Non-Hazardous    ☐ Toxic           ☐ Ignitable     ☐ Oxidizer

Waste Generator information
Department
Building
HAZARDOUS WASTE
Lamar University
EPA ID No. TXD053623179

<table>
<thead>
<tr>
<th>Chemical Composition and Associated Hazard</th>
<th>%</th>
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</tr>
</tbody>
</table>

☐ Corrosive ☐ Reactive ☐ Other (explain)
☐ Non-Hazardous ☐ Toxic
☐ Ignitable ☐ Oxidizer

Waste Generator information
Department
Building

Emergency Procedures

All employees shall be informed of hazardous materials they might use or be exposed to at work. In addition the program shall include recorded training on handling spills and other emergencies. Safety Data Sheets are a source of this information and shall be maintained for all chemicals used or stored within a workplace. Special cleanup supplies shall be available and employees shall be trained on how to use these supplies. Contaminated clothing, rags, absorbent materials, or other waste from cleanup of spills or leaks must be disposed of as hazardous waste.

All labs shall post emergency numbers to be used and develop response procedures for emergencies.

Emergency Telephone numbers:

LU Police        409.880.7777
LU Health center  409.880.8466
LU Safety Specialist  409.880.8276
Email: nmacy@lamar.edu
LU Hazardous waste coordinator  409.880.8276
Email: nmacy@lamar.edu

Off Campus:
Emergency Spill Response Plan for laboratories

Training

The University Hazardous Waste Coordinator shall provide training to the laboratory Principal Investigator, Chemical Hygiene Officer, and anyone who handles hazardous waste in laboratories. Each employee/student shall receive training on proper handling of chemicals and emergency response procedures.

Initial training shall be completed during the first month of employment (refresher training is provided annually thereafter). Hazardous waste training shall be conducted as part of the annual laboratory safety training.

The laboratory Principal Investigator, Moderator, Chemical Hygiene Officer, shall document all hazardous waste training. Training records will be kept for at least three years from the date the employee last worked at the university.

Appendix 1

Definitions

Central Accumulation Area/building – Area designated for the storage of hazardous wastes prior to moving to permitted disposal facility

Generator – Any person who produces hazardous waste.

Hazardous material – material that has been determined to pose an unreasonable risk to health, safety and property when transported.

Hazardous Waste – Any waste material listed or identified in title 40 CFR, part 261, sub-part C and D or exhibiting the characteristics of ignitability, corrosivity, reactivity, or toxicity also defined in Part 261.

Manifest – A legal document containing required information, which has to accompany shipments of 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 Environmental Protection Agency (EPA) or the Texas Commission on Environmental Quality (TCEQ) 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.

**Placard** – Diamond shaped color coded signs placed on the outside of transporting vehicles indicating the hazards of the cargo.

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

**Waste Handling Area** – The area used to log in and prepare appropriate labels for material collected as Chemical Waste prior to moving into the Central Accumulation Area.

### Appendix 2

**EPA HAZARDOUS WASTE CODES**

For up-to-date information, consult US CFR Title 40, Sub-parts C-E.

<table>
<thead>
<tr>
<th>Code</th>
<th>Waste description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D001</td>
<td>Ignitable waste-A solid exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:</td>
</tr>
<tr>
<td></td>
<td>(1) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume and has a flash point less than 60ºC(140ºF) as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D-93-79 or D-93-80, or a Setashflash Closed Cup Tester, using the method specified in ASTM Standard D-3278-78, or as determined by an equivalent test method approved by the Administrator under procedures set forth in 40 CFR Part 260.</td>
</tr>
<tr>
<td></td>
<td>(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. For solids, this can be tested through SW-846 Test Method 1030.</td>
</tr>
</tbody>
</table>
(3) It is an ignitable compressed gas as defined in 49 CFR Part 173 and as determined by the test methods described in that regulation or equivalent test methods approved by the Administrator under 40 CFR Part 260. (4) It is an oxidizer as defined in 49 CFR Part 173.

D002  Corrosive waste-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 either an EPA test method or an equivalent test method approved by the Administrator under the procedures set forth in 40 CFR Part 260.

(2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 MM (0.25 inch) per year at a test temperature of 55 C (130 F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01069 or an equivalent test method approved by the Administrator under the procedures set forth in 40 CFR Part 260.

D003  Reactive waste: 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 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 decomposition or reaction at standard temperature and pressure.
(7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.
(8) It is a forbidden explosive, a Class A explosive, or a Class B explosive as defined in 49 CFR Part 173.

EP Toxicity-  A solid waste exhibits the characteristic of EP toxicity if, using the test methods described in 40 CFR Part 261 Appendix 11 (Toxicity Characteristic Leaching Procedure (TCLP) SW-846 Test Method 1311) or equivalent methods approved by the Administrator under the procedures set forth in 40 CFR Part 260, the extract from a representative sample of the waste contains any of the contaminants listed as D004 thru D017 at a concentration equal to or greater than the respective value given. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering, is considered to be the extract for the purposes of this section.

Waste Description, 2009
<table>
<thead>
<tr>
<th>EPA HW No.¹</th>
<th>Contaminant</th>
<th>CAS No.²</th>
<th>Regulatory Level (mg/L)</th>
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<tbody>
<tr>
<td>D004</td>
<td>Arsenic</td>
<td>7440-38-2</td>
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<td>D005</td>
<td>Barium</td>
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<td>D018</td>
<td>Benzene</td>
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<td>D006</td>
<td>Cadmium</td>
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<td>Carbon tetrachloride</td>
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<td>D020</td>
<td>Chlordane</td>
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<td>D021</td>
<td>Chlorobenzene</td>
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<td>Chloroform</td>
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<td>Chromium</td>
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<td>D023</td>
<td>o-Cresol</td>
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<td>D012</td>
<td>Endrin</td>
<td>72-20-8</td>
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<td>Heptachlor (and its epoxide)</td>
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<td>D032</td>
<td>Hexachlorobenzene</td>
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<td>Hexachloroethane</td>
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<td>Lindane</td>
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<td>Mercury</td>
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<td>Methoxychlor</td>
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</tr>
<tr>
<td>D035</td>
<td>Methyl ethyl ketone</td>
<td>78-93-3</td>
<td>200.0</td>
</tr>
</tbody>
</table>
§261.31 Hazardous wastes from non-specific sources.

(a) The following solid wastes are listed hazardous wastes from non-specific sources unless they are excluded under §§260.20 and 260.22 and listed in appendix IX.

<table>
<thead>
<tr>
<th>Industry and EPA hazardous waste No.</th>
<th>Hazardous waste</th>
<th>Hazard code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generic:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F001</td>
<td>The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures</td>
<td>(T)</td>
</tr>
<tr>
<td>F002</td>
<td>The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in</td>
<td>(T)</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Notes</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F003</td>
<td>The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures</td>
<td>(I)*</td>
</tr>
<tr>
<td>F004</td>
<td>The following spent non-halogenated solvents: Cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures</td>
<td>(T)</td>
</tr>
<tr>
<td>F005</td>
<td>The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures</td>
<td>(I,T)</td>
</tr>
<tr>
<td>F006</td>
<td>Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum</td>
<td>(T)</td>
</tr>
<tr>
<td>F007</td>
<td>Spent cyanide plating bath solutions from electroplating operations</td>
<td>(R, T)</td>
</tr>
<tr>
<td>F008</td>
<td>Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process</td>
<td>(R, T)</td>
</tr>
<tr>
<td>F009</td>
<td>Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process</td>
<td>(R, T)</td>
</tr>
<tr>
<td>F010</td>
<td>Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process</td>
<td>(R, T)</td>
</tr>
<tr>
<td>F011</td>
<td>Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations</td>
<td>(R, T)</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>F012</td>
<td>Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process</td>
<td>(T)</td>
</tr>
<tr>
<td>F019</td>
<td>Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process. Wastewater treatment sludges from the manufacturing of motor vehicles using a zinc phosphating process will not be subject to this listing at the point of generation if the wastes are not placed outside on the land prior to shipment to a landfill for disposal and are either: disposed in a Subtitle D municipal or industrial landfill unit that is equipped with a single clay liner and is permitted, licensed or otherwise authorized by the state; or disposed in a landfill unit subject to, or otherwise meeting, the landfill requirements in §258.40, §264.301 or §265.301. For the purposes of this listing, motor vehicle manufacturing is defined in paragraph (b)(4)(i) of this section and (b)(4)(ii) of this section describes the recordkeeping requirements for motor vehicle manufacturing facilities.</td>
<td>(T)</td>
</tr>
<tr>
<td>F020</td>
<td>Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol.)</td>
<td>(H)</td>
</tr>
<tr>
<td>F021</td>
<td>Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives</td>
<td>(H)</td>
</tr>
<tr>
<td>F022</td>
<td>Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions</td>
<td>(H)</td>
</tr>
<tr>
<td>F023</td>
<td>Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of Hexachlorophene from highly purified 2,4,5-trichlorophenol.)</td>
<td>(H)</td>
</tr>
<tr>
<td>F024</td>
<td>Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in §261.31 or §261.32.) (T)</td>
<td></td>
</tr>
<tr>
<td>F025</td>
<td>Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution (T)</td>
<td></td>
</tr>
<tr>
<td>F026</td>
<td>Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions (H)</td>
<td></td>
</tr>
<tr>
<td>F027</td>
<td>Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing Hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.) (H)</td>
<td></td>
</tr>
<tr>
<td>F028</td>
<td>Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027 (T)</td>
<td></td>
</tr>
<tr>
<td>F032</td>
<td>Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with §261.35 of this chapter or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol (T)</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>F034</td>
<td>Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol (T)</td>
<td></td>
</tr>
<tr>
<td>F035</td>
<td>Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol (T)</td>
<td></td>
</tr>
<tr>
<td>F037</td>
<td>Petroleum refinery primary oil/water/solids separation sludge—Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under §261.4(a)(12)(i), if those residuals are to be disposed of (T)</td>
<td></td>
</tr>
<tr>
<td>F038</td>
<td>Petroleum refinery secondary (emulsified) oil/water/solids separation sludge—Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing (T)</td>
<td></td>
</tr>
</tbody>
</table>
Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Wastes retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028.)

*(I,T)* should be used to specify mixtures that are ignitable and contain toxic constituents.

(b) Listing Specific Definitions:

(1) For the purposes of the F037 and F038 listings, oil/water/solids is defined as oil and/or water and/or solids.

(2)(i) For the purposes of the F037 and F038 listings, aggressive biological treatment units are defined as units which employ one of the following four treatment methods: activated sludge; trickling filter; rotating biological contactor for the continuous accelerated biological oxidation of wastewaters; or high-rate aeration. High-rate aeration is a system of surface impoundments or tanks, in which intense mechanical aeration is used to completely mix the wastes, enhance biological activity, and (A) the units employ a minimum of 6 hp per million gallons of treatment volume; and either (B) the hydraulic retention time of the unit is no longer than 5 days; or (C) the hydraulic retention time is no longer than 30 days and the unit does not generate a sludge that is a hazardous waste by the Toxicity Characteristic.

(ii) Generators and treatment, storage and disposal facilities have the burden of proving that their sludges are exempt from listing as F037 and F038 wastes under this definition. Generators and treatment, storage and disposal facilities must maintain, in their operating or other onsite records, documents and data sufficient to prove that: (A) the unit is an aggressive biological treatment unit as defined in this subsection; and (B) the sludges sought to be exempted from the definitions of F037 and/or F038 were actually generated in the aggressive biological treatment unit.

(3)(i) For the purposes of the F037 listing, sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement.

(ii) For the purposes of the F038 listing, (A) sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement and (B) floats are considered to be generated at the moment they are formed in the top of the unit.

(4) For the purposes of the F019 listing, the following apply to wastewater treatment sludges from the manufacturing of motor vehicles using a zinc phosphating process.

(i) Motor vehicle manufacturing is defined to include the manufacture of automobiles and light trucks/utility vehicles (including light duty vans, pick-up trucks, minivans, and sport utility vehicles). Facilities must be engaged in manufacturing complete vehicles (body and chassis or unibody) or chassis only.
(ii) Generators must maintain in their on-site records documentation and information sufficient to prove that the wastewater treatment sludges to be exempted from the F019 listing meet the conditions of the listing. These records must include: the volume of waste generated and disposed of off site; documentation showing when the waste volumes were generated and sent off site; the name and address of the receiving facility; and documentation confirming receipt of the waste by the receiving facility. Generators must maintain these documents on site for no less than three years. The retention period for the documentation is automatically extended during the course of any enforcement action or as requested by the Regional Administrator or the state regulatory authority.

[46 FR 4617, Jan. 16, 1981]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §261.31, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at www.govinfo.gov.

Waste Codes

Dxxx – Characteristics of Hazardous Waste (See 40 CFR 261.24)
Fxxx – Hazardous Waste from Non-specific Sources (See 40 CFR 261.31)
Kxxx – Hazardous Waste from Specific Sources (See 40 CFR 261.32)
Pxxx – Discarded Commercial Chemical Products, Off-specification Species, Container Residuals, and Spill Residues thereof – Acute Hazardous Waste (See 40 CFR 261.33)
Uxxx – Discarded Commercial Chemical Products, Off-specification Species, Container Residuals, and Spill Residues thereof – Toxic Wastes (See 40 CFR 261.33)

<table>
<thead>
<tr>
<th>Code</th>
<th>Waste Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P023</td>
<td>Acetaldehyde, Chloro-</td>
</tr>
<tr>
<td>P002</td>
<td>Acetamide, N- (aminothiooxomethyl)-</td>
</tr>
<tr>
<td>P057</td>
<td>Acetamide, 2-fluoro-</td>
</tr>
<tr>
<td>P058</td>
<td>Acetic acid, fluoro-, sodium salt</td>
</tr>
<tr>
<td>P066</td>
<td>Acetimidic acid, N-[(methylcarbamoyl) oxylthio-, methyl ester</td>
</tr>
<tr>
<td>P002</td>
<td>1-Acetyl-2-thiourea</td>
</tr>
<tr>
<td>P003</td>
<td>Acrolein</td>
</tr>
<tr>
<td>P070</td>
<td>Aldicarb</td>
</tr>
<tr>
<td>P004</td>
<td>Aldrin</td>
</tr>
<tr>
<td>P005</td>
<td>Allyl alcohol</td>
</tr>
<tr>
<td>P006</td>
<td>Aluminum phosphide</td>
</tr>
<tr>
<td>P007</td>
<td>4-alpha-Aminopyridine</td>
</tr>
<tr>
<td>P009</td>
<td>Ammonium picrate</td>
</tr>
<tr>
<td>P119</td>
<td>Ammonium vanadate</td>
</tr>
<tr>
<td>P010</td>
<td>Arsenic acid</td>
</tr>
<tr>
<td>P012</td>
<td>Arsenic (III) oxide</td>
</tr>
<tr>
<td>P011</td>
<td>Arsenic (V) oxide</td>
</tr>
<tr>
<td>P011</td>
<td>Arsenic pentoxide</td>
</tr>
</tbody>
</table>
P012  Arsenic trioxide
P038  Arsine, diethyl
P036  Arsenous dichloride, phenyl-
P054  Aziridine
P013  Barium cyanide
P024  Benzenamine, 4-chloro-
P077  Benzenamine, 4-nitro-
P028  Benzene, (chloromethyl)-
P042  1,2-Benzenediol, 4[1-hydroxy -2-(methylamino)ethyl]-
P046  Benzenethanamine, alpha, alphadimethyl-
P014  Benzenethiol
P001  2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-l-phenylbutyl)-and salts
P028  Benzyl chloride
P015  Beryllium dust
P016  Bis(chloromethyl)ether
P017  Bromoacetone
P018  Brucine
P021  Calcium cyanide
P022  Carbon disulfide
P022  Carbon disulfide
P095  Carbonic dichloride
P023  Chloroacetaldehyde
P024  p-Chloroaaniine
P029  Copper cyanide
P030  Cyanides (soluble cyanide salts), not otherwise specified
P031  Cyanogen
P033  Cyanogen chloride
P034  2-Cyclohexyl-4,6-dinitrophenol
P036  Dichrophenylarsine
P037  Dieldrin
P038  Diethylarsine
P041  Diethyl-p-nitrophenyl phosphate
P040  O,O-Diethyl O-pyrazinylphosphorothioate
P043  Diisopropyl fluorophosphates (DEP)
P004  1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1-alpha, 4-alpha. 4a-beta, 5-alpha, 8-alpha, 8abeta)-

P060  1,4,5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro1,4,4a,5,8,8a-hexahydro-(1-alpha, 4-alpha, 4a-beta, 5-beta, 8-beta, 8abeta)-

P037  1,2,3,4,10,10-Hexahydro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydroendo,exo-1,4,5,8-dimethanonaphthalene

P051  1,2,3,4,10,10-Hexahydro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydroendo,endo-,4,5,8-dimethanonaphthalene
P060 Hexachlorohexahydro-exoexodemethanonaphthalene
P044 Dimethoate
P045 3,3-Dimethyl-1-(methylthio)- 2-butanone, O-[(methylamino)carbonyloxime
P046 alpha,alpha-Dimethylphenethylamine
P047 4,6-Dinitro-o-cresol and salts
P048 2,4-Dinitrophenol
P020 Dinoseb
P085 Diphosphoramidate, octamethyl-
P039 Disulfoton
P049 2,4-Dithiobiuret
P050 Endosulfan
P088 Endothal
P051 Endrin
P042 Epinephrine
P101 Ethylcyanide
P054 Ethyleneimine
P097 Famphur
P056 Fluorine
P057 Fluoroacetamide
P058 Fluoroacetic acid, sodium salt
P065 Fulminic acid, mercury (2+)salt
P059 Heptachlor
P062 Hexaethyltetraphosphate
P116 Hydrazinecarbothioamide
P068 Hydrazine, methyl-
P063 Hydrocyanic acid
P063 Hydrogen cyanide
P096 Hydrogen phosphide
P064 Isocyanic acid, methyl ester
P060 Isodrin
P007 3 (sH) -Isoxazolone, 5-(aminomethyl)-
P092 Mercury, (acetato-O)phenyl
P065 Mercury fulminate
P082 Methamine,N-methyl-N-nitroso-
P016 Methane, oxybis(chloro-
P112 Methane, tetranitro-
P118 Methanethiol, trichloro-P050 6,9-Methano-2,4,3-benzodioxathiepen,6,7,8,9
10,10-hexachloro-1,5,5a,6,9,9ahexahydro-3-oxide
P059 4,7-Methano- 1H-indene,1,4,5,6,7,8,8-heptachloro-3a,4,7,7tetrahydro-
P066 Methomyl
P067 2-Methylaziridine
P068 Methyl hydrazine
P064 Methyl isocyanate
P069 2-Methylactonitrile
P071 Methyl parathion
P072 alpha-Naphthylthiourea
Nickel carbonyl
Nicotine and salts
Nitric oxide
p-Nitroanilinc
Nitrogen dioxide
Nitrogen oxide NO
Nitrogen oxide NO2
Nitroglycerine
N-Nitrosodimethylamine
N-Nitrosomethylvinylamine
Nickel cyanide
Octamethy lpyrophosphoramide
Osium oxide
Osium tetroxide
7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
Parathion
Phenol, 2-cyclohexyl-4,6-dinitro-
Phenol, 2,4-dinitro
Phenol, 2-methyl-4,6-dinitro- and salts
Phenol,2-[(1-methylpropyl)-4,6-dinitro-
Phenol, 2,4,6-trinitro-, ammonium salt
Phenylmercury acetate
Phenylthiourea
Phorate
Phosgene
Phosphine
Phosphoric acid, diethyl 4-nitrophenylester
Phosphorodithioic acid, O,O-diethylS-[2-(ethylthio)ethyl] ester
Phosphorodithioic acid, O,O-diethylS-[ethylthio)methyl] ester
Phosphorodithioic acid, O,O-dimethyl S [2-(methylamino)-2-Oxoethyl]ester
Phosphorofluoric acid, bis(lmethylethyl)-ester
Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenynt) ester
Phosphorothioic acid, O,O-diethyl-O-pyrazinyl ester
Phosphorothioic acid, O-[4-(dimethylamino)sulfonylphenyl] O,O-dimethyl ester
Phosphorothioic acid, O,O-dimethylO-(4-nitrophenyl) ester
Plumbane, tetraethyl-
Potassium cyanide
Potassium silver cyanide
Prop anal,2-methyl-2-(methylthio)-O-
Propanenitrile
Propanenitrile, 3-chloro
Propanenitrile, 2-hydroxy-2methyl
1,2,3-Propanetriol, trinitrate
2-Propanone, 1-bromo-P102 Propargyl alcohol
2-Propenal
2-Propen-l-ol
P067 1,2-Propylenimine
P102 2-Propyn-1-ol
P008 Pyridinamine
P075 Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts
P111 Pyrophosphoric acid, tetraethyl ester
P103 Selenourea
P104 Silver cyanide
P105 Sodium azide
P106 Sodium cyanide
P107 Strontium sulfide
P108 Strychnidin-10-one, and salts
P018 Strychnidin-10-one, 2,3dimethoxy-
P108 Strychnine and salts
P115 Sulfuric acid, thallium(I) salt
P109 Tetraethyl dithiopyrophosphate
P110 Tetraethyl lead
P111 Tetraethylpyrophosphate
P112 Tetrinitromethane
P062 Tetraphosphoric acid, hexaethyl ester
P113 Thallic oxide
P113 Thallium(III) oxide
P114 Thallium(I) selenite
P115 Thallium(I) sulfate
P109 Thiodiphosphoric acid, tetraethyl ester
P045 Thiofanox
P049 Thioimidodicarbonic diazide
P014 Thiophenol
P116 Thiosemicarbazide
P026 Thiourea, (2-chlorophenyl)-
P076 Thiourea, 1-naphthalenyl-
P093 Thiourea, phenyl-
P123 Toxaphene
P118 Trichloromethanethiol
P119 Vanadic acid, ammonium salt
P120 Vanadium(V) oxide
P084 Vinilamine, N-methyl-nitroso-
P001 Warfarin
P121 Zinc cyanide
P122 Zinc phosphide

Discarded Commercial Chemical Products, Off-Specification Species, Container Residues, and Spill Residues Thereof-Toxic Waste

U001 Acetaldehyde
U034 Acetaldehyde. trichloro-
U187 Acetamide, N-(4-ethoxyphenyl)-
Acetamide, N-914-fluoren-2-yl
Acetic acid, ethyl ester
Acetic acid, lead salt
Acetic acid, thallium (1+) salt
Acetic acid, (2,4,5-trichlorophenoxy)-
Acetone
Acetonitrile
Acetophenone
2-Acetylaminofluorene
Acetyl chloride
Acrylamide
Acrylic acid
Acrylonitrile
Amitrole
Aniline
Auramine
Azaserine
Azirino(2', 3':3,4) pyrrolo-[1,2-a]indole-4,7-dione, 6-amino-8[(((aminocarbonyl)ocy)methyl]-1,la,2,8,8a,8b-hexahydro-8amethoxy-5-methyl-
Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
3,4-Benzacridine
Benzal chloride
Benzamide, 3,5-dichloro-N-(1,ldiethyl-2-propynyl)-
Benz[a]anthracene
Benz[a] anthracene, 7,12-dimethyl-
Benzenamine
Benzenamine, 4,4'-carbonimidoylbis(N,N-dimethyl-)
Benzenamine, 4-chloro-2-methyl-
Benzenamine, N,N-dimethyl-4-(phenylazo)-
Benzenamine, 2-methyl-
Benzenamine, 4-methyl-
Benzenamine, 4,4'-methylenebis(2-chloro-)
Benzenamine, 2-methyl-, hydrochloride
Benzenamine, 2-methyl-5-nitro
Benzenene
Benzeneacetic acid, 4-chloroalpha-(4-chlorophenyl)-alpha-hydroxy,ethyl ester
Benzene, 1-bromo-4-phenoxy-
Benzenebutanoic acid,4-[bis(2-chloroethyl) amino]-
Benzene, chloro-
Benzenediamine. ar-methyl
1,2-Benzenedicarboxylic acid, bis(2-ethylhexy) ester
1,2-Benzenedicarboxylic acid, dibutylester
1,2-Benzenedicarboxylic acid, diethylester
1,2-Benzenedicarboxylic acid, dimethylester
1,2-Benzenedicarboxylic acid,di-n-octyl ester
U070  Benzene, 1,2-dichloro-
U071  Benzene, 1,3-dichloro-
U072  Benzene, 1,4-dichloro-
U060  Benzene, 1,1'-((2,2-dichloroethylidene)bis[4-chloro-
U017  Benzene, (dichloromethyl)-
U223  Benzene, 1,3-diisocyanatomethyl-
U239  Benzene, dimethyl-
U201  1,3-Benzenediols-
U127  Benzene, hexachloro-
U056  Benzene, hexahydro-
U220  Benzene, methyl-
U105  Benzene, 1-methyl-2,4-dinitro-
U106  Benzene, 2-methyl-1,3-dinitro-
U055  Benzene, (1-methylethyl)-
U169  Benzene, nitro-
U183  Benzene, pentachloro-
U185  Benzene, pentachloronitro-
U020  Benzenesulfonic acid chloride-
U020  Benzenesulfonyl chloride-
U207  Benzene, 1,2,4,5-tetrachloro-
U061  Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-
U247  Benzene, 1,1'-(2,2,2-trichloroethylidene)[4-ethoxy-
U023  Benzene, (trichloromethyl)-
U234  Benzene, 1,3,5-trinitro-
U021  Benzidine-
U202  1,2-Benzisothiazol-3-(2H)one, 1,1-dioxide and salts-
U203  1,3-Benzodioxole, 5-(2-propenyl)-
U141  1,3-Benzodioxole, 5-(1-propenyl)-
U090  1,3-Benzodioxole, 5-propyl-
U064  Benzo[rst]pentaphene-
U022  Benzo[a]pyrene-
U197  p-Benzquinone-
U023  Benzotrichloride-
U085  2,2'-Bioxirane-
U021  (1,l' Biphenyl)-4,4'diamine-
U073  (1,l' Biphenyl)-4,4'-diamine, 3,3-dichloro-
U091  (1,l' Biphenyl)-4,4'-diamine, 3,3'-dimethoxy-
U095  (1,l' Biphenyl)-4,4'-diamine, 3,3'-dimethyl-
U027  Bis(2-chloroisopropyl)ether-
U024  Bis(2-chloromethoxy)ethane-
U028  Bis(2-ethylhexyl)phthalate-
U225  Bromoform-
U030  4-Bromophenyl phenyl ether-
U128  1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U172  1,Butanamine, N-butyl-N-nitroso-
U031  1-Butanol-
2-Butanone
2-Butanone peroxide
2-Butenal
2-Butene, 1,4-dichloro-
2-Butenoic acid, 2-methyl-, 7-[(2,3-dihydroxy-2-(1-methoxyethyl)-3-methy
1-oxobutoxy) methyl-12,3,5,7a-tetrahydro-1-pyrrolizin-1-yl ester,[1S-[alpha
(Z),7(2S, R),7aa;-Pha])-
n-Butyl alcohol
Cacodylic acid
Calcium chromate
Carbamic acid, ethyl ester
Carbamic acid, imethylnitroso-, ethylester
Carbamic acid, dimethyl-
Carbamodithioic acid, 1,2-ethanediylbis-, salts and esters
Carbonic acid, dithallium(1+) salt
Carbonic difluoride
Carbonochloridic acid, methyl ester
Carbon oxyfluoride
Carbon tetrachloride
Chloral
Chlorambucil.
Chlordane
Chlornaphazine
Chlorobenzene
p-Chloro-m-cresol
1-Chloro-2,3-epoxypropane
2-Chloroethyl vinyl ether
Chloroform
Chloromethyl methyl ether
beta-Chloronaphthalene
o-Chlorophenol
4-Chloro-o-toluidine, hydrochloride
Chromic acid, calcium salt
Chrysene
Creosote
Cresole (Cresylic acid)
Crotonaldehyde
Cumene
Cyanogen bromide
2,5-Cyclohexadiene-1, 4-dione
Cyclohexane
Cyclohexanone
1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
Cyclophosphamid
2.4-D, salts and esters
Daunomycin
DDD
DDT
Diallyl,
Dibenz[a,h]anthracene
Dibenzo[a,i]pyrene
1,2-Dibromo-3-chloropropane
Dibutyl phthalate
o-Dichlorobenzene
m-Dichlorobenzene,
p-Dichlorobenzene
3,3'-Dichlorobenzidine
1,4-Dichloro-2-butene
Dichlorodifluoromethane
1,1-Dichloroethylene
1,2-Dichloroethylene
Dichloroethyl ether
2,4-Dichlorophenol
2,6-Dichlorophenol
2,4-Dichlorophenox acetic acid salts and esters
1,2-Dichloropropane
1,3-Dichloropropene
1,2,3,4-Diepoxybutane
1,4-Diethyleneoxide
N,N-Diethylhydrazine
O,O-Diethyl-S-methyl-dithiophosphate
Diethyl phthalate
Diethylstilbestrol
Dihydrosafrole
3,3'-Dimethoxybenzidine
Dimethylamine
Dimethylaminoazobenzene
7,12-Dimethylbenz[a]anthracene
3,3'-Dimethylbenzidine
alpha,alpha-Dimethylbenzylhydroperoxide
Dimethylcarbamoyl chloride
1,1-Dimethylhydrazine
1,2-Dimethylhydrazine
2,4-Dimethylphenol
Dimethyl phthalate
Dimethyl sulfate
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
1,4-Dioxane
1,2-Diphenylhydrazine
Dipropylamine
Di-n-propylnitrosamine
Ethanal
Ethanamine, N-ethyl-N-nitroso-
Ethanediamine, N,N-dimethyl-N'-(2-thienylmethyl)-
Ethane, 1,2-dibromo-
Ethane, 1,1-dichloro-
Ethane, 1,2-dichloro-
Ethane, hexachloro-
Ethane, 1, 1'-[methylenebis(oxy)]bis[2-chloro-
Ethane, 1,1'-oxybis-
Ethane, 1,1'-oxybis[2-chloro-
Ethane, pentachloro-
Ethane, 1,1,1,2-tetrachloro-
Ethane, 1,2,2-tetrachloro-
Ethanethioamide
Ethanol, 2-ethoxy-
Ethene, chloro-
Ethene, (2-chloroethoxy)-
Ethene, 1,1-dichloro-
Ethene, 1,2-dichloro-(E)-
Ethene, tetrahydro-
Ethene, trichloro
Ethyl acetate
Ethyl acrylate
Ethyl carbamate
Ethyl 4,4'-dichlorobenzilate
Ethylenebisdithiocarbamic acid, saltsand esters
Ethylene dibromide
Ethylene dichloride
Ethylene glycol monoethylether
Ethylene oxide
Ethylene thiourea
Ethyl ether
Ethylidene dichloride
Ethyl methacrylate
Ethylmethanesulfonate
Fluorantheme
Formaldehyde
Formic acid
Furan
2-Furancarboxaldehyde
2,5-Furandione
Furan, tetrahydro-
U125  Furfural
U124  Furfuran
U206  D-Glucopyranose, 2-deoxy-2(3-methyl-3-nitrosourcido)-
U126  Glycidylaldehyde
U163  Guanidine, N-methyl-N'-nitro-N-nitroso-
U127  Hexachlorobenzene
U128  Hexachlorobutadiene
U129  Hexachlorocyclohexane(gammaisomer)
U130  Hexachlorocyclopentadiene
U131  Hexachloroethane
U132  Hexachlorophene
U243  14exachloropropene
U133  Hydrazine
U086  Hydrazine, 1,2-diethyl-
U098  Hydrazine, 1, 1 -dimethyl-
U099  Hydrazine, 1,2,-dimethyl
U109  Hydrazine, 1,2 -diphenyl
U134  Hydrofluoric acid
U 134  Hydrogen fluoride
U135  Hydrogen sulfide
U096  Hydroperoxide,l-methyl-l-phenylethyl-
U136  Hydroxydimethylarsine xide
U116  2-Imidazolidinethione
U137  Indeno[1,2,3-cd]pyrene
U139  Iron dextran
U190  1,3-Isobenzofurandione
U140  Isobutyl alcohol
U141  Isosafrole
U142  Kepone
U143  Lasiocarpine
U144  Lead acetate
U146  Lead, bis(acetate-O)tetrahydroxytri-
U145  Lead phosphate
U146  Lead subacetate
U129  Lindane
U147  Maleic anhydride
U148  Maleic hydrazide
U149  Malonitrile
U150  Melphalan
U151  Mercury
U152  Methacrylonitrile
U092  Methanamine, N-methyl-
U029  Methane, bromo-
U045  Methane, chloro-
U046  Methane, chloromethoxy-
U068  Methane, dibromo-
<table>
<thead>
<tr>
<th>Code</th>
<th>Name</th>
</tr>
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<tbody>
<tr>
<td>U080</td>
<td>Methane, dichloro-</td>
</tr>
<tr>
<td>U075</td>
<td>Methane, dichlorodifluoro-</td>
</tr>
<tr>
<td>U138</td>
<td>Methane, iodo-</td>
</tr>
<tr>
<td>U119</td>
<td>Methanesulfonic acid, ethyl ester</td>
</tr>
<tr>
<td>U211</td>
<td>Methane, tetrachloro-</td>
</tr>
<tr>
<td>U153</td>
<td>Methanethiol</td>
</tr>
<tr>
<td>U225</td>
<td>Methane, tribromo-</td>
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<td>U044</td>
<td>Methane, trichloro-</td>
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<td>U121</td>
<td>Methane, trichlorofluoro-</td>
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<tr>
<td>U123</td>
<td>Methanoic acid</td>
</tr>
<tr>
<td>U154</td>
<td>Methanol</td>
</tr>
<tr>
<td>U155</td>
<td>Methaprylene</td>
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<tr>
<td>U142</td>
<td>1,3,4-Metheno-2Hcyclobutal[cd]pentalen-2-one,l,la,3,3a,4,5,5a,5b,6-decachlorooctahydro-</td>
</tr>
<tr>
<td>U247</td>
<td>Methoxychlor</td>
</tr>
<tr>
<td>U154</td>
<td>Methyl alcohol</td>
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<tr>
<td>U029</td>
<td>Methyl bromide</td>
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<tr>
<td>U186</td>
<td>1-Methylbutadiene</td>
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<tr>
<td>U045</td>
<td>Methyl chloride</td>
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<tr>
<td>U156</td>
<td>Methylchlorocarbonate</td>
</tr>
<tr>
<td>U226</td>
<td>Methylchloroform</td>
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<tr>
<td>U157</td>
<td>3-Methylcholanthrene</td>
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<tr>
<td>U158</td>
<td>4,4'-Methylenebis(2-chloroaniline)</td>
</tr>
<tr>
<td>U068</td>
<td>Methylene bromide</td>
</tr>
<tr>
<td>U080</td>
<td>Methylene chloride</td>
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<tr>
<td>U159</td>
<td>Methyl ethyl ketone</td>
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<tr>
<td>U160</td>
<td>Methyl ethyl ketone peroxide</td>
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<tr>
<td>U138</td>
<td>Methyl iodide</td>
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<tr>
<td>U161</td>
<td>Methyl isobutyl ketone</td>
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<tr>
<td>U162</td>
<td>N-Methyl-N'-nitro-N-nitrosoguanidine</td>
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<tr>
<td>U161</td>
<td>4-Methyl-2-pentanone</td>
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<tr>
<td>U164</td>
<td>Methylthiouracil</td>
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<tr>
<td>U010</td>
<td>Mitomycin C</td>
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<tr>
<td>U059</td>
<td>5,12-Naphthacenedione, (8S-cis)-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-</td>
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<tr>
<td>U165</td>
<td>Naphthalene</td>
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<tr>
<td>U047</td>
<td>Naphthalene, 2-chloro-</td>
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<tr>
<td>U166</td>
<td>1,4-Naphthalenedione</td>
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<tr>
<td>U236</td>
<td>2,7-Naphthathenedisulfonic acid,3,3'-dimethyl-(1,1'-biphenyl)-4,4' diyl]-bis(azo)bis(S-amino-4-hydroxy)-,tetrasodium salt</td>
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<tr>
<td>U166</td>
<td>1,4-Naphthoquinone</td>
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<tr>
<td>U167</td>
<td>alpha-Naphthylamine</td>
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<tr>
<td>U168</td>
<td>beta- Naphthylamine</td>
</tr>
<tr>
<td>U026</td>
<td>2-Naphthylamine, N,N'-bis(2-chloromethyl)-</td>
</tr>
<tr>
<td>U167</td>
<td>1-Naphthylamine</td>
</tr>
<tr>
<td>U168</td>
<td>2-Naphthylamine</td>
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</tbody>
</table>
Nitric acid, thallium(I+) salt
Nitrobenzene
p-Nitrophenol
2-Nitropropane
N–Nitrosodi-n-butylamine
N-Nitrosodiethanolamine
N-Nitrosodiethylamine
N-Nitroso-N-methylurethane
N-Nitroso-N-methylurethane
N-Nitroso-N-methylurethane
N-Nitroso-N-methylurethane
N-Nitrosodiethanolamine
N-Nitrosodiethylamine
N-Nitroso-N-ethylurea
N-Nitroso-N-methylurethane
N-Nitroso-N-methylurethane
N-Nitrosopiperidine
N-Nitrosopyrrolidine
5-Nitro-o-toluidine
1,2-Oxathiolane,2,2-dioxide
2H-1,3,2-Oxazaphosphorin-2-amine,N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide
Oxirane
Oxiranecarboxyaldehyde
Oxirane, (chloromethyl)-
Paraldehyde
Pentachlorobenzene
Pentachloroethane
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
1,3-Pentadiene
Phenacetin
Phenol
Phenol, 2-chloro-
Phenol, 4-chloro-3-methyl-
Phenol,2,4-diciloro-
Phenol,2,6-dichloro-
Phenol,4,4’-(1,2-diethyl- 1,2-ethenediy1)bis-, (E)-U101 Phenol,2,4-dimethyl-
Phenol, methyl-
Phenol,2,2′-methylenebis[ 3,4,6-trichloro-
Phenol, 4-nitro-
Phenol, Pentachloro-
Phenol, 2,3,4,5-tetracloro-
Phenol, 2,4,5-trichloro-
Phenol,2,4,6-trichloro-
L-Phenylalanine,4-[bis(2-chloroethyl)amino]-
Phosphoric acid, lead salt
Phosphorodithioic acid, O,O-diethyl-,S-methyl-, ester
Phosphorous sulfide
Phthalic anhydride
2-Picoline
Piperidine, 1-nitroso-
Propamide
U 194 1-Propanamine
U111 1-Propanamine, N-nitroso-N-N-propyl-
U101 1-Propanamine, N-propyl-
U066 Propane, 1,2-dibromo-3-chloro-
U149 Propanedinitrile
U171 Propane,2,2'-oxybis[2-chloro-
U193 1,3-Propane sulfone
U235 1-Propanol,2,3-dibromo-, phosphate(3:1)
U140 1-Propanol, 2-methyl-
U002 2-Propanone
U084 1-Propane, 1,3-dichloro-
U152 2-Propanenitrile,2-methyl-
U007 2-Propenamide
U243 1-Propene, hexachloro-
U009 2-Propenenitrile
U008 2-Propenoic acid
U113 2-Propenoic acid, ethyl ester
U118 2-Propenoic acid, 2-methyl-, ethyl ester
U162 2-Propenoic acid, 2-methyl-, methylester
U233 Propionic acid, 2-(2,4,5-trichlorophenoxy)-
U194 n-Propylamine
U083 Propylene dichloride
U148 3,6-Pyridazinedione, 1,2-dihydro-
U196 Pyridine
U191 Pyridine, 2-methyl-U237 2,4(1 H,3H)-Pyrimidinedine,5-[bis(2-chloroethyl)amino]
U164 4-(1 H)-Pyrimidinone, 2,3 dihydro-6-methyl-2-thioxo-
U180 Pyrrolidine, 1-nitroso-
U200 Reserpine
U201 Resorcinol
U202 Saccharin and salts
U203 Safrole
U204 Selenious acid
U204 Selenium dioxide
U205 Selenium sulfide
U015 L-Serine, diazoacetate (ester)
U233 Silvex
U206 Streptozotocin
U103 Sulfuric acid, dimethyl ester
U189 Sulfur phosphide
U232 2,4,5-T
U207 1,2,4,5-Tetrachlorobenzene
U208 1,1,1,2-Tetrachloroethane
U209 1,1,2,2-Tetrachloroethane
U210 Tetrachloroethylene
U212 2,3,4,6-Tetrachlorophenol
U213 Tetrahydrofuran
U214  Thallium(I) acetate
U215  Thallium(I) carbonate
U216  Thallium chloride
U217  Thallium(I) nitrate
U218  Thioacetamide
U153  Thiomethanol
U244  Thioperoxydicarbonic diamide, tetramethyl-
U219  Thiourea
U244  Thiuram
U220  Toluene
U221  Toluenediamine
U223  Toluene diisocyanate
U328  o-Toluidine
U353  p-Toluidine
U222  o-Toluidine hydrochloride
U011  1H-1,2,4-Triazol-3-amine
U226  1, 1, 1-Trichloroethane
U227  1, 1,2-Trichlorethane
U228  Trichloroethylene
U121  Trichloromonofluoromethane
U230  2,4,5-Trichlorophenol
U231  2,4,6-Trichlorophenol
U234  sym-Trinitrobenzene
U182  1,3,5-Trioxane, 2,4,6-trimethyl-
U235  Tris(2,3-dibromopropyl) phosphate
U236  Trypan blue
U237  Uracil mustard
U176  Urea, N-ethyl-N-nitroso-
U177  Urea, N-methyl-N-nitroso
U043  Vinyl chloride
U248  Warfarin, when present in concentrations of 0.3% or less
U239  Xylene
U200  Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester
U249  Zinc phosphide, when present at concentrations of 10% or less
Addendum for handling DEA Controlled Substances

**DEA Controlled Substances**

**Summary**

Items identified by the US Department of Justice, Drug Enforcement Administration (DEA) and the Texas Department of Public Safety (DPS) as controlled substances are subject to licensing, registration, storage, security, use and disposal requirements. See a list of DEA controlled substances.

Principal Investigators (PIs) using controlled substances in their laboratory research (including animal research) are subject to state and federal regulatory requirements.

**Licensing and Registration**

Since the University cannot, by law, maintain a campus wide registration for controlled substances, it is the responsibility of each PI to obtain appropriate licenses and registration, and to adhere to applicable state and federal regulatory requirements when working with controlled substances. PIs must register their controlled substance(s) with the federal DEA as well as the Texas DPS.

1. **State DPS Licensing:** Approved applicants will receive a one-year license to work with controlled substances in a manner consistent with the approved use(s) described in the application.
2. **Federal Registration:** Once you complete your state DPS Registration, you will need to complete a DEA Controlled Substance registration application. DEA registrations remain active for a 1-year period.
3. **Notification:** Copies of all registration and licensing related correspondence must be kept by the PI and additional copies sent to Department of Risk Management.

The PI shall complete a Controlled Substances Self Evaluation annually. The forms, indicating corrective actions taken, should be kept by the PI for at least one year and a copy should be submitted to Department of Risk Management.

**Storage and Security Controls**

Controlled substances possessed, kept, or otherwise stored in a manner or location not in compliance with state or federal law is subject to seizure by and forfeiture to federal or state officials. Failure to comply with applicable requirements may also result in a suspension of purchasing privileges and disciplinary actions.
In order to guard against theft or diversion, all controlled substances - regardless of schedule - must be kept under lock and key, and accessible only to authorized personnel. The number of authorized staff must be kept to the minimum essential for operation, and the stocks of controlled substances to the smallest quantity needed.

All controlled substances must be kept locked in their storage location except for the actual time required for authorized staff to remove, legitimately work with, and replace them.

Controlled substances must be stored in a substantially constructed cabinet. This cabinet must be kept locked at all times. The room in which the cabinet is located must have limited access during working hours and provide security after hours.

**Disposal**

Controlled substances may only be disposed by returning to a reputable Pharmaceutical return company. Expired material or unused product must be accumulated and stored under lock and key until ready for disposal. Controlled substances injected into research animals, consumed in a reaction, or irrecoverably coningled (if part of the research protocol) go into a hazardous waste stream for disposal through the University's routine waste disposal program.

**Reporting of Loss, Destruction, Theft, or Unauthorized Use**

Thefts, suspected thefts, unauthorized uses, or other losses of any controlled substance must be reported to the Lamar University Police Department (LUPD) and EHS upon discovery. Registrants must also document the incident to the Texas DPS and federal DEA. See [DEA Theft or Loss of Controlled Substances](#).

**Recordkeeping**

PIs are required by law to maintain complete and accurate inventory records for all controlled substances. These records must be kept separately from all other records and documents, in or near the primary work area, and be available for inspection during regular work hours. **The use of codes, symbols, or foreign languages in identifying a controlled substance or person in the record is prohibited.** In the event that any controlled substances are lost, destroyed, or stolen, the kind and quantity of the material and the date of discovery of such loss must be recorded in detail. All records must be maintained by PIs for a period of at least two years from the date of the last recorded transaction.

The recordkeeping system should include the following information:

1. **Receipt of Controlled Substance:** A separate and current record on the receipt of controlled substances, indicating date received, name and address of supplier, and the type, strength or concentration, and amount of the controlled substances received. Each record must be signed by the person receiving the controlled substance.
2. **Use of Controlled Substances:** A separate and current record for the storage and use of each controlled substance, indicating the date, laboratory building and room, specific research experiment, controlled substance’s application in the research, and type, strength and quantity of each controlled substance use or disposal. By noting starting volume or mass of substance in the container, each use or disposal is a subtraction from the starting quantity, and the running (decreasing) amount should equal the total amount remaining on-hand. Each record of use must be signed by the person working with the controlled substance.

3. **Inventory of Controlled Substances:** A complete and accurate inventory of the stock of controlled substances within each registrant’s laboratory must be performed initially. The type, strength, and quantity of all controlled substances must be recorded at this time. The person conducting the inventory must also date and sign the record. After the initial inventory is taken, a new inventory of all stocks of controlled substances on hand should be conducted at least every two years. PIs should be sure that the inventory can be reconciled to the records of receipt, use and disposal at all times.

Note: the guidance information above is not intended to cover all applicable parts of the DEA and DPS rules. For further information on the requirements for controlled substances review the DEA and DPS websites.