Hazardous Waste Management and Minimization Program

Under the

Resource Conservation and Recovery Act of 1976

NRCA developed this guide to help roofing contractors comply with environmental regulations applicable to hazardous waste. To keep this guide from getting too large, only common legal requirements for properly managing hazardous waste are discussed. Other regulatory agencies may require additional actions not addressed in this guide.

This document was undertaken in connection with the settlement of an enforcement action taken by the U.S. Environmental Protection Agency for a violation of the Resource Conservation and Recovery Act.

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Introduction

Workers using adhesive

Roofing work involves the installation of a wide variety of materials on buildings of all shapes, sizes and uses. Whether a roof technician is installing a built-up-roof system with hot asphalt or coal tar pitch, an asphalt shingle roof system, a single-ply roof system or one of the numerous other roof systems in use today, some type of roofing waste is generated at the job site. When waste meets the definition of "hazardous waste," regulations of the U.S. Environmental Protection Agency (EPA) apply to determine how the waste is stored, disposed of and tracked. Hazardous waste can pollute groundwater, lakes, streams, soil and air resources if not handled, stored and disposed of properly. Caulks, solvents, adhesives, coatings and mastics are just some of the roofing products that potentially may be characterized hazardous wastes with various consequences to a roofing contractor.

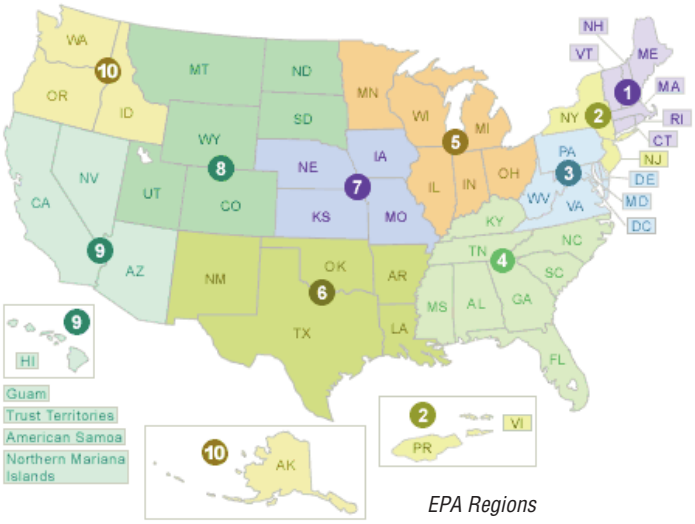
Containers of bonding adhesive

This guide's purpose is to inform roofing contractors of the federal rules related to hazardous wastes generated by roofing operations and provide a procedure for handling and managing the waste on a regular basis to avoid fines and help ensure a safer, cleaner environment. In most cases, compliance with the rules is fairly simple and will not necessitate significant changes to current work practices. However, as with most government regulations, violation of the rules comes with the prospect of fines and penalties that can be substantial—as much as $32,200 per day for each violation. A program to manage and minimize the hazardous wastes generated on roofing job sites therefore is a critical component of any roofing contractor's business organization.

What is EPA?

The U.S. EPA develops and enforces the regulations that carry out the environmental legislation enacted by the Congress and signed by the president. The federal offices of EPA are organized into 10 geographic regions across the country that report to the EPA administrator in Washington, D.C.

Some provisions of environmental regulations are delegated to the individual states and are implemented and enforced by state environmental protection agencies. Additionally, state agencies may enforce the federal environmental standards or even stricter environmental rules enacted by their state legislatures. For compliance purposes, it is possible that your job site or warehouse could be visited by an agent of the U.S. EPA regional office with jurisdiction in your state or by an agent of the state environmental agency in which the job or warehouse is located. A listing of all federal EPA regional offices along with state environmental agencies is provided in the appendix to this guide. Consult your state agency to become familiar with the provisions of the state environmental laws that apply to you.



EPA Regions

What is RCRA?

Hazardous waste handling

The main law that governs the storage and disposal of hazardous wastes is the Resource Conservation and Recovery Act of 1976, commonly called RCRA. In RCRA, Congress outlined a broad waste management program and directed EPA to put it into effect through regulations the agency would develop. Just as the Department of Labor develops regulations that control workplace safety and health issues under the Occupational Safety and Health Act of 1970, EPA follows a rulemaking procedure for the hazardous waste regulations required by RCRA. Simply stated, the procedure alerts the public that EPA plans to issue or revise regulations to implement RCRA, seeks public comment at various stages of the development of the regulations and establishes an internal review of the rules at EPA. Once regulations are finalized, they are published in the Code of Federal Regulations, or CFR—the volumes that contain all the rules developed by federal agencies to implement laws passed by Congress and signed by the president. The regulations relating to environmental issues are contained in Title 40 of the CFR. You may be more familiar with Occupational Safety and Health Administration (OSHA) regulations that are in Title 29 of the CFR or Department of Transportation rules in Title 49. Each title of the CFR also has different "parts." RCRA regulations with which a roofing contractor must comply are in Parts 239-299 of Title 40.

In addition to the regulations, EPA also issues guidance documents that give instructions for complying with the regulations under RCRA. Although they do not have the force of regulations,

guidance documents often give EPA's interpretation of the requirements of RCRA or environmental regulations.

Hazardous Waste

In general, a hazardous waste is a waste with a chemical composition or other properties that make it capable of causing death, illness or other harm to humans when mismanaged or released into the environment. To better distinguish exactly the type of material with which Congress was concerned in this definition, Congress asked EPA to develop more specific criteria for defining hazardous waste. Currently, the determination of a hazardous waste is made either because the waste is described in a listing of specific wastes or the waste has identifying characteristics that make it hazardous.

After use, tools like this are often cleaned in solvent

Listed hazardous wastes—spent solvents. For roofing contractors, the significance of the lists is that use of a listed chemical on a project indicates clearly that the hazardous waste management process must be initiated. EPA has established four different lists of hazardous wastes—F, K, P and U (see Appendixes A, B, C and D). EPA's spent-solvent list, or F list, describes 31 specific solvents. Some, such as toluene, benzene, acetone, xylene, and methyl ethyl ketone (MEK), are commonly used in roofing operations. Hazardous wastes on the F list are those solvents actually used for cleaning or degreasing in a particular operation; that is, the contaminated or soiled quantity of the solvent waste that was used in the roof application process. For example, if a roofing worker uses acetone to clean brushes or tools, the used or spent acetone would be considered an F-list hazardous waste requiring hazardous waste management. However, if acetone is an ingredient in one of the adhesives used to install a roof system, it still may be a hazardous waste, but it would not be an F-list waste because it is an ingredient and not a pure solvent in that instance.

EPA waste codes F001 to F005 apply to the spent solvents on the F lists. Other hazardous wastes are described on the remainder of the F list, but none apply to the roofing industry. Similarly, the K list of hazardous wastes contains specific manufacturing process wastes that are not applicable to the roofing industry.

Listed hazardous wastes—unused chemicals. As opposed to spent solvents on the F list, the P and U lists apply to unused chemicals that are hazardous wastes. Although the U list contains chemicals such as acetone, benzene, xylene and MEK, they are considered hazardous wastes if they are discarded or intended to be discarded. EPA considers disposal as abandoning of the product. If unused portions of these chemicals are accumulated before being disposed of or burned, it is considered abandoning or discarding of the product. EPA sets three criteria for a P- or U-list waste:

Inadequate site storage of hazardous wastes

- The waste must contain a chemical from the P or U list (40CFR§261.33).
- The chemical must be the sole active ingredient in the chemical formulation, that is, almost 100 percent pure.
- The chemical in the waste must be unused.

Generally, P- and U-list hazardous wastes are pure or highly concentrated forms of known toxic chemicals. Managing of materials on the U list must be done so as not to characterize the material as discarded but as unused inventory. Acute hazardous wastes are all those listed on the "P" list and certain wastes on the "F" list. This will be discussed in more detail in following pages.

Characteristic hazardous wastes. With regard to chemicals that are on one of four EPA lists, F, K, P or U, a contractor knows with certainty that a hazardous waste management program must be in place when that chemical is discarded by simply finding the chemical on the list. Other wastes are not as clearly specified as those listed but still may pose a hazard that must be managed. For example, a generic description of flammable single-ply adhesive left over after a project has been completed will not be found on any of the four EPA lists. In light of instances such as that, EPA established four characteristics of hazardous wastes as a supplement to the hazardous waste listings in an effort to provide a more complete and inclusive means of identifying hazardous wastes. Those characteristics are:

- Ignitability
- Corrosivity
- Reactivity
- Toxicity

Ignitability. A hazardous waste is considered ignitable if it is :

- a liquid with a flash point of 140 F or less
- a nonliquid capable of causing fire through friction, absorption of moisture or spontaneous chemical change

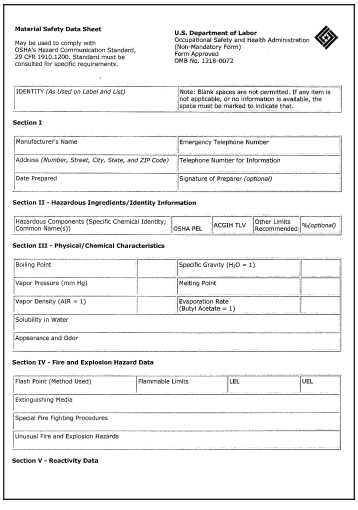
Common liquids used in roofing operations that have a flash point of 140 F or less include bonding adhesives, splice cleaners and roof cements, cutback products, some coatings and most solvents. As an example, most bonding adhesives have flash points in the range of 0 F to 10 F. As a comparison, one of the most common ignitable liquids is gasoline, which is extremely very volatile because it has a flash point of minus 45 F. Flash point is the temperature at which a liquid gives off a vapor sufficient to form an ignitable mixture with air near the surface of the liquid.

Corrosivity. A corrosive hazardous waste is a liquid that corrodes steel or has a low or high pH—the chemical scale that numerically indicates the acidic (low pH) or alkaline (high pH) nature of a material. Nonliquid wastes do not meet the criteria for corrosivity. Examples include rust removers, acids and cleaning fluids.

Reactivity. A hazardous waste exhibits the characteristic of reactivity if it reacts violently with water, forms explosive mixtures with water or releases dangerous vapors when exposed to water. Additionally, a reactive hazardous waste also can be one that is unstable or capable of detonation or explosive decomposition or contains cyanides or sulfides. Reactive hazardous wastes are relatively uncommon and it would be exceedingly rare to encounter them in roofing operations.

Toxicity. Some wastes contain specific contaminants—what EPA calls constituents—that can be harmful or fatal to people when disposed of in landfills and the toxic chemical leaches into the ground water and pollutes it. EPA lists the chemicals in a table (see Appendix E) that may be characterized as toxic if the concentration level for the contaminant is equal to or greater than the level listed in the table. Determining the toxicity level involves fairly sophisticated testing that results in a number that is compared to the regulatory level listed in the table for that constituent. A hazardous waste that exceeds one or more of those constituent levels exhibits the toxic characteristic for the constituent. Examples of some toxic constituents are benzene (D018), chromium (D007), lead (D008) and MEK (D035).

Material Safety Data Sheets (MSDSs) are the most effective source for determining the contents of products that roofing workers are handling on a daily basis. A roofing contractor is obligated under OSHA rules to maintain current MSDSs for each product to which workers may be exposed during work activities. For compliance with RCRA, MSDSs are equally valuable to determine whether the product is a listed or characteristic hazardous waste. MSDS information or other knowledge of the hazardous properties of the material may be used by a roofing contractor to make a determination of characteristic wastes. An MSDS will contain information about the product's physical and chemical properties, stability and reactivity, toxicological effects and fire hazards. MSDSs must be reviewed for the purpose of assessing your company's duties and responsibilities under RCRA. For more information about specific OSHA requirements for hazard communication, see 29 CFR §1910.1200.



Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY (As Used on Label and List)	Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name	Emergency Telephone Number
Address (Number, Street, City, State, and ZIP Code)	Telephone Number for Information
Date Prepared	Signature of Preparer (optional)

Section II - Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	%(optional)

Section III - Physical/Chemical Characteristics

Boiling Point		Specific Gravity (H_2O = 1)	
Vapor Pressure (mm Hg)		Melting Point	
Vapor Density (AIR = 1)		Evaporation Rate (Butyl Acetate = 1)	
Solubility in Water			
Appearance and Odor			

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
Extinguishing Media			
Special Fire Fighting Procedures			
Unusual Fire and Explosion Hazards			

Section V - Reactivity Data

OSHA sample MSDS format

Obtaining the MSDS for a product your company uses is fairly simple. You can request a copy from your supplier or the manufacturer; however, most manufacturers maintain current MSDSs for their entire product lines on their Web sites. Downloading directly from the manufacturer is often the easiest, most effective method of assuring the most reliable, current information. There also are several independent services that provide MSDSs to end users on a subscription or fee basis.

Mixtures. Hazardous waste rules also have been structured by EPA to account for the fact that hazardous wastes often may be mixed with other nonhazardous material or mixed in an attempt to avoid regulatory action. The rules generally provide that any amount of a listed hazardous waste combined with a nonhazardous waste still maintains the same waste code and regulatory status as the original listed component of the mixture. In other words, once a material is a listed hazardous waste it is always a listed waste regardless of any actual threat posed by the new waste mixture. Once a material becomes contaminated with a listed hazardous waste, it also is considered a listed hazardous waste regardless of the chemical composition.However, a characteristic hazardous waste can be made nonhazardous if it no longer exhibits the characteristic of ignitability, corrosivity, reactivity or toxicity that originally categorized it as hazardous. Similarly, a mixture of solely characteristic hazardous wastes is considered hazardous only if the mixture itself exhibits one or more of the four characteristic categories.

Spent solvent

Debris. Debris is solid waste that can become a regulated hazardous waste if contaminated with any listed hazardous waste or if it contains sufficient hazardous material to exhibit one or more of the four characteristic categories. Contaminated debris can pose significant disposal problems under EPA's land disposal restrictions. Debris can include demolished construction material such as wood or concrete or disposable personal protective equipment. It is important to manage construction debris so it does not become contaminated with listed or characteristic hazardous wastes and be categorized as hazardous waste. Such action would increase needlessly the quantities of hazardous waste to be disposed of by your company. Actions to minimize this possibility will be discussed more fully in this document.

Residues. Hazardous waste remaining in an empty container or inner liner removed from an empty container is not subject to RCRA regulation. A container or inner liner is considered empty if all wastes have been removed that can be removed by pouring or pumping and:

- no more than one inch of residue remains on the bottom
- waste is placed in containers or liners of 119 gallons or less, no more than 3 percent by weight of the total capacity remains
- waste is placed in containers or liners of greater than 119 gallons, no more than 0.3 percent by weight of the total capacity remains

Generator Categories. EPA defines a hazardous waste generator as any person whose act or process produces hazardous waste—either a listed or a characteristic waste—or whose act first causes a hazardous waste to become subject to regulation. A "person" under this definition includes an individual, corporation, partnership or firm. Generators of hazardous waste are organized and regulated based on three categories depending on the quantity of hazardous waste they generate in a month:

- CESQGs—Conditionally Exempt Small Quantity Generators
- SQGs—Small Quantity Generators
- LQGs—Large Quantity Generators

Category status of a generator may change from one month to the next depending on the amount of hazardous waste generated. If the amount of waste generated in a given calendar month places the generator in a different category, he or she is responsible for complying with all applicable requirements of that category for all waste generated during that calendar month. For example, if a generator produces 660 lbs of hazardous waste in March, that waste must be managed in accordance with SQG regulations; if the same generator produces 3,320 lbs of hazardous waste in April, that waste must be managed in accordance with LQG regulations. To minimize exposure to EPA fines and penalties and reduce the compliance burden, a roofing contractor should strive to achieve and maintain CESQG status.

CESQGs. This category is for generators that produce 220 pounds or less of hazardous waste in one calendar month. In addition, CESQGs are allowed to accumulate up to 2,205 pounds of hazardous waste in on-site storage. Unless a CESQG exceeds the 2,205-pound accumulation quantity, there is no time limit for the waste to be stored on site. If, at any time, a CESQG accumulates more than a total of 2,205 pounds of hazardous wastes, all of those accumulated wastes are subject to stricter regulation. A maximum 180-day time period for accumulation of wastes on site begins for a CESQG when the accumulated wastes exceed 2,205 pounds.

Hazardous waste container storage

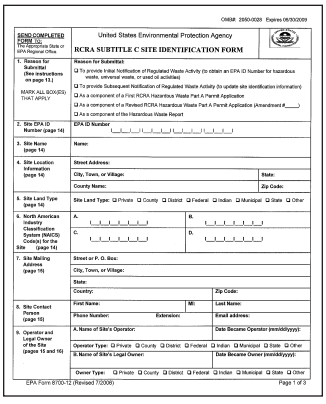
CESQGs are exempt from most other provisions of RCRA hazardous waste regulations if the accumulated waste weight limit is not exceeded. To avoid other regulatory requirements, a CESQG must dispose of its hazardous waste at a facility that is:

- Permitted or in interim status under EPA's Hazardous Waste Permit Program (40 CFR)
- Authorized to manage hazardous waste under an approved state program
- A permitted municipal solid -waste facility under 40 CFR§258
- A permitted non-municipal solid -waste facility under 40 CFR §257
- A legitimate waste reclamation or recycling facility

The main challenge for a roofing contractor in maintaining CESQG status will be managing the accumulated hazardous waste so that disposal is scheduled in a way that avoids the accumulation trigger weight that kicks in at amounts more than 2,205 pounds. In addition, a roofing contractor must take steps to determine the appropriateness of the disposal facility for CESQG hazardous waste to ensure compliance with RCRA. Some state rules may vary from this federal rule and be more restrictive. State rules must be reviewed to be certain how your management procedures must be structured.

Packaging, labeling, marking and placard requirements under DOT regulations must be followed for shipments of hazardous waste by a CESQG (see **DOT Issues** explanation).

SQGs. The small quantity generator category applies to entities that generate more than 220 pounds of hazardous waste in one month but less than 2,205 pounds in one month. The compliance procedures for this category generator are more extensive than those for CESQGs. The primary requirement under this category is to obtain an EPA identification number within 90 days of activity that subjects a generator to RCRA rules. The EPA ID number is applied for on EPA Form 8700-12 "Notification of Regulated Waste Activity" (see Appendix F for the complete form). The initial notification information supplied is entered into a national database and an EPA ID number is assigned to the facility—typically the roofing contractor's warehouse or shop location where hazardous waste is generated, disposed of and/or stored. An EPA ID number is site-specific and required of each company facility with equivalent operations. The ID number is critical because EPA regulations require that no SQG or LQG may treat, store, dispose of, transport or offer for transport any hazardous waste without it.



OMB#: 2050-0028 Expires 06/30/2009

SEND COMPLETED FORM TO: The Appropriate State or EPA Regional Office

United States Environmental Protection Agency

RCRA SUBTITLE C SITE IDENTIFICATION FORM

1. Reason for Submittal (See instructions on page 13.) MARK ALL BOX(ES) THAT APPLY

Reason for Submission:
- To provide Initial Notification of Regulated Waste Activity (to obtain an EPA ID Number for hazardous waste, universal waste, or used oil activities)
- To provide Subsequent Notification of Regulated Waste Activity (to update site identification information)
- As a component of a First RCRA Hazardous Waste Part A Permit Application
- As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment #_____)
- As a component of the Hazardous Waste Report

2. Site EPA ID Number (page 14) — EPA ID Number

3. Site Name (page 14) — Name:

4. Site Location Information (page 14) — Street Address; City, Town, or Village; State; County Name; Zip Code:

5. Site Land Type (page 14) — Site Land Type: Private, County, District, Federal, Indian, Municipal, State, Other

6. North American Industry Classification System (NAICS) Code(s) for the Site (page 14) — A. B. C. D.

7. Site Mailing Address (page 15) — Street or P. O. Box:; City, Town, or Village:; State:; Country:; Zip Code:

8. Site Contact Person (page 15) — First Name:; MI:; Last Name:; Phone Number:; Extension:; Email address:

9. Operator and Legal Owner of the Site (pages 15 and 16) — A. Name of Site's Operator:; Date Became Operator (mm/dd/yyyy):; Operator Type: Private, County, District, Federal, Indian, Municipal, State, Other; B. Name of Site's Legal Owner:; Date Became Owner (mm/dd/yyyy):; Owner Type: Private, County, District, Federal, Indian, Municipal, State, Other

EPA Form 8700-12 (Revised 7/2008) Page 1 of 5

EPA Form 8700-12

An SQG may not accumulate more than 13,228 pounds of hazardous waste on site for more than 180 days. If either the weight limit or time limit is exceeded, the SQG must comply with stricter requirements of hazardous waste treatment, storage and/or disposal facilities. However, an SQG can increase the accumulation time period to up to 270 days if the transport distance for waste treatment, storage or disposal is 200 miles or more from the SQG location. Thirty-day extensions also may be granted by the EPA regional office for unforeseen, temporary or uncontrollable circumstances.

Before to transportation of hazardous waste from an SQG for treatment, storage or disposal of the waste, the SQG must complete a manifest on EPA Form 8700-22 (see Appendix G or http://www.epa.gov/epaoswer/hazwaste/gener/manifest/registry/printers.htm#table). A manifest is a form designed to track hazardous waste from the generator to the treatment, storage or disposal facility. The SQG designates on the manifest the facility permitted to handle the waste. An alternative facility may be designated, as well, in case an emergency prevents delivery to the initial facility. An SQG is not required to complete a manifest if it transports its hazardous waste to a treatment, storage or disposal facility under a contract with a waste reclamation company that picks up the waste in its own trucks on a regular basis specified in a reclamation agreement, sometimes called a tolling agreement.

An SQG must apply for a permit to operate as a treatment, storage or disposal facility if accumulated waste exceeds 13,228 pounds or if waste is accumulated on site for more than 180 days (270 days if the 200-mile-or-more transport distance applies). Management procedures must be implemented so as to avoid either the weight or time limits to minimize administrative duties, costs and EPA penalties. An "emergency coordinator"—an employee on site or on call—must be designated by the SQG as the person responsible for coordinating all emergency response measures related to fires, spills or other releases of the hazardous waste.

Additionally, all employees of a SQG must be trained on proper waste handling and emergency procedures in relation to their individual responsibilities during regular operations and under emergency situations. The name and telephone number of the emergency coordinator, locations of fire extinguishers and spill control material, and local fire department emergency numbers must be posted near a telephone accessible during an emergency.

Workers donning personnel protective equipment for spill response

Packaging, labeling, marking and placard requirements under DOT regulations must be followed for shipments of hazardous waste by an SQG.

LQGs. The large quantity generator category applies to a generator of 2,205 pounds or more of hazardous waste in one calendar month. An LQG can accumulate hazardous waste on site for up to 90 days. There can be a 30-day extension of the 90-day accumulation limit granted by the EPA regional administrator. Once the 90-day limit is exceeded (if no extension is granted), an LQG is considered to be a treatment, storage or disposal facility and is subject to more extensive regulation.

Waste must be accumulated by following specific requirements for containment equipment—drums, tanks, drip pads and containment buildings. LQGs must have a written hazardous waste program that describes the procedures to follow to stay within the 90-day accumulation limit. Records must be kept to verify that waste is transferred to a treatment, storage or disposal facility by the 90-day mark. Containers must display for inspection the date that accumulation began along with the words "Hazardous Waste."

An LQG also is responsible for completing and filing a biennial report with the regional EPA office by March 1 of even-numbered years using Form 8700-13A (see Appendix H).

LQGs must have an emergency coordinator and a formal, written emergency procedure for spills and/or releases. LQG personnel must be trained in proper handling of hazardous waste through an established training program.

Packaging, labeling, marking and placard requirements under DOT regulations must be followed for shipments of hazardous waste by an LQG.

Satellite Accumulation: As a general rule, LQGs may accumulate hazardous waste on-site for up to 90 days, while SQGs have up to 180 days to accumulate hazardous waste. These generator accumulation areas are sometimes referred to as "90-day" or "180-day" areas, or "central accumulation" areas.

A generator may also accumulate as much as 55 gallons of hazardous waste or one quart of acutely hazardous waste in containers at or near any point of generation where wastes initially accumulate. This "satellite" accumulation point (SAP) must be under the control of the operator of the process generating the waste. The operator of this SAP must monitor the condition of the container. If a container is damaged, the owner or operator must transfer the hazardous waste from a damaged container to a container that is in good condition. The SAP container must be lined so it will not react with the hazardous waste stored inside. Hazardous waste containers stored at SAPs must always be closed during storage, except when it is necessary to add or remove waste. Owners or operators must mark SAP containers either with the words "Hazardous Waste" or with other words that identify the contents of the containers.

Once a SAP container reaches the maximum amount allowed to accumulate, the container should be transferred to the 90 or 180 day areas and appropriately labeled with an accumulation start date and contents. If the SAP container is not transferred and excess of the maximum amount is allowed to accumulate, other requirements apply to the excess amount. A generator who accumulates excess hazardous waste near any SAP must remove the excess of 55 gallons (or 1 quart of acute hazardous waste) within three days or comply with the appropriate central accumulation area regulations. The generator must label the container holding the excess accumulation of hazardous waste with the date the excess amount began accumulating.

Sample labeling for hazardous waste

Fees. A roofing contractor who is a hazardous waste generator may be charged an annual fee by the state agency that enforces the RCRA in the state in which the warehouse or shop is located. Fees range from $0-100 for a CESQG to $1,000 or more for LQGs (see Appendix I for a full description). A contractor must be vigilant in avoiding practices that might qualify his operation as a treatment, storage or disposal facility because permit fees for such facilities are well into the thousands of dollars.

Penalties. As mentioned previously, failing to comply with provisions of RCRA can result in civil penalties that can be as high as $32,200 per day for each violation. Statutory provisions of RCRA allow EPA or state agencies to take civil judicial actions against facilities with violations. These are formal law suits filed against the person or company that has not complied with the statutory or regulatory requirements of RCRA, has caused a release of hazardous wastes or hazardous constituents or has not complied with an administrative order. Civil actions are most often used in cases of repeated violations, those of significant nature or when serious environmental damage is involved.

In addition to administrative and civil enforcement actions, RCRA provides authority to use criminal actions against people responsible for serious violations involving willful acts. Those criminal actions come with the possibility of time in jail for convicted offenders.

Management and Minimization Procedures—Job Site

The most effective method of reducing disposal costs, quantity and toxicity of waste, and the associated safety and administrative problems is to never generate the waste. Some suggestions for preventing or reducing waste are listed below:

- Centralize the purchase of hazardous materials within the company by processing all orders through one person or one office.
- Order only what is needed currently, not what you might need for future projects or stages.
- Maintain an up-to-date inventory and check for in-house availability before ordering new materials.

Shop storage

- Use materials on a first-in, first-out basis to prevent degradation in storage.
- Substitute less hazardous materials in processes such as acrylic bonding adhesives or coatings.
- Reuse materials by making the product of one process the raw material for a later process.
- Train personnel in waste reduction techniques.
- Centralize waste collection within each building.
- Keep materials stored properly to protect the product for possible reuse or resale.
- Use all requisitioned hazardous materials for the project, on the project. Avoid returning materials back to the shop. Discuss the return policy with the vendor for returns of any unused material.

Storage:

- Specify job-site delivery and storage location for materials shipped to the construction site.
- Storage areas should be away from vehicular traffic.
  - Storage areas should be away from storm sewers and protected by berms to prevent discharge to drainage ditches and other storm - water discharge systems.
  - Secure storage areas with fencing, locked sheds, or trailers to prevent unwarranted or unauthorized access.

Job-site storage

  - Storage areas should be away from storage of other job-site materials that may be incompatible.
  - Storage areas should allow for ample access to respond to leaking containers or spills.
- Inventory any hazardous materials dropped off at the construction site by a material supplier.
  - Validate the quantity delivered against the quantity ordered.
  - Verify the material type to order specifications.
  - Maintain MSDSs on site.

- Inventory material at the start and end of each day.

- Inspect the containers holding the hazardous materials.
  - All containers should be sealed.
  - Containers must be appropriate for their contents (e.g., flammable liquid materials should be stored in metal containers).
  - Containers must be in good condition and show no signs of leaks, bulges, punctures, or damage that would prevent proper replacement of the lid or cap.

Damaged container of cleaner

- For the duration of the project, materials must be stored in their original containers with the original product labels maintained on the container in legible condition. Replace damaged or otherwise illegible labels immediately.
- Store all materials on pallets and preferably under cover with liquid material having temporary secondary containment capable of holding the material for 72 hours.
- Train employees in spill response and maintain spill cleanup materials near storage area.

Use:

- Always follow label directions regarding use of hazardous materials.
- Wear recommended personal protective equipment (PPE) (see label or MSDS).
- Paint brushes and equipment for water- and oil-based paints should be cleaned within a contained area and should not be allowed to contaminate site soils, watercourses, or drainage systems. Waste paints, thinners, solvents, residues, and sludges that cannot be recycled or reused should be disposed of as hazardous waste. When using latex paint products, thoroughly dry paint cans, used brushes, rags, absorbent materials, and drop cloths should be disposed of as solid waste (i.e., placed in the dumpster at the job site).


Workers moving hazardous waste to a secure location

- Do not clean out brushes or rinse paint containers into the dirt, street, gutter, storm drain, or stream. "Paint out" brushes as much as possible. Rinse water-based paints to the sanitary sewer. Filter and reuse thinners and solvents. Dispose of excess oil-based paints and sludge as hazardous waste.

Project Completion:

- Dispose of containers only after the entire product has been used or transferred out of the container—the container meets the definition of "empty." Empty containers are not considered hazardous waste and can be disposed of as regular construction debris at the job site. For partial containers of unused product, consolidate similar materials in original containers with proper labels in place and return them to the shop with unopened product inventory.
  - Be careful to avoid spills and have measures in place to prevent spilled material from contacting soil or water.
- Never clean hazardous materials from brushes, equipment, or containers in an area where any runoff could contaminate the ground or enter storm sewers or other vital areas.
- For cleaning of brushes, tools, and/or equipment containing residues of oil- or solvent-based materials at the end of a task or end of the day, clean with appropriate thinners and capture spent solvent for reuse.
  - Use appropriate PPE when handling oil- and solvent-based products.
  - Label any spent solvent container for its contents and store for reuse.
  - Aerosol cans that have been used may be treated as nonhazardous waste if the contents have been reduced to normal atmospheric pressure. Otherwise, they should be returned to the shop for reuse or disposal as appropriate.

Management and Minimization Procedures—Shop

The keys to successful management of hazardous materials at the shop include:

- Name one person who is responsible for hazardous materials management.
- Develop and implement a material inventory management system.
- Designate products in returnable or reusable containers.
- Implement and enforce good housekeeping practices.


A well-organized, secure job site

- Maintain proper labeling and container integrity.
- Minimize quantity and duration of materials stored.
- Train crew leaders or jobsite supervisors about the procedures to be followed for loading and unloading materials from trucks and trailers.


Spill control material close at hand

- Plan for spills and releases. [inert photo of spill containment kit
- Use excess inventory.

Once you determine a waste is hazardous, it is important to store the waste properly:

- Accumulate waste in containers that are clean, in good condition, chemically compatible with the waste, and appropriate for the quantity accumulated. Quantities greater than one gallon should be in unbreakable containers. Metal safety cans are required for flammables such as solvents or cleaning fluids.

Metal waste containers

- If a number of small quantities are accumulated in larger containers, do not combine different kinds of waste unless you know they are compatible and acceptable for disposal in the combined form.
- Store incompatible wastes away from each other; e.g., flammables must be stored away from oxidizers, water reactive wastes away from moisture sources, acidic wastes away from alkaline wastes, etc. Segregation of wastes enhances safe operation of your facility.
- Containers must be within a secure area where any leak will not cause harm to the environment. Drip and spill prevention and containment equipment should be in place.
- Containers must be closed at all times unless waste is being actively added to or removed from the containers.
- Check local building and fire codes for additional restrictions on storage of flammable and other hazardous wastes.
- Label the waste with the date accumulation started, identity of the contents, quantity of each constituent, and the words "HAZARDOUS WASTE."
- Schedule the proper removal of the waste by a licensed hazardous waste transportation, disposal or recycling firm.
- Inspect hazardous waste on a weekly basis and keep a log showing the date and time of each inspection, name of the inspector, observations, and any remedial action taken to correct problems.
- Install, maintain or keep on hand emergency equipment to be used in case of a spill.
- Post a “Chemical Spill Procedure” by the nearest telephone and in the shop or warehouse storage area. Be certain to designate an emergency coordinator who will respond to any emergency situation involving the waste. Provide the appropriate telephone numbers and other information on the Chemical Spill Procedure sheet.
- Keep complete records of all hazardous waste, including generation date, quantities and kinds of materials.
- Provide appropriate training for personnel who handle or might otherwise be in proximity to the hazardous waste.
- Examine the materials used in the shop by reviewing the MSDSs. Are there less toxic or hazardous products on the market that can perform the same function as your current hazardous products?
- Roof repair and installation equipment may use solvents to clean and repair the equipment. What kind of parts-cleaning system are you currently operating? Switch to a system that uses a cleaning solvent with a flash point above 140 F. Consider a continuous, recirculating-sink system—it helps extend solvent life. Keep the lid closed when not in use. This prevents the loss of solvent product to the atmosphere. Go the extra step and look into a water-based cleaning system. This cleaning system not only reduces the amount of hazardous waste your shop creates and disposal may be allowed in your building’s sewer system. Check with your local wastewater/sewer department before pouring anything down the drain to see whether this is acceptable.

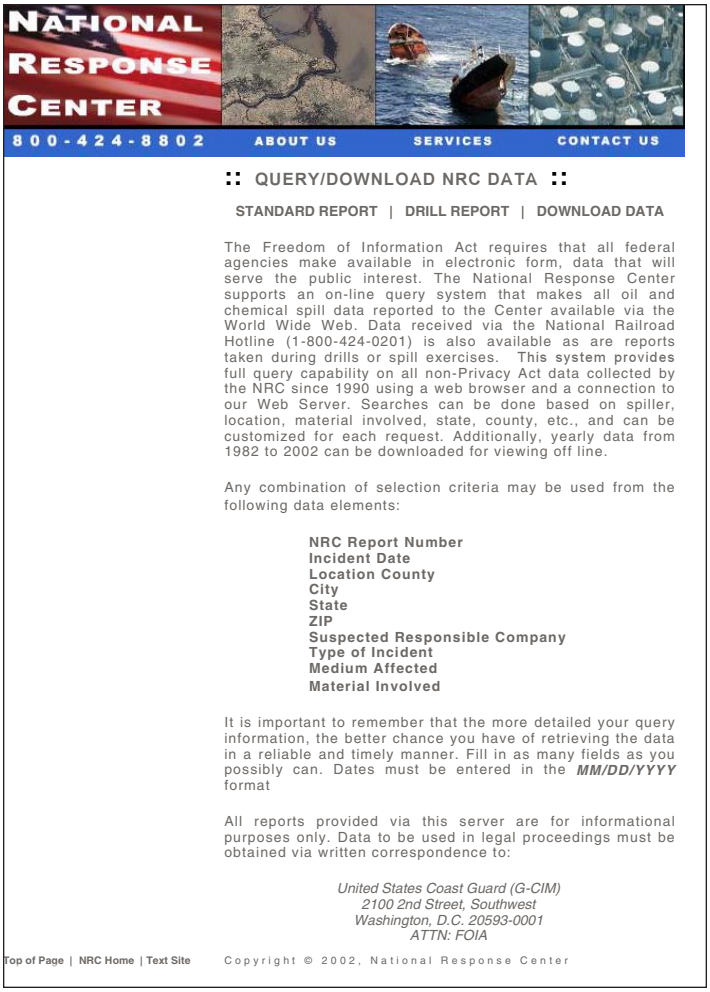
Spill Response. A spill can be described as any pollutant, hazardous waste or contaminate that has been spilled, leaked, pumped, poured, emitted, emptied, discharged, injected, escaped, leached, dumped or disposed into the environment.

Spill-control procedures should be implemented any time solid or liquid materials that may contain hazardous chemicals are stored. To the extent that the work can be accomplished safely and in compliance with all OSHA regulations, spills of roofing products should be contained and cleaned up immediately by qualified personnel at the construction site. For larger spills or spills involving toxic or highly flammable materials, it may be prudent to call the local fire department or private emergency response company. Spilled hazardous materials that are no longer usable on the project site should be returned to the shop for evaluation for potential use elsewhere. If the materials are eventually determined to be unusable, they become waste at the time the determination is made and should be handled according to the hazardous waste management procedures presented in this manual. The practice commonly followed for a small (i.e., nonreportable) spill is:

1. Contain the spread of the spill.
2. Recover spilled materials.
3. Clean the effected area and/or properly dispose of effected materials.

The following list of tips regarding spills are meant to help roofing contractors meet obligations under local, state and federal regulations.

- Spills may be required to be reported to appropriate local, state, or federal authorities. (State spill-reporting hotline telephone numbers are listed in Appendix K.) Spill reporting requirements for materials commonly used on the job site



National Response Center Web site

should be made available to the job-site supervisor.

- The reportable quantity for petroleum products such as oil, diesel, gasoline and hydraulic fluid, is 25 gallons or 3 cubic yards of impacted material or the presence on or in groundwater.
- To the extent that it does not compromise clean up activities, spills should be covered and protected from rainfall and storm water flow.
- Spills should not be buried or washed with water, unless as part of emergency response activities. Use absorbent materials on small spills rather than hosing down or burying the spill.
- Hazardous materials cleaned up from a spill and recovered product that no longer is suitable for the intended purpose shall be stored and disposed as hazardous waste.
- Nonreportable spills may be controlled by trained workers with responsibility as first responders to the spill.
- For larger spills, properly trained personnel should first contain the spread of the spill and secondly clean up the spill immediately.
  - If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (e.g., absorbent materials, rags). Contain the spill by encircling it with absorbent materials; do not let the spill spread widely.
  - If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike.
  - If the spill occurs during rain, cover the spill with tarps or other material to prevent affecting runoff.
  - Notify supervisory personnel e.g., building owner, construction manager, general contractor and others affected by a spill.
- For larger hazardous material reportable spills that cannot be controlled by appropriately trained personnel in the immediate vicinity, the following steps must be taken:
  - Notify the local emergency response department by dialing 911. In addition to 911, the contractor should notify the company environmental, safety and/or health manager who will notify the state environmental regulatory agency.
  - It is the contractor's responsibility to have all emergency telephone numbers at the construction site.
  - The services of a spills contractor or hazardous materials team must be obtained immediately. Construction personnel must not attempt to clean up the spill.
  - Notification must first be made by telephone and followed up with a written report.
  - Other agencies may need to be consulted including, for example, the fire department, public works department, highway patrol, city/county police department and health department.

Practical Hazardous Waste Management Examples

The following practical examples will illustrate some recommendations for successfully managing common wastes at the job site or in the shop. Although the problems and circumstances discussed in this section are realistic, they may have different regulatory solutions in addition to those presented.

- **Single-ply Roof System Adhesive**

Single-ply roof systems use a variety of bonding adhesives. Excerpts from a typical bonding adhesive MSDS are shown below. The chemical hazards associated with this product include toluene and hexane. Hexane is not considered a listed hazardous waste. However, the liquid mixture that makes up the bonding adhesive has a flash point of 0 F regulated under the ignitability characteristic of RCRA. Pure toluene would normally be classified as an F or U-listed hazardous waste, depending on use. The toluene in the bonding adhesive would not be an F-listed waste because it is present in the adhesive

Material Safety Data Sheet
Bonding Adhesive

Section 1: Chemical Product and Company Information

Information Phone:
Emergency Phone:
CHEMTREC:

Product Item Number:
CAS Number: Mixture
General Use: Roofing Adhesive

NFPA Ratings
Health - 2
Flammability - 3
Reactivity - 0
PPE - see Section 8

Section 2: Composition, Information on Ingredients

Ingredient Name	CAS #	% Wt	Exposure Limits
Toluene	108-88-3	37	OSHA PEL 200 ppm – TWA OSHA PEL 300 ppm – Ceiling OSHA VPEL 100 ppm – TWA OSHA VPEL 150 ppm – STEL ACGIH TLV 50 ppm – TWA (skin) ACGIH TLV 150 ppm – STEL (skin)
Acetone	67-64-1	20 - 24	OSHA PEL 1,000 ppm – TWA OSHA VPEL 750 ppm – TWA OSHA VPEL 1,000 ppm – STEL ACGIH TLV 500 ppm – TWA ACGIH TLV 750 ppm – STEL
Aliphatic Hydrocarbon	64742-89-8	13 - 17	OSHA VPEL 300 ppm – TWA OSHA VPEL 400 ppm – STEL ACGIH TLV 300 ppm – TWA
Synthetic Rubber	Trade Secret	13 - 17	No exposure limits established
Phenolic Resin	Trade Secret	2 - 6	No exposure limits established
Aromatic Hydrocarbon Resin	Trade Secret	1 - 5	No exposure limits established
Hydrocarbon Resin	Trade Secret	1 - 3.1	No exposure limits established
Hexane	110-54-3	4 - 5	OSHA PEL 500 ppm – TWA OSHA VPEL 50 ppm – TWA ACGIH TLV 50 ppm – TWA

Section 5: Fire-Fighting Measures

Flash Point: less than 0°F (-18°C)
Flash Point Method: SETA
Explosive Limit (for component)
Lower: 1.0 %
Upper: 12.8 %
Autoignition Temperature: No Data
Hazardous Decomposition Products: May form carbon dioxide, carbon monoxide, phenols and various hydrocarbons.
Fire and Explosion Hazards: Material is highly volatile and readily gives off vapors which may travel along the ground or be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electric motors, static discharge or other ignition sources at locations distant from the material handling point. Never use welding or cutting torch on or near container (even empty) because product (even just residue) can ignite explosively.
Extinguishing Media: Regular foam, water fog, carbon dioxide, dry chemical

A typical bonding adhesive MSDS (excerpt)

as an ingredient and not a sole ingredient. However, the bonding adhesive is a "characteristic" hazardous waste because of its ignitability and must be managed accordingly.

- **Unused Adhesive**

If a roofing contractor is discarding unused roofing adhesive that contains xylene, he or she should manage the discarded adhesive as a characteristic hazardous waste because the adhesive is not solely xylene, nor is it spent xylene. The adhesive is unused product that is being discarded. Because discarded adhesive is not a listed hazardous waste, only the characteristic hazardous waste designation (ignitable) would apply to this product. If possible the unused product should be picked up by the vendor that supplied the product if the roofing contractor has a return policy in place with venders.

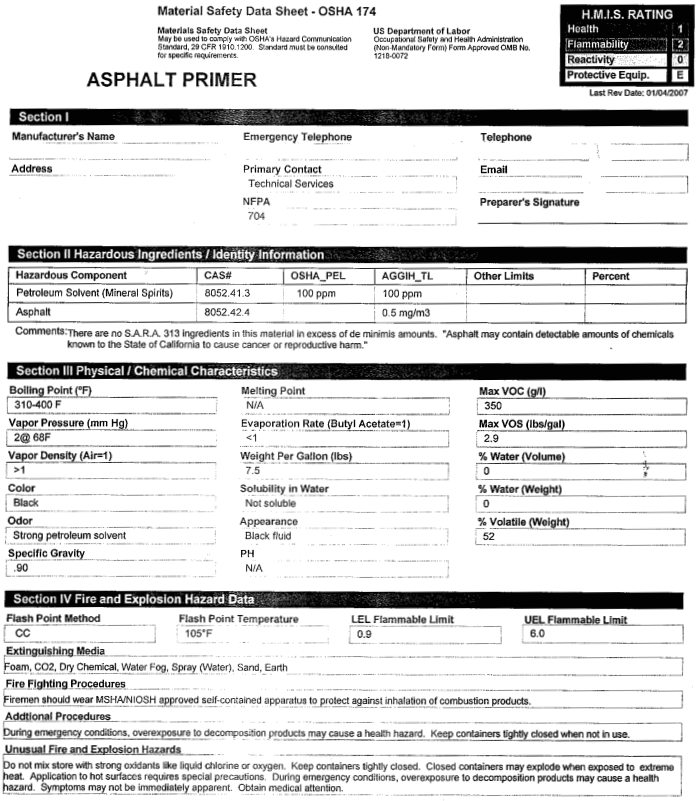
- **Spent Solvents**

Solvents are used on many jobs to clean hand tools and process equipment. Methylene chloride is sometimes used to remove asphalt from pieces of equipment. The asphalt is stripped off in clumps and is collected in a container with the methylene chloride. The clumps of asphalt are removed from the methylene chloride, and the methylene chloride is used again for more cleaning. Should the clumps of asphalt be considered a hazardous waste when disposed?

Yes. When methylene chloride is used as a solvent/stripper and becomes mixed with other materials, those materials become contaminated with methylene chloride, which is a listed hazardous waste, F002. When the clumps are removed from the methylene chloride so the methylene chloride can be reused, the clumps would be considered F002 because they would likely not be totally free of methylene chloride. Once the clumps are removed, the reusable methylene chloride is not regulated as F002 as it is a usable hazardous material, not a waste. This example applies to several other similar solvents (F005) used by roofing contractors including toluene, methyl ethyl ketone, carbon disulfide, isobutanol, and benzene. It is not uncommon to reuse solvents until they become dirty to the point that their effectiveness as a cleaner is fully diminished. This reuse minimizes the amount of solvent that would otherwise be disposed of as a hazardous waste. Reduce, reuse, and recycle are key components to a successful waste minimization program.

- **Built-up Roofing (BUR) and Polymer-modified Bitumen Roof Systems**

Roofing contractors use asphalt primers to prepare structures for a typical BUR or polymer-modified bitumen installation. A portion of a typical asphalt primer MSDS is shown below. The main chemical ingredient includes petroleum distillates, a nonlisted solid waste. However, the asphalt primer does exhibit a characteristic of hazardous waste (ignitability) and must be managed accordingly. Other asphalt primers that contain aliphatic hydrocarbons or certain types of aromatic hydrocarbons are managed similarly.



Material Safety Data Sheet - OSHA 174

Materials Safety Data Sheet
May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

US Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form) Form Approved OMB No. 1218-0072

ASPHALT PRIMER

H.M.I.S. RATING	
Health	1
Flammability	2
Reactivity	0
Protective Equip.	E

Last Rev Date: 01/04/2007

Section I

Manufacturer's Name	Emergency Telephone	Telephone
Address	**Primary Contact**	**Email**
	Technical Services	
	NFPA	**Preparer's Signature**
	704	

Section II Hazardous Ingredients / Identity Information

Hazardous Component	CAS#	OSHA_PEL	AGGIH_TL	Other Limits	Percent
Petroleum Solvent (Mineral Spirits)	8052.41.3	100 ppm	100 ppm		
Asphalt	8052.42.4		0.5 mg/m3		

Comments: There are no S.A.R.A. 313 ingredients in this material in excess of de minimis amounts. "Asphalt may contain detectable amounts of chemicals known to the State of California to cause cancer or reproductive harm."

Section III Physical / Chemical Characteristics

Boiling Point (°F)	**Melting Point**	**Max VOC (g/l)**
310-400 F	N/A	350
Vapor Pressure (mm Hg)	**Evaporation Rate (Butyl Acetate=1)**	**Max VOS (lbs/gal)**
2@ 68F	<1	2.9
Vapor Density (Air=1)	**Weight Per Gallon (lbs)**	**% Water (Volume)**
>1	7.5	0
Color	**Solubility in Water**	**% Water (Weight)**
Black	Not soluble	0
Odor	**Appearance**	**% Volatile (Weight)**
Strong petroleum solvent	Black fluid	52
Specific Gravity	**PH**	
.90	N/A	

Section IV Fire and Explosion Hazard Data

Flash Point Method	Flash Point Temperature	LEL Flammable Limit	UEL Flammable Limit
CC	105°F	0.9	6.0

Extinguishing Media
Foam, CO2, Dry Chemical, Water Fog, Spray (Water), Sand, Earth

Fire Fighting Procedures
Firemen should wear MSHA/NIOSH approved self-contained apparatus to protect against inhalation of combustion products.

Addtional Procedures
During emergency conditions, overexposure to decomposition products may cause a health hazard. Keep containers tightly closed when not in use.

Unusual Fire and Explosion Hazards
Do not mix store with strong oxidants like liquid chlorine or oxygen. Keep containers tightly closed. Closed containers may explode when exposed to extreme heat. Application to hot surfaces requires special precautions. During emergency conditions, overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

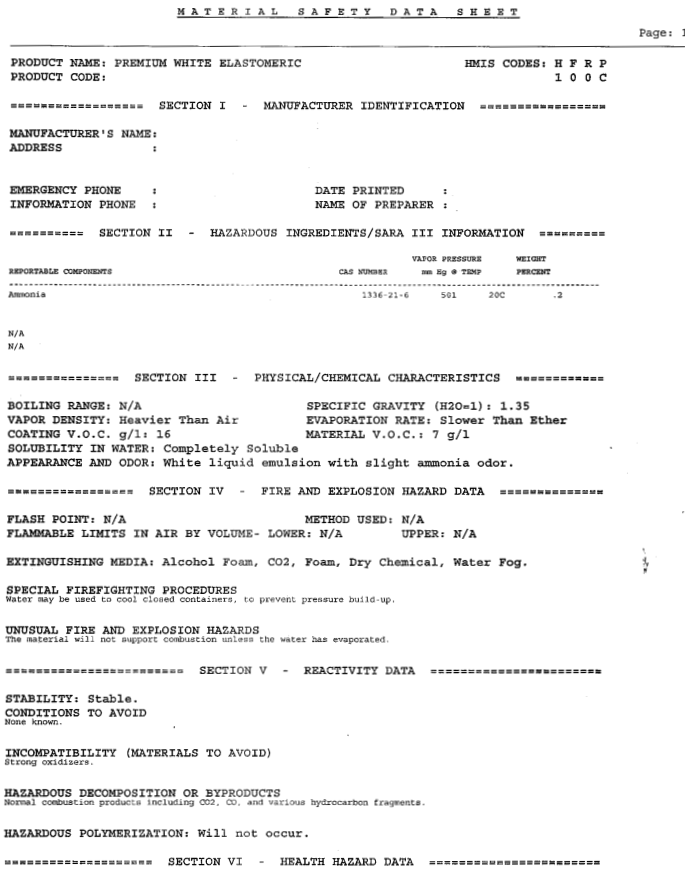
A typical asphalt primer MSDS (excerpt)

- **Discarded Asphalt Roofing Material**

Asphalt normally is managed as a solid waste (i.e., disposed of in a construction dumpster), unless the discarded asphalt is derived from or is in a mixture containing hazardous waste, or it exhibits any of the hazardous waste characteristics (i.e., ignitability, corrosivity, reactivity or toxicity). Traditional asphalt kegs discarded following "hot" roofing jobs do not meet the requirements of RCRA and are not hazardous waste. This type of solid waste should be managed using disposal techniques appropriate for your state or region.

- **Spray-applied Roof Systems**

- Spray-applied roof systems use several different types of elastomeric coating materials to encapsulate a roof. A portion of a typical elastomeric coating material MSDS is shown below. This material has no hazardous chemical ingredients and is not regulated as hazardous waste. Roofing contractors should manage the unused elastomeric coating material as a solid waste if they are unable to return the unused product to the vendor for a credit. Using "green" roofing materials (i.e., no hazardous chemical ingredients are present) such as this on jobs is a great way to practice hazardous waste minimization.



MATERIAL SAFETY DATA SHEET

Page: 1

PRODUCT NAME: PREMIUM WHITE ELASTOMERIC — HMIS CODES: H F R P
PRODUCT CODE: 1 0 0 C

========== SECTION I - MANUFACTURER IDENTIFICATION ==========

MANUFACTURER'S NAME:
ADDRESS :

EMERGENCY PHONE :
INFORMATION PHONE :
DATE PRINTED :
NAME OF PREPARER :

========== SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION ==========

REPORTABLE COMPONENTS	CAS NUMBER	VAPOR PRESSURE mm Hg @ TEMP		WEIGHT PERCENT
Ammonia	1336-21-6	501	20C	.2

N/A
N/A

========== SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS ==========

BOILING RANGE: N/A
SPECIFIC GRAVITY (H2O=1): 1.35
VAPOR DENSITY: Heavier Than Air
EVAPORATION RATE: Slower Than Ether
COATING V.O.C. g/l: 16
MATERIAL V.O.C.: 7 g/l
SOLUBILITY IN WATER: Completely Soluble
APPEARANCE AND ODOR: White liquid emulsion with slight ammonia odor.

========== SECTION IV - FIRE AND EXPLOSION HAZARD DATA ==========

FLASH POINT: N/A
METHOD USED: N/A
FLAMMABLE LIMITS IN AIR BY VOLUME- LOWER: N/A
UPPER: N/A

EXTINGUISHING MEDIA: Alcohol Foam, CO2, Foam, Dry Chemical, Water Fog.

SPECIAL FIREFIGHTING PROCEDURES
Water may be used to cool closed containers, to prevent pressure build-up.

UNUSUAL FIRE AND EXPLOSION HAZARDS
The material will not support combustion unless the water has evaporated.

========== SECTION V - REACTIVITY DATA ==========

STABILITY: Stable.
CONDITIONS TO AVOID
None known.

INCOMPATIBILITY (MATERIALS TO AVOID)
Strong oxidizers.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS
Normal combustion products including CO2, CO, and various hydrocarbon fragments.

HAZARDOUS POLYMERIZATION: Will not occur.

========== SECTION VI - HEALTH HAZARD DATA ==========

A typical elastomeric coating material MSDS (excerpt)

- **Empty Container**

Workers return a five-gallon container of asphalt primer used on a jobsite. About four inches of material remains in the container. Unfortunately, the vendor will not accept opened containers for return. What should happen to the container?

Aggregate the remaining asphalt primer into other containers of similar asphalt primer. Try to aggregate materials with similar manufacturers, shelf-life and usage history. Attempt to pour or pump out as much material as possible. Consolidating material reduces the total amount of potential hazardous waste generated from the shop and maximizes product reuse on the job site.

Once aggregated, verify the container is “empty.” The container is empty as long as less than one inch of material remains at the bottom. The container may be discarded in a municipal solid waste dumpster.

- **Discarded Solvent**

Some spray equipment is used for water-based materials and some is used for oil or solvent-based materials. This example applies to cleaning spray guns or equipment that uses oil or solvent-based materials. After cleaning or purging a piece of spray equipment and gun with solvent, workers return a 55-gallon drum of toluene solvent (70 percent pure) to the shop. About 10 inches of material exists in the container. The solvent will not be reused on future projects. No other containers of toluene exist at the shop. What should happen to the drum?

Aggregation is not possible because no other containers of similar solvent exist at the shop. The container is not “empty” since more than 1 inch of material remains at the bottom. The best solution is to dispose of the drum as hazardous waste. Consult the product MSDS for other specific disposal requirements. This drum of spent toluene must be managed and disposed as a hazardous waste.

- **Accidental Spills**

Some roofing operations use heavy equipment to load and unload pallets of raw materials from transport trucks and field vehicles. On rare occasions, material-handling accidents may occur. Forklift operators may puncture drums or spill product containers on the job site or in the warehouse. When a spill happens, how should a responsible roofing contractor respond?

RCRA regulations require immediate actions to minimize hazards to human health and the environment from any unplanned releases of hazardous waste or hazardous materials. A regulatory exemption from certain permitting standards for treatment and containment activities exists to facilitate timely cleanup. Accidental spills should be addressed immediately and in accordance with the facility's spill/contingency plan.

In spill response, the most important thing to remember is to be prepared. Plan and prepare for your spill response before it ever happens. Identify the personnel trained to respond to spills and know their technical capabilities and limits. Develop a Spill Response Binder for field workers and shop workers that list basic response actions for small spills, a telephone number for the local fire department or hazardous material team for large spills, and reportable quantities of typical chemicals used in your operation. Provide training to employees so they know who to contact on the job site when a spill happens and basic methods to control spills. With the appropriate training, try to contain the spill using expedient methods (berms, dikes, container over-packs, adsorbent materials, etc). Dispose of all cleanup materials (adsorbent pads, contaminated clothing, etc.) as hazardous waste if the spilled material is hazardous. If the soil mixed with the spilled product meets a characteristic of hazardous waste, then the soil is a RCRA hazardous waste. Other reporting may be required if the reportable quantity is exceeded as specified in the regulations pertaining to these Acts. Review and practice the spill plan annually with all personnel.

DOT Issues. Just as many of the products a roofing contractor uses on projects may have special transport considerations when being shipped to or from a project, hazardous waste that must be transported from a job site or from the shop to a treatment, storage or disposal facility requires compliance with DOT regulations. The first step for a shipper of hazardous waste is to determine a classification for the material. For example, flammable liquids are

considered a DOT Class 3 hazardous material. DOT classifications are broad descriptions of the basic nature of the material—explosives, poisonous materials, flammable and combustible liquids, etc. The next step is to determine a proper shipping name for the material from the Hazardous Materials Table. Once the proper shipping name is determined, the Hazardous Materials Table describes the type of packaging and markings appropriate for the material. Markings provide immediately visible information about the nature of the material that is being transported in the vehicle or freight container for first responders and handlers of the material.

Placards are similar to markings in that they identify the material in the vehicle. Generally, placards are required on the most dangerous of hazardous materials regardless of the quantity shipped. Placards also are required on some hazardous materials such as flammable or combustible liquids once the gross weight of the material reaches 1,001 pounds or more. Once a vehicle is placarded, numerous other DOT requirements also must be observed. Drivers of placarded vehicles must possess commercial driver's licenses with hazardous materials endorsements regardless of the size of the vehicle. A DOT hazardous materials security plan must be established by the shipper and hazardous materials registration with DOT must be completed. More information about shipments of hazardous materials can be found at the Federal Motor Carrier Safety Administration Web site, www.fmcsa.dot.gov.

Roofing Hazardous Waste Management—Job Site

Typically, hazardous wastes on a roofing project will include liquids such as bonding adhesives, roof cements, splice cleaners, solvents, cutback products and some coatings. Workers must be aware of and trained on the information contained in material safety data sheets (MSDSs) for all products used at a job site. Flammable, combustible and toxic liquids are the most common hazardous wastes and must be managed properly to avoid contaminating the environment and risking injury to workers and others. Here are some specific procedures to follow with regard to hazardous waste:

Planning

- Maintain current MSDSs for all materials used at a job site.
- Make sure all employees are trained in hazards related to the materials as detailed in the MSDSs.
- Carefully determine required quantities of hazardous materials and limit delivery to the minimum amount needed for the job.
- Secure all hazardous materials including hazardous waste awaiting transport in a safe, restricted-access area.

Operation

- Follow all label directions for use of material and be aware of remedies for over-exposure to a product.
- Wear proper personal protective equipment when handling hazardous materials.
- Empty containers of hazardous waste—those with 1 inch or less residue in the container—may be disposed of with regular construction debris.
- Do not open more containers than those necessary to complete the project.
- Label all storage containers and secondary containers from which workers use material from original, labeled containers so that there is no confusion as to the contents.
- Inspect all hazardous material and waste containers daily for damage, leaks and general security of containment.

Disposal or Transport

- Partial containers of similar hazardous waste should be consolidated for transport back to the shop for future use, disposal, storage and/or treatment.
- Aerosol cans, for example, marking-paint spray cans, may be disposed of as regular construction debris if they are no longer under pressure. Otherwise, return them to the shop for reuse or proper disposal.
- Solvents used for cleaning tools and equipment should be captured so as not to contaminate the soil or water and filtered onsite or at the shop for reuse. Contaminated solvents that cannot be reused must be returned to the shop for proper disposal or storage prior to disposal.
- Rags, brushes and other tools contaminated with hazardous material that cannot be cleaned should be left to dry and disposed of with regular construction debris or accumulated and returned to the shop for proper disposal.
- Make sure all necessary DOT shipping papers, markings, labels or placards are completed and attached prior to transport.

Roofing Hazardous Waste Management—Shop

It is the job of roofing shop personnel to manage hazardous wastes that are returned to the shop from the various company job sites. Examples of such waste returned from a roofing project include liquids such as bonding adhesives, roof cements, splice cleaners, solvents, cutback products and some coatings. The critical factor for shop personnel is to manage the storage and disposal of such materials so that accumulation quantities and time limits are not exceeded. Failure to do so can result in substantial fines. As with field workers, shop workers must be aware of and trained on the information contained in material safety data sheets (MSDSs) for all products stored at the shop location. Flammable, combustible and toxic liquids are the most common hazardous wastes used in roofing. Here are some specific procedures to follow with regard to hazardous waste at the shop:

Storage/Inventory

- Hazardous waste returned to the shop must be managed under an inventory management system that records the initial date of delivery for storage or disposal, quantity and type of waste.
- Hazardous materials should be inventoried and stocked as product suitable for future use and segregated from hazardous waste.
- Material that can be used on other projects should be delivered out of storage before new material is delivered.
- A labeling and identification system for containers of hazardous waste should be used.
- An alerting system must be in place to make personnel aware when quantity or time limits are reaching action levels so that disposal or treatment can be scheduled.
    - An action level should be established when hazardous waste nears 220 pounds in any calendar month or stored amounts approach 2,205 pounds.
    - A second action level should be established when hazardous waste generated in any month approaches 2,205 pounds or stored amounts approach 13,228 pounds.
- Accumulate hazardous waste in secure, appropriate containers with dissimilar materials segregated by container and storage location.
- Keep records of all hazardous waste delivered, treated, stored and disposed of at the shop and the dates and quantities for such material.
- Check local fire and building codes for additional limits on quantities and types of materials that may have storage restrictions placed on them by local ordinance.
- Train workers who handle hazardous materials and wastes in procedures for handling, storage, personal protective equipment and MSDSs of all materials.

Disposal

- Sources for licensed hazardous waste transport, disposal or treatment providers must be identified and used on a r egular basis.

Spills

- Establish a spill-detection, notification and cleanup plan that uses regular inspection procedures, containment techniques and cleanup procedures for the different varieties of hazardous waste that the company handles.
- Determine the local spill-response hotline emergency number and post it in a highly visible area.
- Provide appropriate spill-response procedures training for all employees who handle or may have contact with hazardous materials and/or waste during the normal course of their duties or as a result of a spill.

References

References that may be helpful in developing a hazardous waste management and minimization program are listed below.

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices. ACGIH. 2004.

Pocket Guide to Chemical Hazards. NIOSH. 2003.

Hazardous Waste Generator Regulations: A User-Friendly Reference Document, Aug. 3, 2006. http://www.epa.gov/epaoswer/osw/gen_trans/cesqg_resources.htm

Guide to Hazardous Waste Management. The University of Memphis, Environmental Health and Safety. Oct. 13, 2003.

Introduction to U. S. Environmental Protection Agency Hazardous Waste Identification (40 CFR Parts 261). USEPA Office of Solid Waste and Emergency Response, (Manual ID EPA530-K-05-012). September 2005.

The NRCA Roofing Manual: Membrane Roof Systems—2007

Florida Guide to Writing a Waste Minimization Plan. Florida Department of Environmental Protection. Feb. 8, 2006.

Model Hazardous Waste Management Plan. U S Army Environmental Center. March 6, 1996.

Kirtland Air Force Base Hazardous Waste Management Plan

Brooks City Base Hazardous Waste Management Plan

Pictures taken from:

http://web.mit.edu/ENVIRONMENT/ehs/topic/rcra_ref/ignitable.html

http://journeytoforever.org/biodiesel_make.html

http://photos.orr.noaa.gov//Photos/PCD1756/IMG0049.JPG

www.public-warehouse.com/

www.epa.gov

Personal collection of Brad Richardson, D.C. Taylor Company

Appendix A. Hazardous wastes from nonspecific sources (§261.31)

APPENDIX A Hazardous wastes from nonspecific sources (§261.31)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
Generic:		
F001	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	(T)
F002	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 F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(T)
F003	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	(I)*
F004	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	(T)
F005	The following spent non-halogenated solvents: Toluene, methyl	(I,T)

	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	
F006	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	(T)
F007	Spent cyanide plating bath solutions from electroplating operations	(R, T)
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process	(R, T)
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process	(R, T)
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process	(R, T)
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations	(R, T)
F012	Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process	(T)
F019	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	(T)
F020	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.)	(H)
F021	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	(H)
F022	Wastes (except wastewater and spent carbon from hydrogen	(H)

	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	
F023	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.)	(H)
F024	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)
F025	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)
F026	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)
F027	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 sythesized from prepurified 2,4,5-trichlorophenol as the sole component.)	(H)
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027	(T)
F032	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage,	(T)

	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	
F034	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)
F035	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)
F037	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 oil 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)
F038	Petroleum refinery secondary (emulsified) oil/water/solids	(T)

	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	
F039	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.)	(T)

APPENDIX B. Hazardous wastes from specific sources (§261.32)

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
Wood preservation: K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol	(T)
Inorganic pigments:		
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments	(T)
K003	Wastewater treatment sludge from the production of molybdate orange pigments	(T)
K004	Wastewater treatment sludge from the production of zinc yellow pigments	(T)
K005	Wastewater treatment sludge from the production of chrome green pigments	(T)
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated)	(T)
K007	Wastewater treatment sludge from the production of iron blue pigments	(T)
K008	Oven residue from the production of chrome oxide green pigments	(T)
Organic chemicals:		
K009	Distillation bottoms from the production of acetaldehyde from ethylene	(T)
K010	Distillation side cuts from the production of acetaldehyde from ethylene	(T)
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile	(R, T)
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile	(R, T)
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile	(T)
K015	Still bottoms from the distillation of benzyl chloride	(T)
K016	Heavy ends or distillation residues from the production of carbon tetrachloride	(T)
K017	Heavy ends (still bottoms) from the purification column in	(T)

	the production of epichlorohydrin	
K018	Heavy ends from the fractionation column in ethyl chloride production	(T)
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production	(T)
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production	(T)
K021	Aqueous spent antimony catalyst waste from fluoromethanes production	(T)
K022	Distillation bottom tars from the production of phenol/acetone from cumene	(T)
K023	Distillation light ends from the production of phthalic anhydride from naphthalene	(T)
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene	(T)
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene	(T)
K026	Stripping still tails from the production of methy ethyl pyridines	(T)
K027	Centrifuge and distillation residues from toluene diisocyanate production	(R, T)
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane	(T)
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane	(T)
K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene	(T)
K083	Distillation bottoms from aniline production	(T)
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes	(T)
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene	(T)
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene	(T)
K095	Distillation bottoms from the production of 1,1,1-trichloroethane	(T)
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane	(T)
K103	Process residues from aniline extraction from the production of aniline	(T)

K104	Combined wastewater streams generated from nitrobenzene/aniline production	(T)
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes	(T)
K107	Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazines	(C,T)
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(I,T)
K109	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(T)
K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	(T)
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene	(C,T)
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene	(T)
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene	(T)
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene	(T)
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene	(T)
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine	(T)
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene	(T)
K118	Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene	(T)
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene	(T)

K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups, (This waste does not include still bottoms from the distillation of benzyl chloride.)	(T)
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups	(T)
K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups	(T)
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)	(T)
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)	(T)
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)	(T)
K159	Organics from the treatment of thiocarbamate wastes	(T)
K161	Purification solids (including filtration, evaporation, and centrifugation solids), bag house dust and floor sweepings from the production of dithiocarbamate acids and their salts. (This listing does not include K125 or K126.)	(R,T)
K174	Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer (including sludges that result from commingled ethylene dichloride or vinyl chloride monomer wastewater and other wastewater), unless the sludges meet the following conditions: (i) they are disposed of in a subtitle C or non-hazardous landfill licensed or permitted by the state or federal government; (ii) they are not otherwise placed on the land prior to final	(T)

	disposal; and (iii) the generator maintains documentation demonstrating that the waste was either disposed of in an on-site landfill or consigned to a transporter or disposal facility that provided a written commitment to dispose of the waste in an off-site landfill. Respondents in any action brought to enforce the requirements of subtitle C must, upon a showing by the government that the respondent managed wastewater treatment sludges from the production of vinyl chloride monomer or ethylene dichloride, demonstrate that they meet the terms of the exclusion set forth above. In doing so, they must provide appropriate documentation (e.g., contracts between the generator and the landfill owner/operator, invoices documenting delivery of waste to landfill, etc.) that the terms of the exclusion were met	
K175	Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process	(T)
K181	Nonwastewaters from the production of dyes and/or pigments (including nonwastewaters commingled at the point of generation with nonwastewaters from other processes) that, at the point of generation, contain mass loadings of any of the constituents identified in paragraph (c) of this section that are equal to or greater than the corresponding paragraph (c) levels, as determined on a calendar year basis. These wastes will not be hazardous if the nonwastewaters are: (i) disposed in a Subtitle D landfill unit subject to the design criteria in §258.40, (ii) disposed in a Subtitle C landfill unit subject to either §264.301 or §265.301, (iii) disposed in other Subtitle D landfill units that meet the design criteria in §258.40, §264.301, or §265.301, or (iv) treated in a combustion unit that is permitted under Subtitle C, or an onsite combustion unit that is permitted under the Clean Air Act. For the purposes of this listing, dyes and/or pigments production is defined in paragraph (b)(1) of this section. Paragraph (d) of this section describes the process for demonstrating that a facility's nonwastewaters are not K181. This listing does not apply to wastes that are otherwise identified as hazardous under §§261.21–261.24 and 261.31–261.33 at the point of generation. Also, the listing does not apply to wastes generated before any annual mass loading limit is met	(T)
Inorganic chemicals:		

K071	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used	(T)
K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production	(T)
K106	Wastewater treatment sludge from the mercury cell process in chlorine production	(T)
K176	Baghouse filters from the production of antimony oxide, including filters from the production of intermediates (e.g., antimony metal or crude antimony oxide)	(E)
K177	Slag from the production of antimony oxide that is speculatively accumulated or disposed, including slag from the production of intermediates (e.g., antimony metal or crude antimony oxide)	(T)
K178	Residues from manufacturing and manufacturing-site storage of ferric chloride from acids formed during the production of titanium dioxide using the chloride-ilmenite process	(T)
Pesticides:		
K031	By-product salts generated in the production of MSMA and cacodylic acid	(T)
K032	Wastewater treatment sludge from the production of chlordane	(T)
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane	(T)
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane	(T)
K035	Wastewater treatment sludges generated in the production of creosote	(T)
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton	(T)
K037	Wastewater treatment sludges from the production of disulfoton	(T)
K038	Wastewater from the washing and stripping of phorate production	(T)
K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate	(T)
K040	Wastewater treatment sludge from the production of phorate	(T)
K041	Wastewater treatment sludge from the production of toxaphene	(T)

K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T	(T)
K043	2,6-Dichlorophenol waste from the production of 2,4-D	(T)
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane	(T)
K098	Untreated process wastewater from the production of toxaphene	(T)
K099	Untreated wastewater from the production of 2,4-D	(T)
K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salt	(T)
K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts	(C, T)
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts	(T)
K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts	(T)
K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide	(C, T)
K132	Spent absorbent and wastewater separator solids from the production of methyl bromide	(T)
Explosives:		
K044	Wastewater treatment sludges from the manufacturing and processing of explosives	(R)
K045	Spent carbon from the treatment of wastewater containing explosives	(R)
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds	(T)
K047	Pink/red water from TNT operations	(R)
Petroleum refining:		
K048	Dissolved air flotation (DAF) float from the petroleum refining industry	(T)
K049	Slop oil emulsion solids from the petroleum refining industry	(T)
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry	(T)
K051	API separator sludge from the petroleum refining industry	(T)
K052	Tank bottoms (leaded) from the petroleum refining industry	(T)
K169	Crude oil storage tank sediment from petroleum refining	(T)

	operations	
K170	Clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations	(T)
K171	Spent Hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media)	(I,T)
K172	Spent Hydrorefining catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media)	(I,T)
Iron and steel:		
K061	Emission control dust/sludge from the primary production of steel in electric furnaces	(T)
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332)	(C,T)
Primary copper:		
Primary lead:		
Primary zinc:		
Primary aluminum:		
K088	Spent potliners from primary aluminum reduction	(T)
Ferroalloys:		
Secondary lead:		
K069	Emission control dust/sludge from secondary lead smelting. (Note: This listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further administrative action is taken. If EPA takes further action effecting this stay, EPA will publish a notice of the action in the **Federal Register**)	(T)
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting	(T)
Veterinary pharmaceuticals:		
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds	(T)
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds	(T)
K102	Residue from the use of activated carbon for decolorization	(T)

	in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds	
Ink formulation:		
K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead	(T)
Coking:		
K060	Ammonia still lime sludge from coking operations	(T)
K087	Decanter tank tar sludge from coking operations	(T)
K141	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludges from coking operations)	(T)
K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal	(T)
K143	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal	(T)
K144	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal	(T)
K145	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal	(T)
K147	Tar storage tank residues from coal tar refining	(T)
K148	Residues from coal tar distillation, including but not limited to, still bottoms	(T)

Appendix C. Discarded commercial chemical products, off-specification species, container residues and spill residues thereof (§261.33[e]).

APPENDIX C. Discarded commercial chemical products, off-specification species, container residues and spill residues thereof (§261.33(e)).

Hazardous waste No.	Chemical abstracts No.	Substance
P023	107–20–0	Acetaldehyde, chloro-
P002	591–08–2	Acetamide, N-(aminothioxomethyl)-
P057	640–19–7	Acetamide, 2-fluoro-
P058	62–74–8	Acetic acid, fluoro-, sodium salt
P002	591–08–2	1-Acetyl-2-thiourea
P003	107–02–8	Acrolein
P070	116–06–3	Aldicarb
P203	1646–88–4	Aldicarb sulfone.
P004	309–00–2	Aldrin
P005	107–18–6	Allyl alcohol
P006	20859–73–8	Aluminum phosphide (R,T)
P007	2763–96–4	5-(Aminomethyl)-3-isoxazolol
P008	504–24–5	4-Aminopyridine
P009	131–74–8	Ammonium picrate (R)
P119	7803–55–6	Ammonium vanadate
P099	506–61–6	Argentate(1-), bis(cyano-C)-, potassium
P010	7778–39–4	Arsenic acid H_3 AsO_4
P012	1327–53–3	Arsenic oxide As_2 O_3
P011	1303–28–2	Arsenic oxide As_2 O_5
P011	1303–28–2	Arsenic pentoxide
P012	1327–53–3	Arsenic trioxide
P038	692–42–2	Arsine, diethyl-
P036	696–28–6	Arsonous dichloride, phenyl-
P054	151–56–4	Aziridine
P067	75–55–8	Aziridine, 2-methyl-
P013	542–62–1	Barium cyanide
P024	106–47–8	Benzenamine, 4-chloro-
P077	100–01–6	Benzenamine, 4-nitro-
P028	100–44–7	Benzene, (chloromethyl)-

	the production of epichlorohydrin	
K018	Heavy ends from the fractionation column in ethyl chloride production	(T)
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production	(T)
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production	(T)
K021	Aqueous spent antimony catalyst waste from fluoromethanes production	(T)
K022	Distillation bottom tars from the production of phenol/acetone from cumene	(T)
K023	Distillation light ends from the production of phthalic anhydride from naphthalene	(T)
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene	(T)
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene	(T)
K026	Stripping still tails from the production of methy ethyl pyridines	(T)
K027	Centrifuge and distillation residues from toluene diisocyanate production	(R, T)
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane	(T)
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane	(T)
K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene	(T)
K083	Distillation bottoms from aniline production	(T)
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes	(T)
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene	(T)
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene	(T)
K095	Distillation bottoms from the production of 1,1,1-trichloroethane	(T)
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane	(T)
K103	Process residues from aniline extraction from the production of aniline	(T)

P033	506–77–4	Cyanogen chloride
P033	506–77–4	Cyanogen chloride (CN)Cl
P034	131–89–5	2-Cyclohexyl-4,6-dinitrophenol
P016	542–88–1	Dichloromethyl ether
P036	696–28–6	Dichlorophenylarsine
P037	60–57–1	Dieldrin
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-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta, 7aalpha)-
P051	[1]72–20–8	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-, (1aalpha,2beta,2abeta,3alpha,6alpha,6abeta,7beta, 7aalpha)-, & metabolites
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	Diphosphoramide, octamethyl-
P111	107–49–3	Diphosphoric acid, tetraethyl ester
P039	298–04–4	Disulfoton
P049	541–53–7	Dithiobiuret
P185	26419–73–8	1,3-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-(dimethylamino)-N-[[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester.
P066	16752–77–5	Ethanimidothioic acid, N-[[(methylamino)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.
P065	628–86–4	Fulminic acid, mercury(2+) salt (R,T)
P059	76–44–8	Heptachlor
P062	757–58–4	Hexaethyl tetraphosphate
P116	79–19–6	Hydrazinecarbothioamide
P068	60–34–4	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-Isopropylphenyl N-methylcarbamate.
P007	2763–96–4	3(2H)-Isoxazolone, 5-(aminomethyl)-
P196	15339–36–3	Manganese, bis(dimethylcarbamodithioato-S,S')-,
P196	15339–36–3	Manganese dimethyldithiocarbamate.
P092	62–38–4	Mercury, (acetato-O)phenyl-
P065	628–86–4	Mercury fulminate (R,T)
P082	62–75–9	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-[[(methylamino)-carbonyl]oxy]phenyl]-, monohydrochloride.
P197	17702–57–7	Methanimidamide, N,N-dimethyl-N′-[2-methyl-4-[[(methylamino)carbonyl]oxy]phenyl]-
P050	115–29–7	6,9-Methano-2,4,3-benzodioxathiepin, 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
P068	60–34–4	Methyl hydrazine
P064	624–83–9	Methyl isocyanate
P069	75–86–5	2-Methyllactonitrile
P071	298–00–0	Methyl parathion
P190	1129–41–5	Metolcarb.
P128	315–8–4	Mexacarbate.
P072	86–88–4	alpha-Naphthylthiourea
P073	13463–39–3	Nickel carbonyl
P073	13463–39–3	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 oxide 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-
P047	[1]534–52–1	Phenol, 2-methyl-4,6-dinitro-, & salts
P020	88–85–7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
P009	131–74–8	Phenol, 2,4,6-trinitro-, 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-methylethyl)-, methyl carbamate.
P092	62–38–4	Phenylmercury acetate
P093	103–85–5	Phenylthiourea
P094	298–02–2	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)ethyl] 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)-2-oxoethyl] ester
P043	55–91–4	Phosphorofluoridic acid, bis(1-methylethyl) ester
P089	56–38–2	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester
P040	297–97–2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
P097	52–85–7	Phosphorothioic acid, O-[4-[(dimethylamino)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
P201	2631–37–0	Promecarb
P070	116–06–3	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime
P203	1646–88–4	Propanal, 2-methyl-2-(methyl-sulfonyl)-, O-[(methylamino)carbonyl] oxime.
P101	107–12–0	Propanenitrile
P027	542–76–7	Propanenitrile, 3-chloro-
P069	75–86–5	Propanenitrile, 2-hydroxy-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-pyrrolidinyl)-, (S)-, & salts
P204	57–47–6	Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, methylcarbamate (ester), (3aS-cis)-.
P114	12039–52–0	Selenious 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-10-one, & 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)
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	7446–18–6	Thallium(I) sulfate
P109	3689–24–5	Thiodiphosphoric acid, tetraethyl ester
P045	39196–18–4	Thiofanox
P049	541–53–7	Thioimidodicarbonic 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	86–88–4	Thiourea, 1-naphthalenyl-
P093	103–85–5	Thiourea, phenyl-
P185	26419–73–8	Tirpate.
P123	8001–35–2	Toxaphene
P118	75–70–7	Trichloromethanethiol
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	4549–40–0	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(dimethylcarbamodithioato-S,S')-,
P121	557–21–1	Zinc cyanide
P121	557–21–1	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.
P001	[1]81–81–2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, & salts, when present at concentrations greater than 0.3%
P001	[1]81–81–2	Warfarin, & salts, when present at concentrations greater than 0.3%

P002	591–08–2	Acetamide, -(aminothioxomethyl)-
P002	591–08–2	1-Acetyl-2-thiourea
P003	107–02–8	Acrolein
P003	107–02–8	2-Propenal
P004	309–00–2	Aldrin
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)-
P005	107–18–6	Allyl alcohol
P005	107–18–6	2-Propen-1-ol
P006	20859–73–8	Aluminum phosphide (R,T)
P007	2763–96–4	5-(Aminomethyl)-3-isoxazolol
P007	2763–96–4	3(2H)-Isoxazolone, 5-(aminomethyl)-
P008	504–24–5	4-Aminopyridine
P008	504–24–5	4-Pyridinamine
P009	131–74–8	Ammonium picrate (R)
P009	131–74–8	Phenol, 2,4,6-trinitro-, ammonium salt (R)
P010	7778–39–4	Arsenic acid H_3 AsO_4
P011	1303–28–2	Arsenic oxide As_2 O_5
P011	1303–28–2	Arsenic pentoxide
P012	1327–53–3	Arsenic oxide As_2 O_3
P012	1327–53–3	Arsenic trioxide
P013	542–62–1	Barium cyanide
P014	108–98–5	Benzenethiol
P014	108–98–5	Thiophenol
P015	7440–41–7	Beryllium powder
P016	542–88–1	Dichloromethyl ether
P016	542–88–1	Methane, oxybis[chloro-
P017	598–31–2	Bromoacetone
P017	598–31–2	2-Propanone, 1-bromo-
P018	357–57–3	Brucine
P018	357–57–3	Strychnidin-10-one, 2,3-dimethoxy-
P020	88–85–7	Dinoseb
P020	88–85–7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
P021	592–01–8	Calcium cyanide
P021	592–01–8	Calcium cyanide $Ca(CN)_2$

P022	75–15–0	Carbon disulfide
P023	107–20–0	Acetaldehyde, chloro-
P023	107–20–0	Chloroacetaldehyde
P024	106–47–8	Benzenamine, 4-chloro-
P024	106–47–8	p-Chloroaniline
P026	5344–82–1	1-(o-Chlorophenyl)thiourea
P026	5344–82–1	Thiourea, (2-chlorophenyl)-
P027	542–76–7	3-Chloropropionitrile
P027	542–76–7	Propanenitrile, 3-chloro-
P028	100–44–7	Benzene, (chloromethyl)-
P028	100–44–7	Benzyl chloride
P029	544–92–3	Copper cyanide
P029	544–92–3	Copper cyanide Cu(CN)
P030		Cyanides (soluble cyanide salts), not otherwise specified
P031	460–19–5	Cyanogen
P031	460–19–5	Ethanedinitrile
P033	506–77–4	Cyanogen chloride
P033	506–77–4	Cyanogen chloride (CN)Cl
P034	131–89–5	2-Cyclohexyl-4,6-dinitrophenol
P034	131–89–5	Phenol, 2-cyclohexyl-4,6-dinitro-
P036	696–28–6	Arsonous dichloride, phenyl-
P036	696–28–6	Dichlorophenylarsine
P037	60–57–1	Dieldrin
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-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta, 7aalpha)-
P038	692–42–2	Arsine, diethyl-
P038	692–42–2	Diethylarsine
P039	298–04–4	Disulfoton
P039	298–04–4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester
P040	297–97–2	O,O-Diethyl O-pyrazinyl phosphorothioate
P040	297–97–2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
P041	311–45–5	Diethyl-p-nitrophenyl phosphate
P041	311–45–5	Phosphoric acid, diethyl 4-nitrophenyl ester
P042	51–43–4	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-
P042	51–43–4	Epinephrine

P043	55–91–4	Diisopropylfluorophosphate (DFP)
P043	55–91–4	Phosphorofluoridic acid, bis(1-methylethyl) ester
P044	60–51–5	Dimethoate
P044	60–51–5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methyl amino)-2-oxoethyl] ester
P045	39196–18–4	2-Butanone, 3,3-dimethyl-1-(methylthio)-, O-[(methylamino)carbonyl] oxime
P045	39196–18–4	Thiofanox
P046	122–09–8	Benzeneethanamine, alpha,alpha-dimethyl-
P046	122–09–8	alpha,alpha-Dimethylphenethylamine
P047	[1]534–52–1	4,6-Dinitro-o-cresol, & salts
P047	[1]534–52–1	Phenol, 2-methyl-4,6-dinitro-, & salts
P048	51–28–5	2,4-Dinitrophenol
P048	51–28–5	Phenol, 2,4-dinitro-
P049	541–53–7	Dithiobiuret
P049	541–53–7	Thioimidodicarbonic diamide $[(H_2 N)C(S)]_2 NH$
P050	115–29–7	Endosulfan
P050	115–29–7	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide
P051	[1]72–20–8	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-, (1aalpha,2beta,2abeta,3alpha,6alpha,6abeta,7beta, 7aalpha)-, & metabolites
P051	72–20–8	Endrin
P051	72–20–8	Endrin, & metabolites
P054	151–56–4	Aziridine
P054	151–56–4	Ethyleneimine
P056	7782–41–4	Fluorine
P057	640–19–7	Acetamide, 2-fluoro-
P057	640–19–7	Fluoroacetamide
P058	62–74–8	Acetic acid, fluoro-, sodium salt
P058	62–74–8	Fluoroacetic acid, sodium salt
P059	76–44–8	Heptachlor
P059	76–44–8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
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)-

P060	465–73–6	Isodrin
P062	757–58–4	Hexaethyl tetraphosphate
P062	757–58–4	Tetraphosphoric acid, hexaethyl ester
P063	74–90–8	Hydrocyanic acid
P063	74–90–8	Hydrogen cyanide
P064	624–83–9	Methane, isocyanato-
P064	624–83–9	Methyl isocyanate
P065	628–86–4	Fulminic acid, mercury(2+) salt (R,T)
P065	628–86–4	Mercury fulminate (R,T)
P066	16752–77–5	Ethanimidothioic acid, N-[[(methylamino)carbonyl]oxy]-, methyl ester
P066	16752–77–5	Methomyl
P067	75–55–8	Aziridine, 2-methyl-
P067	75–55–8	1,2-Propylenimine
P068	60–34–4	Hydrazine, methyl-
P068	60–34–4	Methyl hydrazine
P069	75–86–5	2-Methyllactonitrile
P069	75–86–5	Propanenitrile, 2-hydroxy-2-methyl-
P070	116–06–3	Aldicarb
P070	116–06–3	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime
P071	298–00–0	Methyl parathion
P071	298–00–0	Phosphorothioic acid, O,O,-dimethyl O-(4-nitrophenyl) ester
P072	86–88–4	alpha-Naphthylthiourea
P072	86–88–4	Thiourea, 1-naphthalenyl-
P073	13463–39–3	Nickel carbonyl
P073	13463–39–3	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
P075	[1]54–11–5	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-, & salts
P076	10102–43–9	Nitric oxide
P076	10102–43–9	Nitrogen oxide NO

P077	100–01–6	Benzenamine, 4-nitro-
P077	100–01–6	p-Nitroaniline
P078	10102–44–0	Nitrogen dioxide
P078	10102–44–0	Nitrogen oxide NO_2
P081	55–63–0	Nitroglycerine (R)
P081	55–63–0	1,2,3-Propanetriol, trinitrate (R)
P082	62–75–9	Methanamine, -methyl-N-nitroso-
P082	62–75–9	N-Nitrosodimethylamine
P084	4549–40–0	N-Nitrosomethylvinylamine
P084	4549–40–0	Vinylamine, -methyl-N-nitroso-
P085	152–16–9	Diphosphoramide, octamethyl-
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	Endothall
P088	145–73–3	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
P089	56–38–2	Parathion
P089	56–38–2	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester
P092	62–38–4	Mercury, (acetato-O)phenyl-
P092	62–38–4	Phenylmercury acetate
P093	103–85–5	Phenylthiourea
P093	103–85–5	Thiourea, phenyl-
P094	298–02–2	Phorate
P094	298–02–2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester
P095	75–44–5	Carbonic dichloride
P095	75–44–5	Phosgene
P096	7803–51–2	Hydrogen phosphide
P096	7803–51–2	Phosphine
P097	52–85–7	Famphur
P097	52–85–7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester
P098	151–50–8	Potassium cyanide
P098	151–50–8	Potassium cyanide K(CN)
P099	506–61–6	Argentate(1-), bis(cyano-C)-, potassium

P099	506–61–6	Potassium silver cyanide
P101	107–12–0	Ethyl cyanide
P101	107–12–0	Propanenitrile
P102	107–19–7	Propargyl alcohol
P102	107–19–7	2-Propyn-1-ol
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]157–24–9	Strychnidin-10-one, & salts
P108	[1]157–24–9	Strychnine, & salts
P109	3689–24–5	Tetraethyldithiopyrophosphate
P109	3689–24–5	Thiodiphosphoric acid, tetraethyl ester
P110	78–00–2	Plumbane, tetraethyl-
P110	78–00–2	Tetraethyl lead
P111	107–49–3	Diphosphoric acid, tetraethyl ester
P111	107–49–3	Tetraethyl pyrophosphate
P112	509–14–8	Methane, tetranitro-(R)
P112	509–14–8	Tetranitromethane (R)
P113	1314–32–5	Thallic oxide
P113	1314–32–5	Thallium oxide $Tl_2 O_3$
P114	12039–52–0	Selenious acid, dithallium(1+) salt
P114	12039–52–0	Tetraethyldithiopyrophosphate
P115	7446–18–6	Thiodiphosphoric acid, tetraethyl ester
P115	7446–18–6	Plumbane, tetraethyl-
P116	79–19–6	Tetraethyl lead
P116	79–19–6	Thiosemicarbazide
P118	75–70–7	Methanethiol, trichloro-
P118	75–70–7	Trichloromethanethiol
P119	7803–55–6	Ammonium vanadate
P119	7803–55–6	Vanadic acid, ammonium salt
P120	1314–62–1	Vanadium oxide V_2O_5

P120	1314–62–1	Vanadium pentoxide
P121	557–21–1	Zinc cyanide
P121	557–21–1	Zinc cyanide $Zn(CN)_2$
P122	1314–84–7	Zinc phosphide $Zn_3 P_2$, when present at concentrations greater than 10% (R,T)
P123	8001–35–2	Toxaphene
P127	1563–66–2	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-, methylcarbamate.
P127	1563–66–2	Carbofuran
P128	315–8–4	Mexacarbate
P128	315–18–4	Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester)
P185	26419–73–8	1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl-, O-[(methylamino)-carbonyl]oxime.
P185	26419–73–8	Tirpate
P188	57–64–7	Benzoic 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)
P188	57–64–7	Physostigmine salicylate
P189	55285–14–8	Carbamic acid, [(dibutylamino)-thio]methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester
P189	55285–14–8	Carbosulfan
P190	1129–41–5	Carbamic acid, methyl-, 3-methylphenyl ester
P190	1129–41–5	Metolcarb
P191	644–64–4	Carbamic acid, dimethyl-, 1-[(dimethyl-amino)carbonyl]-5-methyl-1H-pyrazol-3-yl ester
P191	644–64–4	Dimetilan
P192	119–38–0	Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1H-pyrazol-5-yl ester
P192	119–38–0	Isolan
P194	23135–22–0	Ethanimidthioic acid, 2-(dimethylamino)-N-[[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester
P194	23135–22–0	Oxamyl
P196	15339–36–3	Manganese, bis(dimethylcarbamodithioato-S,S')-,
P196	15339–36–3	Manganese dimethyldithiocarbamate

P197	17702–57–7	Formparanate
P197	17702–57–7	Methanimidamide, N,N-dimethyl-N'-[2-methyl-4-[[(methylamino)carbonyl]oxy]phenyl]-
P198	23422–53–9	Formetanate hydrochloride
P198	23422–53–9	Methanimidamide, N,N-dimethyl-N'-[3-[[(methylamino)-carbonyl]oxy]phenyl]-monohydrochloride
P199	2032–65–7	Methiocarb
P199	2032–65–7	Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate
P201	2631–37–0	Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate
P201	2631–37–0	Promecarb
P202	64–00–6	m-Cumenyl methylcarbamate
P202	64–00–6	3-Isopropylphenyl N-methylcarbamate
P202	64–00–6	Phenol, 3-(1-methylethyl)-, methyl carbamate
P203	1646–88–4	Aldicarb sulfone
P203	1646–88–4	Propanal, 2-methyl-2-(methyl-sulfonyl)-, O-[(methylamino)carbonyl] oxime
P204	57–47–6	Physostigmine
P204	57–47–6	Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, methylcarbamate (ester), (3aS-cis)-
P205	137–30–4	Zinc, bis(dimethylcarbamodithioato-S,S')-,
P205	137–30–4	Ziram

Appendix D. Discarded commercial chemical products, off-specification species, container residues and spill residues thereof (§261.33[f]).

APPENDIX D. Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof (§261.33(f)).

Hazardous waste No.	Chemical abstracts No.	Substance
U394	30558–43–1	A2213.
U001	75–07–0	Acetaldehyde (I)
U034	75–87–6	Acetaldehyde, trichloro-
U187	62–44–2	Acetamide, N-(4-ethoxyphenyl)-
U005	53–96–3	Acetamide, N-9H-fluoren-2-yl-
U240	[1]94–75–7	Acetic acid, (2,4-dichlorophenoxy)-, salts & esters
U112	141–78–6	Acetic acid ethyl ester (I)
U144	301–04–2	Acetic acid, lead(2+) salt
U214	563–68–8	Acetic acid, thallium(1+) salt
see F027	93–76–5	Acetic acid, (2,4,5-trichlorophenoxy)-
U002	67–64–1	Acetone (I)
U003	75–05–8	Acetonitrile (I,T)
U004	98–86–2	Acetophenone
U005	53–96–3	2-Acetylaminofluorene
U006	75–36–5	Acetyl chloride (C,R,T)
U007	79–06–1	Acrylamide
U008	79–10–7	Acrylic acid (I)
U009	107–13–1	Acrylonitrile
U011	61–82–5	Amitrole
U012	62–53–3	Aniline (I,T)
U136	75–60–5	Arsinic acid, dimethyl-
U014	492–80–8	Auramine
U015	115–02–6	Azaserine
U010	50–07–7	Azirino[2′,3′:3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-[[(aminocarbonyl)oxy]methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1aalpha,

		8beta,8aalpha,8balpha)]-
U280	101–27–9	Barban.
U278	22781–23–3	Bendiocarb.
U364	22961–82–6	Bendiocarb phenol.
U271	17804–35–2	Benomyl.
U157	56–49–5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
U016	225–51–4	Benz[c]acridine
U017	98–87–3	Benzal chloride
U192	23950–58–5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-
U018	56–55–3	Benz[a]anthracene
U094	57–97–6	Benz[a]anthracene, 7,12-dimethyl-
U012	62–53–3	Benzenamine (I,T)
U014	492–80–8	Benzenamine, 4,4′-carbonimidoylbis[N,N-dimethyl-
U049	3165–93–3	Benzenamine, 4-chloro-2-methyl-, hydrochloride
U093	60–11–7	Benzenamine, N,N-dimethyl-4-(phenylazo)-
U328	95–53–4	Benzenamine, 2-methyl-
U353	106–49–0	Benzenamine, 4-methyl-
U158	101–14–4	Benzenamine, 4,4′-methylenebis[2-chloro-
U222	636–21–5	Benzenamine, 2-methyl-, hydrochloride
U181	99–55–8	Benzenamine, 2-methyl-5-nitro-
U019	71–43–2	Benzene (I,T)
U038	510–15–6	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester
U030	101–55–3	Benzene, 1-bromo-4-phenoxy-
U035	305–03–3	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-
U037	108–90–7	Benzene, chloro-
U221	25376–45–8	Benzenediamine, ar-methyl-
U028	117–81–7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester
U069	84–74–2	1,2-Benzenedicarboxylic acid, dibutyl ester

U088	84–66–2	1,2-Benzenedicarboxylic acid, diethyl ester
U102	131–11–3	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	117–84–0	1,2-Benzenedicarboxylic acid, dioctyl ester
U070	95–50–1	Benzene, 1,2-dichloro-
U071	541–73–1	Benzene, 1,3-dichloro-
U072	106–46–7	Benzene, 1,4-dichloro-
U060	72–54–8	Benzene, 1,1′-(2,2-dichloroethylidene)bis[4-chloro-
U017	98–87–3	Benzene, (dichloromethyl)-
U223	26471–62–5	Benzene, 1,3-diisocyanatomethyl- (R,T)
U239	1330–20–7	Benzene, dimethyl- (I,T)
U201	108–46–3	1,3-Benzenediol
U127	118–74–1	Benzene, hexachloro-
U056	110–82–7	Benzene, hexahydro- (I)
U220	108–88–3	Benzene, methyl-
U105	121–14–2	Benzene, 1-methyl-2,4-dinitro-
U106	606–20–2	Benzene, 2-methyl-1,3-dinitro-
U055	98–82–8	Benzene, (1-methylethyl)- (I)
U169	98–95–3	Benzene, nitro-
U183	608–93–5	Benzene, pentachloro-
U185	82–68–8	Benzene, pentachloronitro-
U020	98–09–9	Benzenesulfonic acid chloride (C,R)
U020	98–09–9	Benzenesulfonyl chloride (C,R)
U207	95–94–3	Benzene, 1,2,4,5-tetrachloro-
U061	50–29–3	Benzene, 1,1′-(2,2,2-trichloroethylidene)bis[4-chloro-
U247	72–43–5	Benzene, 1,1′-(2,2,2-trichloroethylidene)bis[4- methoxy-
U023	98–07–7	Benzene, (trichloromethyl)-
U234	99–35–4	Benzene, 1,3,5-trinitro-
U021	92–87–5	Benzidine
U202	[1]81–07–2	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide, & salts
U278	22781–23–3	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate.

U364	22961–82–6	1,3-Benzodioxol-4-ol, 2,2-dimethyl-,
U203	94–59–7	1,3-Benzodioxole, 5-(2-propenyl)-
U141	120–58–1	1,3-Benzodioxole, 5-(1-propenyl)-
U367	1563–38–8	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-
U090	94–58–6	1,3-Benzodioxole, 5-propyl-
U064	189–55–9	Benzo[rst]pentaphene
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
U022	50–32–8	Benzo[a]pyrene
U197	106–51–4	p-Benzoquinone
U023	98–07–7	Benzotrichloride (C,R,T)
U085	1464–53–5	2,2′-Bioxirane
U021	92–87–5	[1,1′-Biphenyl]-4,4′-diamine
U073	91–94–1	[1,1′-Biphenyl]-4,4′-diamine, 3,3′-dichloro-
U091	119–90–4	[1,1′-Biphenyl]-4,4′-diamine, 3,3′-dimethoxy-
U095	119–93–7	[1,1′-Biphenyl]-4,4′-diamine, 3,3′-dimethyl-
U225	75–25–2	Bromoform
U030	101–55–3	4-Bromophenyl phenyl ether
U128	87–68–3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U172	924–16–3	1-Butanamine, N-butyl-N-nitroso-
U031	71–36–3	1-Butanol (I)
U159	78–93–3	2-Butanone (I,T)
U160	1338–23–4	2-Butanone, peroxide (R,T)
U053	4170–30–3	2-Butenal
U074	764–41–0	2-Butene, 1,4-dichloro- (I,T)
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]]-

U031	71–36–3	n-Butyl alcohol (I)
U136	75–60–5	Cacodylic acid
U032	13765–19–0	Calcium chromate
U372	10605–21–7	Carbamic acid, 1H-benzimidazol-2-yl, methyl ester.
U271	17804–35–2	Carbamic acid, [1-[(butylamino)carbonyl]-1H-benzimidazol-2-yl]-, methyl ester.
U280	101–27–9	Carbamic acid, (3-chlorophenyl)-, 4-chloro-2-butynyl ester.
U238	51–79–6	Carbamic acid, ethyl ester
U178	615–53–2	Carbamic acid, methylnitroso-, ethyl ester
U373	122–42–9	Carbamic acid, phenyl-, 1-methylethyl ester.
U409	23564–05–8	Carbamic acid, [1,2-phenylenebis (iminocarbonothioyl)]bis-, dimethyl ester.
U097	79–44–7	Carbamic chloride, dimethyl-
U389	2303–17–5	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3,3-trichloro-2-propenyl) ester.
U387	52888–80–9	Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester.
U114	[1]111–54–6	Carbamodithioic acid, 1,2-ethanediylbis-, salts & esters
U062	2303–16–4	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester
U279	63–25–2	Carbaryl.
U372	10605–21–7	Carbendazim.
U367	1563–38–8	Carbofuran phenol.
U215	6533–73–9	Carbonic acid, dithallium(1+) salt
U033	353–50–4	Carbonic difluoride
U156	79–22–1	Carbonochloridic acid, methyl ester (I,T)
U033	353–50–4	Carbon oxyfluoride (R,T)
U211	56–23–5	Carbon tetrachloride
U034	75–87–6	Chloral
U035	305–03–3	Chlorambucil
U036	57–74–9	Chlordane, alpha & gamma isomers
U026	494–03–1	Chlornaphazin

U037	108–90–7	Chlorobenzene
U038	510–15–6	Chlorobenzilate
U039	59–50–7	p-Chloro-m-cresol
U042	110–75–8	2-Chloroethyl vinyl ether
U044	67–66–3	Chloroform
U046	107–30–2	Chloromethyl methyl ether
U047	91–58–7	beta-Chloronaphthalene
U048	95–57–8	o-Chlorophenol
U049	3165–93–3	4-Chloro-o-toluidine, hydrochloride
U032	13765–19–0	Chromic acid H_2CrO_4, calcium salt
U050	218–01–9	Chrysene
U051		Creosote
U052	1319–77–3	Cresol (Cresylic acid)
U053	4170–30–3	Crotonaldehyde
U055	98–82–8	Cumene (I)
U246	506–68–3	Cyanogen bromide (CN)Br
U197	106–51–4	2,5-Cyclohexadiene-1,4-dione
U056	110–82–7	Cyclohexane (I)
U129	58–89–9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-
U057	108–94–1	Cyclohexanone (I)
U130	77–47–4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
U058	50–18–0	Cyclophosphamide
U240	[1]94–75–7	2,4-D, salts & esters
U059	20830–81–3	Daunomycin
U060	72–54–8	DDD
U061	50–29–3	DDT
U062	2303–16–4	Diallate
U063	53–70–3	Dibenz[a,h]anthracene
U064	189–55–9	Dibenzo[a,i]pyrene
U066	96–12–8	1,2-Dibromo-3-chloropropane

U069	84–74–2	Dibutyl phthalate
U070	95–50–1	o-Dichlorobenzene
U071	541–73–1	m-Dichlorobenzene
U072	106–46–7	p-Dichlorobenzene
U073	91–94–1	3,3′-Dichlorobenzidine
U074	764–41–0	1,4-Dichloro-2-butene (I,T)
U075	75–71–8	Dichlorodifluoromethane
U078	75–35–4	1,1-Dichloroethylene
U079	156–60–5	1,2-Dichloroethylene
U025	111–44–4	Dichloroethyl ether
U027	108–60–1	Dichloroisopropyl ether
U024	111–91–1	Dichloromethoxy ethane
U081	120–83–2	2,4-Dichlorophenol
U082	87–65–0	2,6-Dichlorophenol
U084	542–75–6	1,3-Dichloropropene
U085	1464–53–5	1,2:3,4-Diepoxybutane (I,T)
U108	123–91–1	1,4-Diethyleneoxide
U028	117–81–7	Diethylhexyl phthalate
U395	5952–26–1	Diethylene glycol, dicarbamate.
U086	1615–80–1	N,N′-Diethylhydrazine
U087	3288–58–2	O,O-Diethyl S-methyl dithiophosphate
U088	84–66–2	Diethyl phthalate
U089	56–53–1	Diethylstilbesterol
U090	94–58–6	Dihydrosafrole
U091	119–90–4	3,3′-Dimethoxybenzidine
U092	124–40–3	Dimethylamine (I)
U093	60–11–7	p-Dimethylaminoazobenzene
U094	57–97–6	7,12-Dimethylbenz[a]anthracene
U095	119–93–7	3,3′-Dimethylbenzidine
U096	80–15–9	alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097	79–44–7	Dimethylcarbamoyl chloride
U098	57–14–7	1,1-Dimethylhydrazine
U099	540–73–8	1,2-Dimethylhydrazine

U101	105–67–9	2,4-Dimethylphenol
U102	131–11–3	Dimethyl phthalate
U103	77–78–1	Dimethyl sulfate
U105	121–14–2	2,4-Dinitrotoluene
U106	606–20–2	2,6-Dinitrotoluene
U107	117–84–0	Di-n-octyl phthalate
U108	123–91–1	1,4-Dioxane
U109	122–66–7	1,2-Diphenylhydrazine
U110	142–84–7	Dipropylamine (I)
U111	621–64–7	Di-n-propylnitrosamine
U041	106–89–8	Epichlorohydrin
U001	75–07–0	Ethanal (I)
U404	121–44–8	Ethanamine, N,N-diethyl-
U174	55–18–5	Ethanamine, N-ethyl-N-nitroso-
U155	91–80–5	1,2-Ethanediamine, N,N-dimethyl-N′-2-pyridinyl-N′-(2-thienylmethyl)-
U067	106–93–4	Ethane, 1,2-dibromo-
U076	75–34–3	Ethane, 1,1-dichloro-
U077	107–06–2	Ethane, 1,2-dichloro-
U131	67–72–1	Ethane, hexachloro-
U024	111–91–1	Ethane, 1,1′-[methylenebis(oxy)]bis[2-chloro-
U117	60–29–7	Ethane, 1,1′-oxybis-(I)
U025	111–44–4	Ethane, 1,1′-oxybis[2-chloro-
U184	76–01–7	Ethane, pentachloro-
U208	630–20–6	Ethane, 1,1,1,2-tetrachloro-
U209	79–34–5	Ethane, 1,1,2,2-tetrachloro-
U218	62–55–5	Ethanethioamide
U226	71–55–6	Ethane, 1,1,1-trichloro-
U227	79–00–5	Ethane, 1,1,2-trichloro-
U410	59669–26–0	Ethanimidothioic acid, N,N′-[thiobis[(methylimino)carbonyloxy]]bis-, dimethyl ester
U394	30558–43–1	Ethanimidothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-, methyl ester.
U359	110–80–5	Ethanol, 2-ethoxy-
U173	1116–54–7	Ethanol, 2,2′-(nitrosoimino)bis-

U395	5952–26–1	Ethanol, 2,2′-oxybis-, dicarbamate.
U004	98–86–2	Ethanone, 1-phenyl-
U043	75–01–4	Ethene, chloro-
U042	110–75–8	Ethene, (2-chloroethoxy)-
U078	75–35–4	Ethene, 1,1-dichloro-
U079	156–60–5	Ethene, 1,2-dichloro-, (E)-
U210	127–18–4	Ethene, tetrachloro-
U228	79–01–6	Ethene, trichloro-
U112	141–78–6	Ethyl acetate (I)
U113	140–88–5	Ethyl acrylate (I)
U238	51–79–6	Ethyl carbamate (urethane)
U117	60–29–7	Ethyl ether (I)
U114	[1]111–54–6	Ethylenebisdithiocarbamic acid, salts & esters
U067	106–93–4	Ethylene dibromide
U077	107–06–2	Ethylene dichloride
U359	110–80–5	Ethylene glycol monoethyl ether
U115	75–21–8	Ethylene oxide (I,T)
U116	96–45–7	Ethylenethiourea
U076	75–34–3	Ethylidene dichloride
U118	97–63–2	Ethyl methacrylate
U119	62–50–0	Ethyl methanesulfonate
U120	206–44–0	Fluoranthene
U122	50–00–0	Formaldehyde
U123	64–18–6	Formic acid (C,T)
U124	110–00–9	Furan (I)
U125	98–01–1	2-Furancarboxaldehyde (I)
U147	108–31–6	2,5-Furandione
U213	109–99–9	Furan, tetrahydro-(I)
U125	98–01–1	Furfural (I)
U124	110–00–9	Furfuran (I)
U206	18883–66–4	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-, D-
U206	18883–66–4	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)-carbonyl]amino]-
U126	765–34–4	Glycidylaldehyde

U163	70–25–7	Guanidine, N-methyl-N′-nitro-N-nitroso-
U127	118–74–1	Hexachlorobenzene
U128	87–68–3	Hexachlorobutadiene
U130	77–47–4	Hexachlorocyclopentadiene
U131	67–72–1	Hexachloroethane
U132	70–30–4	Hexachlorophene
U243	1888–71–7	Hexachloropropene
U133	302–01–2	Hydrazine (R,T)
U086	1615–80–1	Hydrazine, 1,2-diethyl-
U098	57–14–7	Hydrazine, 1,1-dimethyl-
U099	540–73–8	Hydrazine, 1,2-dimethyl-
U109	122–66–7	Hydrazine, 1,2-diphenyl-
U134	7664–39–3	Hydrofluoric acid (C,T)
U134	7664–39–3	Hydrogen fluoride (C,T)
U135	7783–06–4	Hydrogen sulfide
U135	7783–06–4	Hydrogen sulfide H_2S
U096	80–15–9	Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U116	96–45–7	2-Imidazolidinethione
U137	193–39–5	Indeno[1,2,3-cd]pyrene
U190	85–44–9	1,3-Isobenzofurandione
U140	78–83–1	Isobutyl alcohol (I,T)
U141	120–58–1	Isosafrole
U142	143–50–0	Kepone
U143	303–34–4	Lasiocarpine
U144	301–04–2	Lead acetate
U146	1335–32–6	Lead, bis(acetato-O)tetrahydroxytri-
U145	7446–27–7	Lead phosphate
U146	1335–32–6	Lead subacetate
U129	58–89–9	Lindane

U163	70–25–7	MNNG
U147	108–31–6	Maleic anhydride
U148	123–33–1	Maleic hydrazide
U149	109–77–3	Malononitrile
U150	148–82–3	Melphalan
U151	7439–97–6	Mercury
U152	126–98–7	Methacrylonitrile (I, T)
U092	124–40–3	Methanamine, N-methyl- (I)
U029	74–83–9	Methane, bromo-
U045	74–87–3	Methane, chloro- (I, T)
U046	107–30–2	Methane, chloromethoxy-
U068	74–95–3	Methane, dibromo-
U080	75–09–2	Methane, dichloro-
U075	75–71–8	Methane, dichlorodifluoro-
U138	74–88–4	Methane, iodo-
U119	62–50–0	Methanesulfonic acid, ethyl ester
U211	56–23–5	Methane, tetrachloro-
U153	74–93–1	Methanethiol (I, T)
U225	75–25–2	Methane, tribromo-
U044	67–66–3	Methane, trichloro-
U121	75–69–4	Methane, trichlorofluoro-
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-
U154	67–56–1	Methanol (I)
U155	91–80–5	Methapyrilene
U142	143–50–0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-
U247	72–43–5	Methoxychlor
U154	67–56–1	Methyl alcohol (I)
U029	74–83–9	Methyl bromide
U186	504–60–9	1-Methylbutadiene (I)
U045	74–87–3	Methyl chloride (I,T)
U156	79–22–1	Methyl chlorocarbonate (I,T)
U226	71–55–6	Methyl chloroform
U157	56–49–5	3-Methylcholanthrene

U158	101–14–4	4,4′-Methylenebis(2-chloroaniline)
U068	74–95–3	Methylene bromide
U080	75–09–2	Methylene chloride
U159	78–93–3	Methyl ethyl ketone (MEK) (I,T)
U160	1338–23–4	Methyl ethyl ketone peroxide (R,T)
U138	74–88–4	Methyl iodide
U161	108–10–1	Methyl isobutyl ketone (I)
U162	80–62–6	Methyl methacrylate (I,T)
U161	108–10–1	4-Methyl-2-pentanone (I)
U164	56–04–2	Methylthiouracil
U010	50–07–7	Mitomycin C
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)-
U167	134–32–7	1-Naphthalenamine
U168	91–59–8	2-Naphthalenamine
U026	494–03–1	Naphthalenamine, N,N′-bis(2-chloroethyl)-
U165	91–20–3	Naphthalene
U047	91–58–7	Naphthalene, 2-chloro-
U166	130–15–4	1,4-Naphthalenedione
U236	72–57–1	2,7-Naphthalenedisulfonic acid, 3,3′-[(3,3′-dimethyl[1,1′-biphenyl]-4,4′-diyl)bis(azo)bis[5-amino-4-hydroxy]-, tetrasodium salt
U279	63–25–2	1-Naphthalenol, methylcarbamate.
U166	130–15–4	1,4-Naphthoquinone
U167	134–32–7	alpha-Naphthylamine
U168	91–59–8	beta-Naphthylamine
U217	10102–45–1	Nitric acid, thallium(1+) salt
U169	98–95–3	Nitrobenzene (I,T)
U170	100–02–7	p-Nitrophenol
U171	79–46–9	2-Nitropropane (I,T)
U172	924–16–3	N-Nitrosodi-n-butylamine
U173	1116–54–7	N-Nitrosodiethanolamine

U174	55–18–5	N-Nitrosodiethylamine
U176	759–73–9	N-Nitroso-N-ethylurea
U177	684–93–5	N-Nitroso-N-methylurea
U178	615–53–2	N-Nitroso-N-methylurethane
U179	100–75–4	N-Nitrosopiperidine
U180	930–55–2	N-Nitrosopyrrolidine
U181	99–55–8	5-Nitro-o-toluidine
U193	1120–71–4	1,2-Oxathiolane, 2,2-dioxide
U058	50–18–0	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide
U115	75–21–8	Oxirane (I,T)
U126	765–34–4	Oxiranecarboxyaldehyde
U041	106–89–8	Oxirane, (chloromethyl)-
U182	123–63–7	Paraldehyde
U183	608–93–5	Pentachlorobenzene
U184	76–01–7	Pentachloroethane
U185	82–68–8	Pentachloronitrobenzene (PCNB)
See F027	87–86–5	Pentachlorophenol
U161	108–10–1	Pentanol, 4-methyl-
U186	504–60–9	1,3-Pentadiene (I)
U187	62–44–2	Phenacetin
U188	108–95–2	Phenol
U048	95–57–8	Phenol, 2-chloro-
U039	59–50–7	Phenol, 4-chloro-3-methyl-
U081	120–83–2	Phenol, 2,4-dichloro-
U082	87–65–0	Phenol, 2,6-dichloro-
U089	56–53–1	Phenol, 4,4′-(1,2-diethyl-1,2-ethenediyl)bis-, (E)-
U101	105–67–9	Phenol, 2,4-dimethyl-
U052	1319–77–3	Phenol, methyl-
U132	70–30–4	Phenol, 2,2′-methylenebis[3,4,6-trichloro-
U411	114–26–1	Phenol, 2-(1-methylethoxy)-, methylcarbamate.
U170	100–02–7	Phenol, 4-nitro-
See F027	87–86–5	Phenol, pentachloro-
See F027	58–90–2	Phenol, 2,3,4,6-tetrachloro-

See F027	95–95–4	Phenol, 2,4,5-trichloro-
See F027	88–06–2	Phenol, 2,4,6-trichloro-
U150	148–82–3	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-
U145	7446–27–7	Phosphoric acid, lead(2+) salt (2:3)
U087	3288–58–2	Phosphorodithioic acid, O,O-diethyl S-methyl ester
U189	1314–80–3	Phosphorus sulfide (R)
U190	85–44–9	Phthalic anhydride
U191	109–06–8	2-Picoline
U179	100–75–4	Piperidine, 1-nitroso-
U192	23950–58–5	Pronamide
U194	107–10–8	1-Propanamine (I,T)
U111	621–64–7	1-Propanamine, N-nitroso-N-propyl-
U110	142–84–7	1-Propanamine, N-propyl- (I)
U066	96–12–8	Propane, 1,2-dibromo-3-chloro-
U083	78–87–5	Propane, 1,2-dichloro-
U149	109–77–3	Propanedinitrile
U171	79–46–9	Propane, 2-nitro- (I,T)
U027	108–60–1	Propane, 2,2′-oxybis[2-chloro-
U193	1120–71–4	1,3-Propane sultone
See F027	93–72–1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-
U235	126–72–7	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U140	78–83–1	1-Propanol, 2-methyl- (I,T)
U002	67–64–1	2-Propanone (I)
U007	79–06–1	2-Propenamide
U084	542–75–6	1-Propene, 1,3-dichloro-
U243	1888–71–7	1-Propene, 1,1,2,3,3,3-hexachloro-
U009	107–13–1	2-Propenenitrile
U152	126–98–7	2-Propenenitrile, 2-methyl- (I,T)
U008	79–10–7	2-Propenoic acid (I)
U113	140–88–5	2-Propenoic acid, ethyl ester (I)
U118	97–63–2	2-Propenoic acid, 2-methyl-, ethyl ester

U162	80–62–6	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U373	122–42–9	Propham.
U411	114–26–1	Propoxur.
U387	52888–80–9	Prosulfocarb.
U194	107–10–8	n-Propylamine (I,T)
U083	78–87–5	Propylene dichloride
U148	123–33–1	3,6-Pyridazinedione, 1,2-dihydro-
U196	110–86–1	Pyridine
U191	109–06–8	Pyridine, 2-methyl-
U237	66–75–1	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-
U164	56–04–2	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
U180	930–55–2	Pyrrolidine, 1-nitroso-
U200	50–55–5	Reserpine
U201	108–46–3	Resorcinol
U202	[1]81–07–2	Saccharin, & salts
U203	94–59–7	Safrole
U204	7783–00–8	Selenious acid
U204	7783–00–8	Selenium dioxide
U205	7488–56–4	Selenium sulfide
U205	7488–56–4	Selenium sulfide SeS_2 (R,T)
U015	115–02–6	L-Serine, diazoacetate (ester)
See F027	93–72–1	Silvex (2,4,5-TP)
U206	18883–66–4	Streptozotocin
U103	77–78–1	Sulfuric acid, dimethyl ester
U189	1314–80–3	Sulfur phosphide (R)
See F027	93–76–5	2,4,5-T
U207	95–94–3	1,2,4,5-Tetrachlorobenzene
U208	630–20–6	1,1,1,2-Tetrachloroethane
U209	79–34–5	1,1,2,2-Tetrachloroethane

U210	127–18–4	Tetrachloroethylene
See F027	58–90–2	2,3,4,6-Tetrachlorophenol
U213	109–99–9	Tetrahydrofuran (I)
U214	563–68–8	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
U223	26471–62–5	Toluene diisocyanate (R,T)
U328	95–53–4	o-Toluidine
U353	106–49–0	p-Toluidine
U222	636–21–5	o-Toluidine hydrochloride
U389	2303–17–5	Triallate.
U011	61–82–5	1H-1,2,4-Triazol-3-amine
U226	71–55–6	1,1,1-Trichloroethane
U227	79–00–5	1,1,2-Trichloroethane
U228	79–01–6	Trichloroethylene
U121	75–69–4	Trichloromonofluoromethane
See F027	95–95–4	2,4,5-Trichlorophenol
See F027	88–06–2	2,4,6-Trichlorophenol

U404	121–44–8	Triethylamine.
U234	99–35–4	1,3,5-Trinitrobenzene (R,T)
U182	123–63–7	1,3,5-Trioxane, 2,4,6-trimethyl-
U235	126–72–7	Tris(2,3-dibromopropyl) phosphate
U236	72–57–1	Trypan blue
U237	66–75–1	Uracil mustard
U176	759–73–9	Urea, N-ethyl-N-nitroso-
U177	684–93–5	Urea, N-methyl-N-nitroso-
U043	75–01–4	Vinyl chloride
U248	[1]81–81–2	Warfarin, & salts, when present at concentrations of 0.3% or less
U239	1330–20–7	Xylene (I)
U200	50–55–5	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester, (3beta,16beta,17alpha,18beta,20alpha)-
U249	1314–84–7	Zinc phosphide $Zn_3 P_2$, when present at concentrations of 10% or less
U001	75–07–0	Acetaldehyde (I)
U001	75–07–0	Ethanal (I)
U002	67–64–1	Acetone (I)
U002	67–64–1	2-Propanone (I)
U003	75–05–8	Acetonitrile (I,T)
U004	98–86–2	Acetophenone
U004	98–86–2	Ethanone, 1-phenyl-
U005	53–96–3	Acetamide, -9H-fluoren-2-yl-
U005	53–96–3	2-Acetylaminofluorene
U006	75–36–5	Acetyl chloride (C,R,T)
U007	79–06–1	Acrylamide
U007	79–06–1	2-Propenamide
U008	79–10–7	Acrylic acid (I)
U008	79–10–7	2-Propenoic acid (I)
U009	107–13–1	Acrylonitrile
U009	107–13–1	2-Propenenitrile
U010	50–07–7	Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-[[(aminocarbonyl)oxy]methyl]-

		1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1aalpha, 8beta,8aalpha,8balpha)]-
U010	50–07–7	Mitomycin C
U011	61–82–5	Amitrole
U011	61–82–5	1H-1,2,4-Triazol-3-amine
U012	62–53–3	Aniline (I,T)
U012	62–53–3	Benzenamine (I,T)
U014	492–80–8	Auramine
U014	492–80–8	Benzenamine, 4,4'-carbonimidoylbis[N,N-dimethyl-
U015	115–02–6	Azaserine
U015	115–02–6	L-Serine, diazoacetate (ester)
U016	225–51–4	Benz[c]acridine
U017	98–87–3	Benzal chloride
U017	98–87–3	Benzene, (dichloromethyl)-
U018	56–55–3	Benz[a]anthracene
U019	71–43–2	Benzene (I,T)
U020	98–09–9	Benzenesulfonic acid chloride (C,R)
U020	98–09–9	Benzenesulfonyl chloride (C,R)
U021	92–87–5	Benzidine
U021	92–87–5	[1,1'-Biphenyl]-4,4'-diamine
U022	50–32–8	Benzo[a]pyrene
U023	98–07–7	Benzene, (trichloromethyl)-
U023	98–07–7	Benzotrichloride (C,R,T)
U024	111–91–1	Dichloromethoxy ethane
U024	111–91–1	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-
U025	111–44–4	Dichloroethyl ether
U025	111–44–4	Ethane, 1,1'-oxybis[2-chloro-
U026	494–03–1	Chlornaphazin
U026	494–03–1	Naphthalenamine, N,N'-bis(2-chloroethyl)-
U027	108–60–1	Dichloroisopropyl ether
U027	108–60–1	Propane, 2,2'-oxybis[2-chloro-
U028	117–81–7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester
U028	117–81–7	Diethylhexyl phthalate
U029	74–83–9	Methane, bromo-

U029	74–83–9	Methyl bromide
U030	101–55–3	Benzene, 1-bromo-4-phenoxy-
U030	101–55–3	4-Bromophenyl phenyl ether
U031	71–36–3	1-Butanol (I)
U031	71–36–3	n-Butyl alcohol (I)
U032	13765–19–0	Calcium chromate
U032	13765–19–0	Chromic acid H_2 CrO_4, calcium salt
U033	353–50–4	Carbonic difluoride
U033	353–50–4	Carbon oxyfluoride (R,T)
U034	75–87–6	Acetaldehyde, trichloro-
U034	75–87–6	Chloral
U035	305–03–3	Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-
U035	305–03–3	Chlorambucil
U036	57–74–9	Chlordane, alpha & gamma isomers
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-
U037	108–90–7	Benzene, chloro-
U037	108–90–7	Chlorobenzene
U038	510–15–6	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester
U038	510–15–6	Chlorobenzilate
U039	59–50–7	p-Chloro-m-cresol
U039	59–50–7	Phenol, 4-chloro-3-methyl-
U041	106–89–8	Epichlorohydrin
U041	106–89–8	Oxirane, (chloromethyl)-
U042	110–75–8	2-Chloroethyl vinyl ether
U042	110–75–8	Ethene, (2-chloroethoxy)-
U043	75–01–4	Ethene, chloro-
U043	75–01–4	Vinyl chloride
U044	67–66–3	Chloroform
U044	67–66–3	Methane, trichloro-
U045	74–87–3	Methane, chloro- (I,T)
U045	74–87–3	Methyl chloride (I,T)
U046	107–30–2	Chloromethyl methyl ether
U046	107–30–2	Methane, chloromethoxy-

U047	91–58–7	beta-Chloronaphthalene
U047	91–58–7	Naphthalene, 2-chloro-
U048	95–57–8	o-Chlorophenol
U048	95–57–8	Phenol, 2-chloro-
U049	3165–93–3	Benzenamine, 4-chloro-2-methyl-, hydrochloride
U049	3165–93–3	4-Chloro-o-toluidine, hydrochloride
U050	218–01–9	Chrysene
U051		Creosote
U052	1319–77–3	Cresol (Cresylic acid)
U052	1319–77–3	Phenol, methyl-
U053	4170–30–3	2-Butenal
U053	4170–30–3	Crotonaldehyde
U055	98–82–8	Benzene, (1-methylethyl)-(I)
U055	98–82–8	Cumene (I)
U056	110–82–7	Benzene, hexahydro-(I)
U056	110–82–7	Cyclohexane (I)
U057	108–94–1	Cyclohexanone (I)
U058	50–18–0	Cyclophosphamide
U058	50–18–0	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide
U059	20830–81–3	Daunomycin
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)-
U060	72–54–8	Benzene, 1,1'-(2,2-dichloroethylidene)bis[4-chloro-
U060	72–54–8	DDD
U061	50–29–3	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-
U061	50–29–3	DDT
U062	2303–16–	Carbamothioic acid, bis(1-methylethyl)-, S-

	4	(2,3-di chloro-2-propenyl) ester
U062	2303–16–4	Diallate
U063	53–70–3	Dibenz[a,h]anthracene
U064	189–55–9	Benzo[rst]pentaphene
U064	189–55–9	Dibenzo[a,i]pyrene
U066	96–12–8	1,2-Dibromo-3-chloropropane
U066	96–12–8	Propane, 1,2-dibromo-3-chloro-
U067	106–93–4	Ethane, 1,2-dibromo-
U067	106–93–4	Ethylene dibromide
U068	74–95–3	Methane, dibromo-
U068	74–95–3	Methylene bromide
U069	84–74–2	1,2-Benzenedicarboxylic acid, dibutyl ester
U069	84–74–2	Dibutyl phthalate
U070	95–50–1	Benzene, 1,2-dichloro-
U070	95–50–1	o-Dichlorobenzene
U071	541–73–1	Benzene, 1,3-dichloro-
U071	541–73–1	m-Dichlorobenzene
U072	106–46–7	Benzene, 1,4-dichloro-
U072	106–46–7	p-Dichlorobenzene
U073	91–94–1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-
U073	91–94–1	3,3'-Dichlorobenzidine
U074	764–41–0	2-Butene, 1,4-dichloro-(I,T)
U074	764–41–0	1,4-Dichloro-2-butene (I,T)
U075	75–71–8	Dichlorodifluoromethane
U075	75–71–8	Methane, dichlorodifluoro-
U076	75–34–3	Ethane, 1,1-dichloro-
U076	75–34–3	Ethylidene dichloride
U077	107–06–2	Ethane, 1,2-dichloro-
U077	107–06–2	Ethylene dichloride
U078	75–35–4	1,1-Dichloroethylene
U078	75–35–4	Ethene, 1,1-dichloro-
U079	156–60–5	1,2-Dichloroethylene
U079	156–60–5	Ethene, 1,2-dichloro-, (E)-
U080	75–09–2	Methane, dichloro-
U080	75–09–2	Methylene chloride
U081	120–83–2	2,4-Dichlorophenol

U081	120–83–2	Phenol, 2,4-dichloro-
U082	87–65–0	2,6-Dichlorophenol
U082	87–65–0	Phenol, 2,6-dichloro-
U083	78–87–5	Propane, 1,2-dichloro-
U083	78–87–5	Propylene dichloride
U084	542–75–6	1,3-Dichloropropene
U084	542–75–6	1-Propene, 1,3-dichloro-
U085	1464–53–5	2,2'-Bioxirane
U085	1464–53–5	1,2:3,4-Diepoxybutane (I,T)
U086	1615–80–1	N,N'-Diethylhydrazine
U086	1615–80–1	Hydrazine, 1,2-diethyl-
U087	3288–58–2	O,O-Diethyl S-methyl dithiophosphate
U087	3288–58–2	Phosphorodithioic acid, O,O-diethyl S-methyl ester
U088	84–66–2	1,2-Benzenedicarboxylic acid, diethyl ester
U088	84–66–2	Diethyl phthalate
U089	56–53–1	Diethylstilbesterol
U089	56–53–1	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)-
U090	94–58–6	1,3-Benzodioxole, 5-propyl-
U090	94–58–6	Dihydrosafrole
U091	119–90–4	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethoxy-
U091	119–90–4	3,3'-Dimethoxybenzidine
U092	124–40–3	Dimethylamine (I)
U092	124–40–3	Methanamine, -methyl-(I)
U093	60–11–7	Benzenamine, N,N-dimethyl-4-(phenylazo)-
U093	60–11–7	p-Dimethylaminoazobenzene
U094	57–97–6	Benz[a]anthracene, 7,12-dimethyl-
U094	57–97–6	7,12-Dimethylbenz[a]anthracene
U095	119–93–7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-
U095	119–93–7	3,3'-Dimethylbenzidine
U096	80–15–9	alpha,alpha-Dimethylbenzylhydroperoxide

		(R)
U096	80–15–9	Hydroperoxide, 1-methyl-1-phenylethyl-(R)
U097	79–44–7	Carbamic chloride, dimethyl-
U097	79–44–7	Dimethylcarbamoyl chloride
U098	57–14–7	1,1-Dimethylhydrazine
U098	57–14–7	Hydrazine, 1,1-dimethyl-
U099	540–73–8	1,2-Dimethylhydrazine
U099	540–73–8	Hydrazine, 1,2-dimethyl-
U101	105–67–9	2,4-Dimethylphenol
U101	105–67–9	Phenol, 2,4-dimethyl-
U102	131–11–3	1,2-Benzenedicarboxylic acid, dimethyl ester
U102	131–11–3	Dimethyl phthalate
U103	77–78–1	Dimethyl sulfate
U103	77–78–1	Sulfuric acid, dimethyl ester
U105	121–14–2	Benzene, 1-methyl-2,4-dinitro-
U105	121–14–2	2,4-Dinitrotoluene
U106	606–20–2	Benzene, 2-methyl-1,3-dinitro-
U106	606–20–2	2,6-Dinitrotoluene
U107	117–84–0	1,2-Benzenedicarboxylic acid, dioctyl ester
U107	117–84–0	Di-n-octyl phthalate
U108	123–91–1	1,4-Diethyleneoxide
U108	123–91–1	1,4-Dioxane
U109	122–66–7	1,2-Diphenylhydrazine
U109	122–66–7	Hydrazine, 1,2-diphenyl-
U110	142–84–7	Dipropylamine (I)
U110	142–84–7	1-Propanamine, N-propyl-(I)
U111	621–64–7	Di-n-propylnitrosamine
U111	621–64–7	1-Propanamine, N-nitroso-N-propyl-
U112	141–78–6	Acetic acid ethyl ester (I)
U112	141–78–6	Ethyl acetate (I)
U113	140–88–5	Ethyl acrylate (I)
U113	140–88–5	2-Propenoic acid, ethyl ester (I)
U114	[1]111–54–6	Carbamodithioic acid, 1,2-ethanediylbis-, salts & esters
U114	[1]111–54–6	Ethylenebisdithiocarbamic acid, salts & esters

U115	75–21–8	Ethylene oxide (I,T)
U115	75–21–8	Oxirane (I,T)
U116	96–45–7	Ethylenethiourea
U116	96–45–7	2-Imidazolidinethione
U117	60–29–7	Ethane, 1,1'-oxybis-(I)
U117	60–29–7	Ethyl ether (I)
U118	97–63–2	Ethyl methacrylate
U118	97–63–2	2-Propenoic acid, 2-methyl-, ethyl ester
U119	62–50–0	Ethyl methanesulfonate
U119	62–50–0	Methanesulfonic acid, ethyl ester
U120	206–44–0	Fluoranthene
U121	75–69–4	Methane, trichlorofluoro-
U121	75–69–4	Trichloromonofluoromethane
U122	50–00–0	Formaldehyde
U123	64–18–6	Formic acid (C,T)
U124	110–00–9	Furan (I)
U124	110–00–9	Furfuran (I)
U125	98–01–1	2-Furancarboxaldehyde (I)
U125	98–01–1	Furfural (I)
U126	765–34–4	Glycidylaldehyde
U126	765–34–4	Oxiranecarboxyaldehyde
U127	118–74–1	Benzene, hexachloro-
U127	118–74–1	Hexachlorobenzene
U128	87–68–3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U128	87–68–3	Hexachlorobutadiene
U129	58–89–9	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)-
U129	58–89–9	Lindane
U130	77–47–4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
U130	77–47–4	Hexachlorocyclopentadiene
U131	67–72–1	Ethane, hexachloro-
U131	67–72–1	Hexachloroethane
U132	70–30–4	Hexachlorophene
U132	70–30–4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-
U133	302–01–2	Hydrazine (R,T)
U134	7664–39–	Hydrofluoric acid (C,T)

	3	
U134	7664–39–3	Hydrogen fluoride (C,T)
U135	7783–06–4	Hydrogen sulfide
U135	7783–06–4	Hydrogen sulfide H_2S
U136	75–60–5	Arsinic acid, dimethyl-
U136	75–60–5	Cacodylic acid
U137	193–39–5	Indeno[1,2,3-cd]pyrene
U138	74–88–4	Methane, iodo-
U138	74–88–4	Methyl iodide
U140	78–83–1	Isobutyl alcohol (I,T)
U140	78–83–1	1-Propanol, 2-methyl- (I,T)
U141	120–58–1	1,3-Benzodioxole, 5-(1-propenyl)-
U141	120–58–1	Isosafrole
U142	143–50–0	Kepone
U142	143–50–0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-
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]]-
U143	303–34–4	Lasiocarpine
U144	301–04–2	Acetic acid, lead(2+) salt
U144	301–04–2	Lead acetate
U145	7446–27–7	Lead phosphate
U145	7446–27–7	Phosphoric acid, lead(2+) salt (2:3)
U146	1335–32–6	Lead, bis(acetato-O)tetrahydroxytri-
U146	1335–32–6	Lead subacetate
U147	108–31–6	2,5-Furandione
U147	108–31–6	Maleic anhydride
U148	123–33–1	Maleic hydrazide

U148	123–33–1	3,6-Pyridazinedione, 1,2-dihydro-
U149	109–77–3	Malononitrile
U149	109–77–3	Propanedinitrile
U150	148–82–3	Melphalan
U150	148–82–3	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-
U151	7439–97–6	Mercury
U152	126–98–7	Methacrylonitrile (I,T)
U152	126–98–7	2-Propenenitrile, 2-methyl- (I,T)
U153	74–93–1	Methanethiol (I,T)
U153	74–93–1	Thiomethanol (I,T)
U154	67–56–1	Methanol (I)
U154	67–56–1	Methyl alcohol (I)
U155	91–80–5	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-
U155	91–80–5	Methapyrilene
U156	79–22–1	Carbonochloridic acid, methyl ester (I,T)
U156	79–22–1	Methyl chlorocarbonate (I,T)
U157	56–49–5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
U157	56–49–5	3-Methylcholanthrene
U158	101–14–4	Benzenamine, 4,4'-methylenebis[2-chloro-
U158	101–14–4	4,4'-Methylenebis(2-chloroaniline)
U159	78–93–3	2-Butanone (I,T)
U159	78–93–3	Methyl ethyl ketone (MEK) (I,T)
U160	1338–23–4	2-Butanone, peroxide (R,T)
U160	1338–23–4	Methyl ethyl ketone peroxide (R,T)
U161	108–10–1	Methyl isobutyl ketone (I)
U161	108–10–1	4-Methyl-2-pentanone (I)
U161	108–10–1	Pentanol, 4-methyl-
U162	80–62–6	Methyl methacrylate (I,T)
U162	80–62–6	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U163	70–25–7	Guanidine, -methyl-N'-nitro-N-nitroso-
U163	70–25–7	MNNG

U164	56–04–2	Methylthiouracil
U164	56–04–2	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
U165	91–20–3	Naphthalene
U166	130–15–4	1,4-Naphthalenedione
U166	130–15–4	1,4-Naphthoquinone
U167	134–32–7	1-Naphthalenamine
U167	134–32–7	alpha-Naphthylamine
U168	91–59–8	2-Naphthalenamine
U168	91–59–8	beta-Naphthylamine
U169	98–95–3	Benzene, nitro-
U169	98–95–3	Nitrobenzene (I,T)
U170	100–02–7	p-Nitrophenol
U170	100–02–7	Phenol, 4-nitro-
U171	79–46–9	2-Nitropropane (I,T)
U171	79–46–9	Propane, 2-nitro- (I,T)
U172	924–16–3	1-Butanamine, N-butyl-N-nitroso-
U172	924–16–3	N-Nitrosodi-n-butylamine
U173	1116–54–7	Ethanol, 2,2'-(nitrosoimino)bis-
U173	1116–54–7	N-Nitrosodiethanolamine
U174	55–18–5	Ethanamine, -ethyl-N-nitroso-
U174	55–18–5	N-Nitrosodiethylamine
U176	759–73–9	N-Nitroso-N-ethylurea
U176	759–73–9	Urea, N-ethyl-N-nitroso-
U177	684–93–5	N-Nitroso-N-methylurea
U177	684–93–5	Urea, N-methyl-N-nitroso-
U178	615–53–2	Carbamic acid, methylnitroso-, ethyl ester
U178	615–53–2	N-Nitroso-N-methylurethane
U179	100–75–4	N-Nitrosopiperidine
U179	100–75–4	Piperidine, 1-nitroso-
U180	930–55–2	N-Nitrosopyrrolidine
U180	930–55–2	Pyrrolidine, 1-nitroso-
U181	99–55–8	Benzenamine, 2-methyl-5-nitro-
U181	99–55–8	5-Nitro-o-toluidine
U182	123–63–7	1,3,5-Trioxane, 2,4,6-trimethyl-

U182	123–63–7	Paraldehyde
U183	608–93–5	Benzene, pentachloro-
U183	608–93–5	Pentachlorobenzene
U184	76–01–7	Ethane, pentachloro-
U184	76–01–7	Pentachloroethane
U185	82–68–8	Benzene, pentachloronitro-
U185	82–68–8	Pentachloronitrobenzene (PCNB)
U186	504–60–9	1-Methylbutadiene (I)
U186	504–60–9	1,3-Pentadiene (I)
U187	62–44–2	Acetamide, -(4-ethoxyphenyl)-
U187	62–44–2	Phenacetin
U188	108–95–2	Phenol
U189	1314–80–3	Phosphorus sulfide (R)
U189	1314–80–3	Sulfur phosphide (R)
U190	85–44–9	1,3-Isobenzofurandione
U190	85–44–9	Phthalic anhydride
U191	109–06–8	2-Picoline
U191	109–06–8	Pyridine, 2-methyl-
U192	23950–58–5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-
U192	23950–58–5	Pronamide
U193	1120–71–4	1,2-Oxathiolane, 2,2-dioxide
U193	1120–71–4	1,3-Propane sultone
U194	107–10–8	1-Propanamine (I,T)
U194	107–10–8	n-Propylamine (I,T)
U196	110–86–1	Pyridine
U197	106–51–4	p-Benzoquinone
U197	106–51–4	2,5-Cyclohexadiene-1,4-dione
U200	50–55–5	Reserpine
U200	50–55–5	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester,(3beta,16beta,17alpha,18beta,20alpha)-

U201	108–46–3	1,3-Benzenediol
U201	108–46–3	Resorcinol
U202	181–07–2	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide, & salts
U202	181–07–2	Saccharin, & salts
U203	94–59–7	1,3-Benzodioxole, 5-(2-propenyl)-
U203	94–59–7	Safrole
U204	7783–00–8	Selenious acid
U204	7783–00–8	Selenium dioxide
U205	7488–56–4	Selenium sulfide
U205	7488–56–4	Selenium sulfide SeS_2 (R,T)
U206	18883–66–4	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-, D-
U206	18883–66–4	D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)-carbonyl]amino]-
U206	18883–66–4	Streptozotocin
U207	95–94–3	Benzene, 1,2,4,5-tetrachloro-
U207	95–94–3	1,2,4,5-Tetrachlorobenzene
U208	630–20–6	Ethane, 1,1,1,2-tetrachloro-
U208	630–20–6	1,1,1,2-Tetrachloroethane
U209	79–34–5	Ethane, 1,1,2,2-tetrachloro-
U209	79–34–5	1,1,2,2-Tetrachloroethane
U210	127–18–4	Ethene, tetrachloro-
U210	127–18–4	Tetrachloroethylene
U211	56–23–5	Carbon tetrachloride
U211	56–23–5	Methane, tetrachloro-
U213	109–99–9	Furan, tetrahydro-(I)
U213	109–99–9	Tetrahydrofuran (I)
U214	563–68–8	Acetic acid, thallium(1+) salt
U214	563–68–8	Thallium(I) acetate
U215	6533–73–9	Carbonic acid, dithallium(1+) salt
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	Nitric acid, thallium(1+) salt
U217	10102–45–1	Thallium(I) nitrate
U218	62–55–5	Ethanethioamide
U218	62–55–5	Thioacetamide
U219	62–56–6	Thiourea
U220	108–88–3	Benzene, methyl-
U220	108–88–3	Toluene
U221	25376–45–8	Benzenediamine, ar-methyl-
U221	25376–45–8	Toluenediamine
U222	636–21–5	Benzenamine, 2-methyl-, hydrochloride
U222	636–21–5	o-Toluidine hydrochloride
U223	26471–62–5	Benzene, 1,3-diisocyanatomethyl- (R,T)
U223	26471–62–5	Toluene diisocyanate (R,T)
U225	75–25–2	Bromoform
U225	75–25–2	Methane, tribromo-
U226	71–55–6	Ethane, 1,1,1-trichloro-
U226	71–55–6	Methyl chloroform
U226	71–55–6	1,1,1-Trichloroethane
U227	79–00–5	Ethane, 1,1,2-trichloro-
U227	79–00–5	1,1,2-Trichloroethane
U228	79–01–6	Ethene, trichloro-
U228	79–01–6	Trichloroethylene
U234	99–35–4	Benzene, 1,3,5-trinitro-
U234	99–35–4	1,3,5-Trinitrobenzene (R,T)
U235	126–72–7	1-Propanol, 2,3-dibromo-, phosphate (3:1)
U235	126–72–7	Tris(2,3-dibromopropyl) phosphate
U236	72–57–1	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethyl[1,1'-biphenyl]-4,4'-diyl)bis(azo)bis[5-amino-4-hydroxy]-,

		tetrasodium salt
U236	72–57–1	Trypan blue
U237	66–75–1	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-
U237	66–75–1	Uracil mustard
U238	51–79–6	Carbamic acid, ethyl ester
U238	51–79–6	Ethyl carbamate (urethane)
U239	1330–20–7	Benzene, dimethyl- (I,T)
U239	1330–20–7	Xylene (I)
U240	[1]94–75–7	Acetic acid, (2,4-dichlorophenoxy)-, salts & esters
U240	[1]94–75–7	2,4-D, salts & esters
U243	1888–71–7	Hexachloropropene
U243	1888–71–7	1-Propene, 1,1,2,3,3,3-hexachloro-
U244	137–26–8	Thioperoxydicarbonic diamide $[(H_2N)C(S)]_2S_2$, tetramethyl-
U244	137–26–8	Thiram
U246	506–68–3	Cyanogen bromide (CN)Br
U247	72–43–5	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4- methoxy-
U247	72–43–5	Methoxychlor
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
U248	[1]81–81–2	Warfarin, & salts, when present at concentrations of 0.3% or less
U249	1314–84–7	Zinc phosphide Zn_3P_2, when present at concentrations of 10% or less
U271	17804–35–2	Benomyl
U271	17804–35–2	Carbamic acid, [1-[(butylamino)carbonyl]-1H-benzimidazol-2-yl]-, methyl ester
U278	22781–23–3	Bendiocarb
U278	22781–23–3	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate

U279	63–25–2	Carbaryl
U279	63–25–2	1-Naphthalenol, methylcarbamate
U280	101–27–9	Barban
U280	101–27–9	Carbamic acid, (3-chlorophenyl)-, 4-chloro-2-butynyl ester
U328	95–53–4	Benzenamine, 2-methyl-
U328	95–53–4	o-Toluidine
U353	106–49–0	Benzenamine, 4-methyl-
U353	106–49–0	p-Toluidine
U359	110–80–5	Ethanol, 2-ethoxy-
U359	110–80–5	Ethylene glycol monoethyl ether
U364	22961–82–6	Bendiocarb phenol
U364	22961–82–6	1,3-Benzodioxol-4-ol, 2,2-dimethyl-,
U367	1563–38–8	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-
U367	1563–38–8	Carbofuran phenol
U372	10605–21–7	Carbamic acid, 1H-benzimidazol-2-yl, methyl ester
U372	10605–21–7	Carbendazim
U373	122–42–9	Carbamic acid, phenyl-, 1-methylethyl ester
U373	122–42–9	Propham
U387	52888–80–9	Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester
U387	52888–80–9	Prosulfocarb
U389	2303–17–5	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3,3-trichloro-2-propenyl) ester
U389	2303–17–5	Triallate
U394	30558–43–1	A2213
U394	30558–43–1	Ethanimidothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-, methyl ester
U395	5952–26–1	Diethylene glycol, dicarbamate

U395	5952–26–1	Ethanol, 2,2'-oxybis-, dicarbamate
U404	121–44–8	Ethanamine, N,N-diethyl-
U404	121–44–8	Triethylamine
U409	23564–05–8	Carbamic acid, [1,2-phenylenebis (iminocarbonothioyl)]bis-, dimethyl ester
U409	23564–05–8	Thiophanate-methyl
U410	59669–26–0	Ethanimidothioic acid, N,N'-[thiobis[(methylimino)carbonyloxy]]bis-, dimethyl ester
U410	59669–26–0	Thiodicarb
U411	114–26–1	Phenol, 2-(1-methylethoxy)-, methylcarbamate
U411	114–26–1	Propoxur
See F027	93–76–5	Acetic acid, (2,4,5-trichlorophenoxy)-
See F027	87–86–5	Pentachlorophenol
See F027	87–86–5	Phenol, pentachloro-
See F027	58–90–2	Phenol, 2,3,4,6-tetrachloro-
See F027	95–95–4	Phenol, 2,4,5-trichloro-
See F027	88–06–2	Phenol, 2,4,6-trichloro-
See F027	93–72–1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-
See F027	93–72–1	Silvex (2,4,5-TP)
See F027	93–76–5	2,4,5-T
See F027	58–90–2	2,3,4,6-Tetrachlorophenol
See F027	95–95–4	2,4,5-Trichlorophenol
See F027	88–06–2	2,4,6-Trichlorophenol

APPENDIX E. Toxicity Characteristic Constituents and Regulatory Levels

EPA HW No. [1]	Contaminant	CAS No. [2]	Regulatory Level (mg/L)
D004	Arsenic	7440–38–2	5.0
D005	Barium	7440–39–3	100.0
D018	Benzene	71–43–2	0.5
D006	Cadmium	7440–43–9	1.0
D019	Carbon tetrachloride	56–23–5	0.5
D020	Chlordane	57–74–9	0.03
D021	Chlorobenzene	108–90–7	100.0
D022	Chloroform	67–66–3	6.0
D007	Chromium	7440–47–3	5.0
D023	o-Cresol	95–48–7	[4]200.0
D024	m-Cresol	108–39–4	[4]200.0
D025	p-Cresol	106–44–5	[4]200.0
D026	Cresol		[4]200.0
D016	2,4-D	94–75–7	10.0
D027	1,4-Dichlorobenzene	106–46–7	7.5
D028	1,2-Dichloroethane	107–06–2	0.5
D029	1,1-Dichloroethylene	75–35–4	0.7
D030	2,4-Dinitrotoluene	121–14–2	[3]0.13
D012	Endrin	72–20–8	0.02
D031	Heptachlor (and its epoxide)	76–44–8	0.008
D032	Hexachlorobenzene	118–74–1	[3]0.13
D033	Hexachlorobutadiene	87–68–3	0.5
D034	Hexachloroethane	67–72–1	3.0
D008	Lead	7439–92–1	5.0
D013	Lindane	58–89–9	0.4
D009	Mercury	7439–97–6	0.2
D014	Methoxychlor	72–43–5	10.0
D035	Methyl ethyl ketone	78–93–3	200.0
D036	Nitrobenzene	98–95–3	2.0
D037	Pentrachlorophenol	87–86–5	100.0
D038	Pyridine	110–86–1	[3]5.0

D010	Selenium	7782–49–2	1.0
D011	Silver	7440–22–4	5.0
D039	Tetrachloroethylene	127–18–4	0.7
D015	Toxaphene	8001–35–2	0.5
D040	Trichloroethylene	79–01–6	0.5
D041	2,4,5-Trichlorophenol	95–95–4	400.0
D042	2,4,6-Trichlorophenol	88–06–2	2.0
D017	2,4,5-TP (Silvex)	93–72–1	1.0
D043	Vinyl chloride	75–01–4	0.2

OMB#: 2050-0028 Expires 06/30/2009

SEND COMPLETED FORM TO: The Appropriate State or EPA Regional Office.	United States Environmental Protection Agency **RCRA SUBTITLE C SITE IDENTIFICATION FORM**	
1. Reason for Submittal (See instructions on page 13.) MARK ALL BOX(ES) THAT APPLY	**Reason for Submittal:** ❑ To provide Initial Notification of Regulated Waste Activity (to obtain an EPA ID Number for hazardous waste, universal waste, or used oil activities) ❑ To provide Subsequent Notification of Regulated Waste Activity (to update site identification information) ❑ As a component of a First RCRA Hazardous Waste Part A Permit Application ❑ As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment #_____) ❑ As a component of the Hazardous Waste Report	
2. Site EPA ID Number (page 14)	**EPA ID Number** |___|___|___|___|___|___|___|___|___|___|___|___|	
3. Site Name (page 14)	**Name:**	
4. Site Location Information (page 14)	**Street Address:**	
	City, Town, or Village:	**State:**
	County Name:	**Zip Code:**
5. Site Land Type (page 14)	**Site Land Type:** ❑ Private ❑ County ❑ District ❑ Federal ❑ Indian ❑ Municipal ❑ State ❑ Other	
6. North American Industry Classification System (NAICS) Code(s) for the Site (page 14)	**A.** |___|___|___|___|___|___|	**B.** |___|___|___|___|___|___|
	C. |___|___|___|___|___|___|	**D.** |___|___|___|___|___|___|
7. Site Mailing Address (page 15)	**Street or P. O. Box:**	
	City, Town, or Village:	
	State:	
	Country:	**Zip Code:**
8. Site Contact Person (page 15)	**First Name:** **MI:**	**Last Name:**
	Phone Number: **Extension:**	**Email address:**
9. Operator and Legal Owner of the Site (pages 15 and 16)	**A. Name of Site's Operator:**	**Date Became Operator (mm/dd/yyyy):**
	Operator Type: ❑ Private ❑ County ❑ District ❑ Federal ❑ Indian ❑ Municipal ❑ State ❑ Other	
	B. Name of Site's Legal Owner:	**Date Became Owner (mm/dd/yyyy):**
	Owner Type: ❑ Private ❑ County ❑ District ❑ Federal ❑ Indian ❑ Municipal ❑ State ❑ Other	

EPA ID NO: |___|___|___|___|___|___|___|___|___|___|___|___|

OMB#: 2050-0028 Expires 06/30/2009

9. Legal Owner (Continued) Address	**Street or P. O. Box:**	
	City, Town, or Village:	
	State:	
	Country:	**Zip Code:**

10. Type of Regulated Waste Activity
Mark "Yes" or "No" for all activities; complete any additional boxes as instructed. (See instructions on pages 17 to 20.)

A. Hazardous Waste Activities
Complete all parts for 1 through 6.

Y ☐ N ☐ **1. Generator of Hazardous Waste**
If "Yes", choose only one of the following - a, b, or c.

☐ a. LQG: Greater than 1,000 kg/mo (2,200 lbs./mo.) of non-acute hazardous waste; or

☐ b. SQG: 100 to 1,000 kg/mo (220 - 2,200 lbs./mo.) of non-acute hazardous waste; or

☐ c. CESQG: Less than 100 kg/mo (220 lbs./mo.) of non-acute hazardous waste

In addition, indicate other generator activities.

Y ☐ N ☐ d. United States Importer of Hazardous Waste

Y ☐ N ☐ e. Mixed Waste (hazardous and radioactive) Generator

Y ☐ N ☐ **2. Transporter of Hazardous Waste**

Y ☐ N ☐ **3. Treater, Storer, or Disposer of Hazardous Waste (at your site)** Note: A hazardous waste permit is required for this activity.

Y ☐ N ☐ **4. Recycler of Hazardous Waste (at your site)**

Y ☐ N ☐ **5. Exempt Boiler and/or Industrial Furnace**
If "Yes", mark each that applies.
☐ a. Small Quantity On-site Burner Exemption
☐ b. Smelting, Melting, and Refining

Y ☐ N ☐ **6. Underground Injection Control**

B. Universal Waste Activities

Y ☐ N ☐ **1. Large Quantity Handler of Universal Waste (accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal mark all boxes that apply:**

	Manage
a. Batteries	☐
b. Pesticides	☐
c. Mercury containing equipment	☐
d. Lamps	☐
e. Other (specify) _____	☐
f. Other (specify) _____	☐
g. Other (specify) _____	☐

Y ☐ N ☐ **2. Destination Facility for Universal Waste**
Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities
Mark all boxes that apply.

Y ☐ N ☐ **1. Used Oil Transporter**
If "Yes", mark each that applies.
☐ a. Transporter
☐ b. Transfer Facility

Y ☐ N ☐ **2. Used Oil Processor and/or Re-refiner**
If "Yes", mark each that applies.
☐ a. Processor
☐ b. Re-refiner

Y ☐ N ☐ **3. Off-Specification Used Oil Burner**

Y ☐ N ☐ **4. Used Oil Fuel Marketer**
If "Yes", mark each that applies.
☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

11. Description of Hazardous Wastes (See instructions on page 21.)

A. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes. Please list the waste codes of the State-regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed for waste codes.

12. Comments (See instructions on page 21.)

13. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
For the RCRA Hazardous Waste Part A Permit Application, all operator(s) and owner(s) must sign (see 40 CFR 270.10 (b) and 270.11).
(See instructions on page 21.)

Signature of operator, owner, or an authorized representative	Name and Official Title (type or print)	Date Signed (mm/dd/yyyy)

Appendix G. EPA form 8700-22 (Revised 9/1998)

Please print or type (Form designed for use on elite (12 - pitch) typewriter)

Form Approved. OMB No. 2050 - 0039 Expires 9 - 30 - 91

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No. | Manifest Document No.

2. Page 1 of

Information in the shaded areas is not required by Federal law

GENERATOR

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name | 6. US EPA ID Number

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name | 8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address | 10. US EPA ID Number

G. State Facility's ID

H. Facility's Phone

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.					
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name | Signature | Month Day Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name | Signature | Month Day Year

EPA Form 8700 - 22 (Rev. 9 - 88) Previous editions are obsolete.

APPENDIX H. EPA FORM 8700-13A/B (Revised 10/2005)

OMB#: 2050-0024 Expires 10/31/2007

SEND COMPLETED FORM TO: The Appropriate State or EPA Regional Office.	United States Environmental Protection Agency **RCRA SUBTITLE C SITE IDENTIFICATION FORM**	
1. Reason for Submittal (See instructions on page 9) MARK ALL BOX(ES) THAT APPLY	**Reason for Submittal:** ❑ To provide Initial Notification of Regulated Waste Activity (to obtain an EPA ID Number for hazardous waste, universal waste, or used oil activities) ❑ To provide Subsequent Notification of Regulated Waste Activity (to update site identification information) ❑ As a component of a First RCRA Hazardous Waste Part A Permit Application ❑ As a component of a Revised RCRA Hazardous Waste Part A Permit Application (Amendment #_____) ❑ As a component of the Hazardous Waste Report	
2. Site EPA ID Number (page 10)	**EPA ID Number**	
3. Site Name (page 10)	**Name:**	
4. Site Location Information (page 10)	**Street Address:**	
	City, Town, or Village:	**State:**
	County Name:	**Zip Code:**
5. Site Land Type (page 10)	**Site Land Type:** ❑ Private ❑ County ❑ District ❑ Federal ❑ Indian ❑ Municipal ❑ State ❑ Other	
6. North American Industry Classification System (NAICS) Code(s) for the Site (page 10)	**A.**	**B.**
	C.	**D.**
7. Site Mailing Address (page 11)	**Street or P. O. Box:**	
	City, Town, or Village:	
	State:	
	Country:	**Zip Code:**
8. Site Contact Person (page 11)	**First Name:** **MI:**	**Last Name:**
	Phone Number: **Extension:**	**E-mail address:**
9. Operator and Legal Owner of the Site (pages 11 and 12)	**A. Name of Site's Operator:**	**Date Became Operator (mm/dd/yyyy):**
	Operator Type: ❑ Private ❑ County ❑ District ❑ Federal ❑ Indian ❑ Municipal ❑ State ❑ Other	
	B. Name of Site's Legal Owner:	**Date Became Owner (mm/dd/yyyy):**
	Owner Type: ❑ Private ❑ County ❑ District ❑ Federal ❑ Indian ❑ Municipal ❑ State ❑ Other	

EPA ID NO: ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐

OMB#: 2050-0024 Expires 10/31/2007

9. Legal Owner (Continued) Address	Street or P. O. Box:	
	City, Town, or Village:	
	State:	
	Country:	Zip Code:

10. Type of Regulated Waste Activity
Mark "Yes" or "No" for all activities; complete any additional boxes as instructed. (See instructions on pages 13 to 16.)

A. Hazardous Waste Activities
Complete all parts for 1 through 6.

Y ☐ N ☐ **1. Generator of Hazardous Waste**
If "Yes", choose only one of the following - a, b, or c.

☐ a. LQG: Greater than 1,000 kg/mo (2,200 lbs./mo.) of non-acute hazardous waste; or

☐ b. SQG: 100 to 1,000 kg/mo (220 - 2,200 lbs./mo.) of non-acute hazardous waste; or

☐ c. CESQG: Less than 100 kg/mo (220 lbs./mo.) of non-acute hazardous waste

In addition, indicate other generator activities.

Y ☐ N ☐ d. United States Importer of Hazardous Waste

Y ☐ N ☐ e. Mixed Waste (hazardous and radioactive) Generator

Y ☐ N ☐ **2. Transporter of Hazardous Waste**

Y ☐ N ☐ **3. Treater, Storer, or Disposer of Hazardous Waste (at your site)** Note: A hazardous waste permit is required for this activity.

Y ☐ N ☐ **4. Recycler of Hazardous Waste (at your site)**

Y ☐ N ☐ **5. Exempt Boiler and/or Industrial Furnace**
If "Yes", mark each that applies.
☐ a. Small Quantity On-site Burner Exemption
☐ b. Smelting, Melting, and Refining Furnace Exemption

Y ☐ N ☐ **6. Underground Injection Control**

B. Universal Waste Activities

Y ☐ N ☐ **1. Large Quantity Handler of Universal Waste (accumulate 5,000 kg or more) [refer to your State regulations to determine what is regulated]. Indicate types of universal waste generated and/or accumulated at your site. If "Yes", mark all boxes that apply:**

	Generate	Accumulate
a. Batteries	☐	☐
b. Pesticides	☐	☐
c. Thermostats	☐	☐
d. Lamps	☐	☐
e. Other (specify) _____	☐	☐
f. Other (specify) _____	☐	☐
g. Other (specify) _____	☐	☐

Y ☐ N ☐ **2. Destination Facility for Universal Waste**
Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities
Mark all boxes that apply.

Y ☐ N ☐ **1. Used Oil Transporter**
If "Yes", mark each that applies.
☐ a. Transporter
☐ b. Transfer Facility

Y ☐ N ☐ **2. Used Oil Processor and/or Re-refiner**
If "Yes", mark each that applies.
☐ a. Processor
☐ b. Re-refiner

Y ☐ N ☐ **3. Off-Specification Used Oil Burner**

Y ☐ N ☐ **4. Used Oil Fuel Marketer**
If "Yes", mark each that applies.
☐ a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

11. Description of Hazardous Wastes (See instructions on page 17.)

A. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if more spaces are needed.

B. Waste Codes for State-Regulated (i.e., non-Federal) Hazardous Wastes. Please list the waste codes of the State-regulated hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed for waste codes.

12. Comments (See instructions on page 17.)

13. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.
(See instructions on page 17.)

Signature of operator, owner, or an authorized representative	Name and Official Title (type or print)	Date Signed (mm/dd/yyyy)

OMB#: 2050-0024 Expires 10/31/2007

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME: _____

EPA ID NO: |_|_|_| |_|_|_| |_|_|_| |_|_|_|

FORM GM

U.S. ENVIRONMENTAL PROTECTION AGENCY

2005 Hazardous Waste Report

WASTE GENERATION AND MANAGEMENT

Instructions: Please see the detailed instructions on pages 18 to 26 of this booklet before completing this form.

Sec. 1 A. Waste description

B. EPA hazardous waste code |_|_|_|_| |_|_|_|_| |_|_|_|_| |_|_|_|_| |_|_|_|_|

C. State hazardous waste code |_|_|_|_|_|_| |_|_|_|_|_|_|_| |_|_|_|_|_|_|_|

D. Source code |G|_|_|

Management Method code for Source code G25 |H|_|_|_|

E. Form code |W|_|_|_|

F. Quantity generated in 2005 |_|_|_|_|_|_|_|_|_|.|_|

G. UOM |_|

Density |_|_|.|_|_|

□ lbs/gal □ sg

Sec. 2 Was any of this waste managed on site? (pages 24 and 25)

□ 1 Yes (CONTINUE TO ON-SITE PROCESS SYSTEM 1)
□ 2 No (SKIP TO SEC. 3)

ON-SITE PROCESS SYSTEM 1

On-site Management Method code |H|_|_|_|

Quantity treated, disposed, or recycled on site in 2005 |_|_|_|_|_|_|_|_|_|.|_|

ON-SITE PROCESS SYSTEM 2

On-site Management Method code |H|_|_|_|

Quantity treated, disposed, or recycled on site in 2005 |_|_|_|_|_|_|_|_|_|.|_|

Sec. 3 A. Was any of this waste shipped off site in 2005 for treatment, disposal, or recycling? (pages 25 and 26)
□ 1 Yes (CONTINUE TO BOX B) □ 2 No (FORM IS COMPLETE)

	B. EPA ID No. of facility to which waste was shipped	C. Off-site Management Method code Shipped to	D. Total quantity shipped in 2005
Site 1	|_|_|_| |_|_|_| |_|_|_| |_|_|_|	|H|_|_|_|	|_|_|_|_|_|_|_|_|_|.|_|
Site 2	|_|_|_| |_|_|_| |_|_|_| |_|_|_|	|H|_|_|_|	|_|_|_|_|_|_|_|_|_|.|_|
Site 3	|_|_|_| |_|_|_| |_|_|_| |_|_|_|	|H|_|_|_|	|_|_|_|_|_|_|_|_|_|.|_|

Comments:

OMB#: 2050-0024 Expires 10/31/2007

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME: _____

EPA ID NO: |_|_|_| |_|_|_| |_|_|_| |_|_|_|

FORM WR

U.S. ENVIRONMENTAL PROTECTION AGENCY

2005 Hazardous Waste Report

WASTE RECEIVED FROM OFF SITE

Instructions: Please see the detailed instructions on pages 27 to 30 of this booklet before completing this form.

Waste 1	A. Description of hazardous waste	B. EPA hazardous waste code	C. State hazardous waste code
		|_|_|_|_| |_|_|_|_| |_|_|_|_| |_|_|_|_|	|_|_|_|_|_|_| |_|_|_|_|_|_|
D. Off-site handler EPA ID number		E. Quantity received in 2005	F. UOM Density
|_|_|_| |_|_|_| |_|_|_| |_|_|_|		|_|_|_|_|_|_|_|_|_|_|_|. |_|	|_| |_|_|_|. |_|_| □ 1 lbs/gal □ 2 sg
G. Form code		H. Management Method code	
|W|_|_|_|		|H|_|_|_|	

Waste 2	A. Description of hazardous waste	B. EPA hazardous waste code	C. State hazardous waste code
		|_|_|_|_| |_|_|_|_| |_|_|_|_| |_|_|_|_|	|_|_|_|_|_|_| |_|_|_|_|_|_|
D. Off-site handler EPA ID number □ Mark if same as in Waste 1		E. Quantity received in 2005	F. UOM Density
|_|_|_| |_|_|_| |_|_|_| |_|_|_|		|_|_|_|_|_|_|_|_|_|_|_|. |_|	|_| |_|_|_|. |_|_| □ 1 lbs/gal □ 2 sg
G. Form code		H. Management Method code	
|W|_|_|_|		|H|_|_|_|	

Waste 3	A. Description of hazardous waste	B. EPA hazardous waste code	C. State hazardous waste code
		|_|_|_|_| |_|_|_|_| |_|_|_|_| |_|_|_|_|	|_|_|_|_|_|_| |_|_|_|_|_|_|
D. Off-site handler EPA ID number □ Mark if same as in Waste 2		E. Quantity received in 2005	F. UOM Density
|_|_|_| |_|_|_| |_|_|_| |_|_|_|		|_|_|_|_|_|_|_|_|_|_|_|. |_|	|_| |_|_|_|. |_|_| □ 1 lbs/gal □ 2 sg
G. Form code		H. Management Method code	
|W|_|_|_|		|H|_|_|_|	

Comments:

OMB#: 2050-0024 Expires 10/31/2007

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME: _____

EPA ID NO: |_|_|_| |_|_|_| |_|_|_|_| |_|_|_|_|

U.S. ENVIRONMENTAL PROTECTION AGENCY

2005 Hazardous Waste Report

FORM OI

OFF-SITE IDENTIFICATION

Instructions: Please read the detailed instructions on the reverse side before completing this form.

Site 1

A. EPA ID No. of off-site installation or transporter |_|_|_| |_|_|_| |_|_|_|_| |_|_|_|_|

B. Name of off-site installation or transporter

C. Handler type (MARK ALL THAT APPLY)
- ☐ Generator
- ☐ Transporter
- ☐ TSDR facility

D. Address of off-site installation
Street _____
City _____
State |_|_| Zip |_|_|_|_|-|_|_|_|_|

Site 2

A. EPA ID No. of off-site installation or transporter |_|_|_| |_|_|_| |_|_|_|_| |_|_|_|_|

B. Name of off-site installation or transporter

C. Handler type (MARK ALL THAT APPLY)
- ☐ Generator
- ☐ Transporter
- ☐ TSDR facility

D. Address of off-site installation
Street _____
City _____
State |_|_| Zip |_|_|_|_|-|_|_|_|_|

Site 3

A. EPA ID No. of off-site installation or transporter |_|_|_| |_|_|_| |_|_|_|_| |_|_|_|_|

B. Name of off-site installation or transporter

C. Handler type (MARK ALL THAT APPLY)
- ☐ Generator
- ☐ Transporter
- ☐ TSDR facility

D. Address of off-site installation
Street _____
City _____
State |_|_| Zip |_|_|_|_|-|_|_|_|_|

Site 4

A. EPA ID No. of off-site installation or transporter |_|_|_| |_|_|_| |_|_|_|_| |_|_|_|_|

B. Name of off-site installation or transporter

C. Handler type (MARK ALL THAT APPLY)
- ☐ Generator
- ☐ Transporter
- ☐ TSDR facility

D. Address of off-site installation
Street _____
City _____
State |_|_| Zip |_|_|_|_|-|_|_|_|_|

Comments:

Worksheet 1 Fill in and post this information next to your telephone.

EMERGENCY RESPONSE INFORMATION

Emergency Coordinator

Name: _____

_____

Telephone: _____

_____

_____

Fire Extinguisher

Location(s): _____

_____

_____

_____

Spill-Control Materials

Location(s): _____

_____

_____

Fire Alarm (if present)

Location(s): _____

_____

_____

Fire Department

Telephone: _____

Worksheet 2 Fill in and post this information next to your telephone. Make sure all employees read and are familiar with its contents.

EMERGENCY RESPONSE PROCEDURES

In the event of a spill:

Contain the flow of hazardous waste to the extent possible, and as soon as is possible, clean up the hazardous waste and any contaminated materials or soil.

In the event of a fire:

Call the fire department and, if safe, attempt to extinguish the fire using a fire extinguisher.

In the event of a fire, explosion, or other release that could threaten human health outside the facility, or if you know that the spill has reached surface water:

Call the National Response Center at its 24-hour number (800 424-8802). Provide the following information:

Our company name:

_____

_____

Our address:

_____

_____

Our U.S. EPA identification number:

_____

Date of accident _____

Time of accident _____

Type of accident (e.g., spill or fire) _____

Quantity of hazardous waste involved _____

Extent of injuries, if any _____

Estimated quantity and disposition of recovered materials, if any

_____

Appendix J. Federal EPA and state contact information

Region 1 (Conn., Mass., Maine, N.H., R.I., Vt.)

Environmental Protection Agency
1 Congress St. Suite 1100
Boston, MA 02114-2023
http://www.epa.gov/region01/
Phone: (617) 918-1111
Fax: (617) 918-1809
Toll free within Region 1: (888) 372-7341

Region 2 (N.J., N.Y., P.R., V.I.)

Environmental Protection Agency
290 Broadway
New York, NY 10007-1866
http://www.epa.gov/region02/
Phone: (212) 637-3000
Fax: (212) 637-3526

Region 3 (D.C., Del., Md., Pa., Va., W.Va.)

Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029
http://www.epa.gov/region03/
Phone: (215) 814-5000
Fax: (215) 814-5103
Toll free: (800) 438-2474
Email: r3public@epa.gov

Region 4 (Ala., Fla., Ga., Ky., Miss., N.C., S.C., Tenn.)

Environmental Protection Agency
Atlanta Federal Center
61 Forsyth St., SW
Atlanta, GA 30303-3104
http://www.epa.gov/region04/
Phone: (404) 562-9900
Fax: (404) 562-8174
Toll free: (800) 241-1754

Region 5 (Ill., Ind., Mich., Minn., Ohio, Wis.)

Environmental Protection Agency
77 West Jackson Blvd.
Chicago, IL 60604-3507
http://www.epa.gov/region5/
Phone: (312) 353-2000
Fax: (312) 353-4135
Toll free within Region 5: (800) 621-8431

Region 6 (Ariz., La., N.M., Okla., Tex.)

Environmental Protection Agency
Fountain Place 12th Floor, Suite 1200
1445 Ross Ave.
Dallas, TX 75202-2733
http://www.epa.gov/region06/
Phone: (214) 665-2200
Fax: (214) 665-7113
Toll free within Region 6: (800) 887-6063

Region 7 (Iowa, Kan., Mo., Neb.)

Environmental Protection Agency
901 North 5th St.
Kansas City, KS 66101
http://www.epa.gov/region07/
Phone: (913) 551-7003
Toll free: (800) 223-0425

Region 8 (Colo., Mont., N.D., S.D., Utah, Wyo.)

Environmental Protection Agency
999 18th St., Suite 500
Denver, CO 80202-2466
http://www.epa.gov/region08/
Phone: (303) 312-6312
Fax: (303) 312-6339
Toll free: (800) 227-8917
Email: r8eisc@epa.gov

Region 9 (Ariz., Calif., Haw., Nev.)

Environmental Protection Agency
75 Hawthorne St.
San Francisco, CA 94105
http://www.epa.gov/region09/
Phone: (415) 947-8000
(866) EPA-WEST (toll free in Region 9)
Fax: (415) 947-3553
Email: r9.info@epa.gov

Region 10 (Ark., Ida., Ore., Wash.)

Environmental Protection Agency
1200 Sixth Ave.
Seattle, WA 98101
http://www.epa.gov/region10/
Phone: (206) 553-1200
Fax: (206) 553-2955
Toll free: (800) 424-4372

State offices for hazardous waste regulation

Alabama Department of Environmental Management
1400 Coliseum Blvd.,
Montgomery, AL 36110-2059
(334) 271-7700

Alaska Department of Environmental Conservation
555 Cordova St.
Anchorage, AK 99501-2617
(907) 269-7802

Arizona Department of Environmental Quality
1110 West Washington St.
Phoenix, AZ 85007
(602) 771-4673

Arkansas Department of Environmental Quality
8001 National Drive
Little Rock, AR 72209
(501) 682-0744

California Department of Toxic Substances Control
1001 I Street
Sacramento, CA 95814-2828
(800) 728-6942

Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80246-1530
(888) 569-1831

Connecticut Department of Environmental Protection
79 Elm St.
Hartford, CT 06106-5127
(888) 424-4193

Delaware Department of Natural Resources and Environmental Control
89 Kings Highway
Dover, DE 19901
(302) 739-9403

District of Columbia Department of Health
51 N St., NE
Washington, DC 20002
(202) 535-2500

Florida Department of Environmental Protection
3900 Commonwealth Bivd. M.S. 49
Tallahassee, FL 32399
(850) 245-2118

Georgia Environmental Protection Division
2 Martin Luther King Jr. Drive
Suite 1152, East Tower
Atlanta, GA 30334
(888) 373-5947

Hawaii Department of Land and Natural Resources
Kalanimoku Building
1151 Punchbowl St.
Honolulu, HI 96813
(808) 587-0320

Idaho Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706
(208) 373-0502

Illinois Environmental Protection Agency
1021 North Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276
(217) 782-3397

Indiana Department of Environmental Management
100 N. Senate Ave.
Mail Code 65-45
Indianapolis, IN 46204-2251
(800) 451-6027

Iowa Department of Natural Resources
502 E. 9th Street.
Des Moines, IA 50319-0034
(515) 281-5918

Kansas Department of Health and Environment
Curtis State Office Building
1000 SW Jackson
Topeka, KS 66612
(785) 296-1500

Kentucky Department for Environmental Protection
14 Reilly Road
Frankfort, KY 40601
(502) 564-6716

Louisiana Department of Environmental Quality
602 N. Fifth St.
Baton Rouge, LA 70802
(225) 219-3462

Maine Department of Environmental Protection
17 State House Station
Augusta, ME 04333-0017
(800) 452-1942

Maryland Department of the Environment
1800 Washington Blvd.
Baltimore, MD 21230
(410) 537-3000

Massachusetts Department of Environmental Protection
One Winter St.
Boston, MA 02108
(617) 292-5500

Michigan Department of Environmental Quality
525 West Allegan St.
P.O. Box 30473
Lansing, MI 48909-7973
(517) 373-7917

Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155-4194
(800) 247-0015

Mississippi Department of Environmental Quality
2380 Highway 80 West
Jackson, MS 39204
(888) 786-0661

Missouri Department of Natural Resources
Division of Environmental Quality
P. O. Box 176
Jefferson City, MO 65102
(800) 361-4827

Montana Department of Environmental Quality
1520 E. Sixth Ave.
P.O. Box 200901
Helena, MT 59620-0901
(406) 444-2544

Nebraska Department of Environmental Quality
1200 "N" St., Suite 400
P.O. Box 98922
Lincoln, NE 68509
(402) 471-2186

Nevada Division of Environmental Protection
901 South Stewart St., Suite 4001
Carson City, NV 89701–5249
(775) 687–4670

New Hampshire Department of Environmental Services
29 Hazen Drive
P.O. Box 95
Concord, NH 03302-0095
(603) 271-3503

New Jersey Department of Environmental Protection
P.O. Box 414
401 East State Street.
Trenton, NJ 08625
(609) 984-6880

New Mexico Environment Department
1190 St. Francis Dr.
Suite N4050
Santa Fe, NM 87505
(800) 219-6157

New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7251
(518) 402-8612

North Carolina Department of Environment and Natural Resources
1601 Mail Service Center
Raleigh, NC 27699-1601
(919) 733-4984

North Dakota Department of Health
918 East Divide Ave., Floor 3
Bismarck, ND 58501-1947
(701) 328-5166

Ohio Environmental Protection Agency
122 S. Front Street.
Columbus, OH 43215
(614) 644-3020

Oklahoma Department of Environmental Quality
707 North Robinson
Oklahoma City, OK 73102
(405) 702-1000

Oregon Department of Environmental Quality
811 SW Sixth Ave.
Portland, OR 97204-1390
(503) 229-5696

Pennsylvania Department of Environmental Protection
400 Market St.
Harrisburg, PA 17101
(717) 783-2300

Rhode Island Department of Environmental Management
235 Promenade St.
Providence, RI 02908-5767
(401) 222-6800

South Carolina Department of Health and Environmental Control
2600 Bull St.
Columbia, SC 29201
(803) 896-8986

South Dakota Department of Environment and Natural Resources
523 E Capitol
Pierre, SD 57501
(605) 773-3151

Tennessee Department of Environment and Conservation
5th Floor, L&C Tower
401 Church Street.
Nashville, TN 37243-1535
(615) 532-0780

Texas Commission on Environmental Quality
12100 Park 35 Circle
Austin, TX 78753
(512) 239-1000

Utah Department of Environmental Quality
288 North 1460 West
4th Floor
Salt Lake City, UT
(801) 538-6170

Vermont Agency of Natural Resources
103 South Main St.
Center Building
Waterbury, VT 05671-0301
(802) 241-3600

Virginia Department of Environmental Quality
629 East Main St.
P.O. Box 1105
Richmond, VA 23218
(804) 698-4000

Washington State Department of Ecology
300 Desmond Dr.
Lacey, WA 98503
(360) 407-7160

West Virginia Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304
(304) 926-0499

Wisconsin Department of Natural Resources
101 South Webster St.
Madison, WI 53707-7921
(608) 266-2111

Wyoming Department of Environmental Quality
122 West 25th St.
Herschler Building
Cheyenne, WY 82002
(307) 777-7752

Appendix K. State spill-reporting hotline telephone numbers

Alabama
(800) 843-0699

Alaska
(800) 478-9300

Arizona
(602) 257-2330

Arkansas
(800) 322-4012

California
(800) 852-7550

Colorado
(303) 293-1788

Connecticut
(860) 424-3338

Delaware
(800) 662-8802

Florida
(800) 320-0519

Georgia
(800) 879-4362

Hawaii
(808) 586-4249

Idaho
(800) 632-8000

Illinois
(800) 782-7860

Indiana
(888) 233-7745

Iowa
(515) 281-8694

Kansas
(785) 296-1679

Kentucky
(800) 928-2380

Louisiana
(504) 342-1234

Maine
(800) 482-0777

Maryland
(800) 633-6101

Massachusetts
(888) 304-1133

Michigan
(800) 292-4706

Minnesota
(800) 422-0798

Mississippi
(610) 352-9100

Missouri
(573) 634-2436

Montana
(406) 431-0014

Nebraska
(402) 471-4230

Nevada
(702) 687-4240

New Hampshire
(800) 852-3792

New Jersey
(609) 292-7172

New Mexico
(505) 827-1557

New York
(800) 457-7362

North Carolina
(800) 858-0368

North Dakota
(800) 472-2121

Ohio
(800) 282-9378

Oklahoma
(800) 522-0206

Oregon
(800) 452-0311

Pennsylvania
(800) 541-2050

Rhode Island
(401) 277-1360

South Carolina
(888) 481-0125

South Dakota
(605) 773-3296

Tennessee
(615) 741-0001

Texas
(800) 832-8224

Utah
(801) 536-4123

Vermont
(800) 641-5005

Virginia
(800) 468-8892

Washington
(800) 258-5990

Washington, D.C.
(202) 727-6161

West Virginia
(800) 642-3074

Wisconsin
(800) 943-0003

Wyoming
(307) 777-7781