

**Title: Hazardous Waste Management**

1. **Purpose:** To establish policies, work practices, and systematic procedures for the handling, packaging, collection, transportation, treatment and disposal of hazardous wastes that are regulated by law. Hazardous waste includes chemical and mixed hazardous (radioactive and chemical) wastes. The goal of this policy is to ensure the proper and safe management (generation, treatment, storage and disposal) of hazardous wastes at Stony Brook University, while applying the U.S. Environmental Protection Agency (EPA)'s hierarchy of waste minimization: reduce, reuse, and recycle. In addition, the policy ensures compliance with federal, state and local regulations on proper handling of hazardous wastes.
2. **Scope:** This policy applies to University employees and other designated personnel who generate and/or manage those who generate hazardous waste. Specific training requirements are outlined within this procedure in section 7.2.
3. **Policy:** All waste generated at this University shall be handled, packaged, collected, transported, treated, and disposed of in such a manner as to protect health and safety, assure compliance with environmental regulations and law, promote effective utilization of resources and contribute to and support the mission of the University. The University also supports and will strive to meet or exceed the waste minimization objectives stated in the Resource Conservation and Recovery Act and similar initiatives.
4. **Responsibilities:** The Department of Environmental Health and Safety (EH&S) shall assume overall responsibility for coordination of the hazardous waste management program and shall assume responsibility for providing technical assistance and support to hazardous waste generators regarding matters relating to hazardous waste management.
 - 4.1. A generator of hazardous waste is defined as any person or site whose processes and actions create hazardous waste. In other words, a generator of hazardous waste is any person who discards regulated hazardous materials or agents or who produces hazardous waste as a result of a process. To assure the safety of all individuals who may come into contact with hazardous waste, the generator shall assume primary responsibility for properly identifying, segregating, handling, labeling, and storing hazardous waste prior to collection, transportation, treatment and/or disposal. It is the generator's responsibility to make certain that all waste packaging, handling and storage procedures ensure that the external surfaces of hazardous waste storage containers are free from contamination and physical hazards prior to removal from the work area. Any work that generates hazardous waste shall be performed in a safe manner and proper segregation of waste streams is necessary in order to allow safe and cost effective waste disposal.
5. **References:**

US Environmental Protection Agency, Hazardous Waste Regulations; 40 CFR Part 260 et seq.
(<http://www.epa.gov/osw/hazard/>)

New York State Department of Environmental Conservation, Hazardous Waste Regulations; 6 NYCRR Part 370 et seq. (<http://www.dec.ny.gov/regulations/8765.html>)

6. Definitions:

- 6.1. Hazardous Waste: Any solid, liquid, gas or sludge that has at least one of the following characteristics: ignitable, corrosive, reactive, toxic or is specifically listed by the U.S. EPA as a hazardous waste.
- 6.2. Contaminated Containers: Empty containers that previously contained a hazardous material and have not been triple rinsed according to EH&S guidelines.
- 6.3. Contaminated Equipment: Includes equipment that has been contaminated by external hazardous chemicals or contains an internal source of hazardous chemicals, such as PCBs in electrical transformers or capacitors, mercury in a sphygmomanometer or scrap electronic components (i.e. lead).
- 6.4. Corrosive: Aqueous waste that has a pH less than or equal to 2 or greater than or equal to 12.5 or is a liquid and corrodes steel at a rate greater than 6.35 mm (0.250 inch) per year.
- 6.5. Ignitable: Liquid waste (other than an aqueous solution containing less than 24 percent alcohol by volume) and has flash point less than 60 [deg]C (140 [deg]F); or, if it is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard; or, it is an ignitable compressed gas; or, it is an oxidizer.
 - 6.5.1. An oxidizer is a substance such as a chlorate, permanganate, inorganic peroxide, or a nitrate, that yields oxygen readily to stimulate the combustion of organic matter.
- 6.6. Reactive: Any chemical compound, mixture or device that will detonate or deflagrate due to a shock or heat; or, a liquid or solid that, even in small quantities and without an external ignition source, can ignite within minutes after coming in contact with air; or, a material that, when in contact with air and without an energy supply, is liable to self-heat or spontaneously ignite; or, material that is liable to undergo, at normal or elevated temperatures, a strongly exothermal decomposition caused by excessively high transport temperatures or by contamination; or, any chemical that becomes unstable, generates pressure, forms a toxic by-product, or otherwise becomes hazardous at room temperature or following rapid temperature changes; or, any chemical that will react violently when exposed to water, including sodium and potassium.
- 6.7. Toxic: A solid waste exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure (TCLP), the extract from a representative sample of the waste contains any of the contaminants listed in table 1 (provided as Attachment 1) at the concentration equal to or greater than the respective value given in that table. A solid waste that exhibits the characteristic of toxicity has the EPA Hazardous Waste Number specified in Table 1 which corresponds to the toxic contaminant causing it to be hazardous.

7. Procedures:

7.1. Work Practices

- 7.1.1. When packaging any type of waste for collection, do not put more than 40 pounds of waste in a single container nor fill more than 3/4 full. Allow space in containers for expansion of vapors, as appropriate/necessary.

- 7.1.2. All materials that pose a potential puncture hazard (e.g., hypodermic needles, broken glass, and plastic-ware) must be packaged in puncture resistant containers prior to removal from the work area.
- 7.1.3. Special considerations shall be made for any/all waste that has the potential to generate pressure during container storage or if exposed to certain environmental conditions (i.e. temperature changes, humidity, etc.). Specialty containers or caps may have to be utilized. Please contact Environmental Health & Safety at 2-6410 for further instruction, as necessary.
- 7.1.4. Do not mix general, solid or non-hazardous waste with hazardous wastes (i.e. regular garbage, office trash, buffer solutions, etc.) or package in hazardous waste containers.
- 7.1.5. Non-water soluble materials, Primary Radioactive Wastes, and Hazardous Chemical Wastes such as Corrosives, Flammable Liquids, Carcinogens, Mutagens and other toxic or reactive chemicals shall not be discharged into any sanitary or storm drain systems.
- 7.1.6. Hazardous wastes must never be left on loading docks, freight elevator lobbies, hallways or any other unrestricted locations.
- 7.1.7. All hazardous wastes must be identified before being offered for disposal. Waste of unknown or incorrectly described composition presents for difficult handling and disposition and may require costly analysis before removal and disposal can be accomplished. In some cases, the cost of this analysis and disposal is the responsibility of the generator.
- 7.1.8. The generation of hazardous waste is to be minimized. Investigators are encouraged to develop and use validated experimental procedures that replace hazardous materials with non-hazardous materials, minimize generation of hazardous wastes, or result in effective treatment of wastes to reduce or eliminate hazardous characteristics.
- 7.1.9. Empty containers that once held chemicals or radioactive materials must be clearly identified using the procedures described for the category in section 7.6 of this Policy.
- 7.1.10. Before initiating treatment of a hazardous waste, generators are requested to contact the Department of Environmental Health and Safety to ensure that the proposed treatment process meets safety, regulatory, and recordkeeping requirements.
- 7.1.11. Do not fill waste containers above any established or marked fill line or to the point of overflowing. Overfilled containers cannot be safely transported or emptied and will be refused by the Department of Environmental Health and Safety.

7.2. General Information

- 7.2.1. No hazardous wastes may be dumped down a drain, discharged to sanitary sewer, be discarded with regular trash or be allowed to evaporate to the atmosphere.
- 7.2.2. Only trained personnel may manage waste. Waste Management Training is required if an employee has the responsibility for:
- Determining if a material is a hazardous waste.
 - Adding hazardous waste into an accumulation container.
 - Transporting hazardous waste from a satellite accumulation point to a collection event or 90-day storage area.

- Inspecting hazardous waste storage areas.
- Responding to spills involving hazardous waste.

7.2.3. New employees may not manage or handle hazardous waste unless supervised. Employees will receive training in the management and handling of hazardous within six months of commencing work with hazardous waste.

7.2.4. Hazardous waste management training is provided by EH&S. For more information, visit <http://www.stonybrook.edu/ehs/training/>

7.2.5. Hazardous wastes must be accumulated in areas at or near the point of generation (accumulation area) and that are under the control of the area supervisor.

7.2.6. No more than 55-gallons of a single waste stream may be accumulated at any one time.

7.2.7. No more than 1 quart of acutely hazardous waste (see Attachment 4) may be accumulated at any one time.

7.3. Labeling Instructions

7.3.1. All chemical wastes must be labeled with a University Chemical Waste Disposal Label as soon as waste is generated and added to the container (it is recommended to label the bottle *prior* to collection so as to avoid having to label it once waste has been added). If the waste or surplus chemical is in the original manufacturer's container, confirm the identity of the chemical and place a small (1" x 2") "Hazardous Waste" label next to the original label (see Attachment 2 for examples of each label type).

7.3.2. If the waste is a mixture, identify the chemical waste constituents by proper chemical name including any deactivators/disinfectants used and the approximate quantity or concentration. Use of obscure acronyms, chemical formulas and brand names is prohibited.

7.3.3. All fields on the University Chemical Waste Disposal Label should be filled out/completed, including all generator information (name, date, department, location, telephone, etc.), material type and form as well as any physical or health hazards that may be associated with the waste.

7.3.4. For chemicals in containers that were previously used for other chemicals (i.e. stock bottles), mark a bold XXX through the original label, complete a Waste Chemical Label and attach over the original label.

7.3.5. A Chemical Waste Manifest must be completely filled out each time chemical waste is picked up from a lab or other location or brought to a pickup event on campus. The identification of the chemicals on the manifest must match those on the Chemical Waste Disposal labels having been placed on the chemical waste containers. The number of containers and the size of the containers must also be listed. The size of the container, not the amount in the container, should be listed on the manifest. The completed and signed manifest, with account numbers (if appropriate/warranted), must be available when a pickup is made.

7.4. Waste Segregation

7.4.1. Do not store incompatible materials near each other. Check incompatibility charts.

- 7.4.2. Store acids away from bases, active metals, oxidizers and chemicals which could generate toxic gasses.
- 7.4.3. Store flammables in a flammable storage cabinet.
- 7.4.4. Do not mix flammables with oxidizers.
- 7.4.5. Store large bottles on low shelves.
- 7.4.6. Keep containers closed when not being filled.
- 7.4.7. Leaking containers must be transferred to another container.
- 7.4.8. Liquid laboratory wastes in un-sealable containers must be transferred into a container that can be securely sealed to prevent spillage. Whenever transferring a chemical into a new container, check to make sure that the chemical is compatible with (i.e. will not corrode, dissolve, or permeate) the container.
- 7.4.9. Waste streams should be kept as pure as possible. Before mixing chemical wastes, check to make sure all are compatible and will not react. If unsure about the type of container to use for a waste or if a waste can be mixed with other chemicals, consult with the Department of Environmental Health and Safety.
- 7.4.10. Bulk liquid laboratory wastes must be placed in containers that are compatible with the waste chemical and will prevent leakage of liquids and vapors.
- 7.4.11. Store containers in separate secondary containment whenever possible.
- 7.4.12. Chemical reagents in small containers, including vials and bottles of 100 ml or less, must be segregated by type and compatibility and may be packaged into a larger container, such as a strong cardboard packing box or pail and the outermost container can be labeled as opposed to labeling each individual label stored inside. Sort smaller containers by chemical compatibility using separate boxes or containers for each group, as needed.

7.5. Waste Transportation

- 7.5.1. During chemical transport wear personal protective equipment.
- Nitrile chemical gloves
 - Chemical goggles
 - Apron or lab coat
- 7.5.2. Have spill clean-up material available.
- 7.5.3. Do not lift bottles by the cap alone. Always support the bottom of the bottle. When handling keep bottles below eye level.
- 7.5.4. Place bottles in a tray as secondary containment or use a cart with secondary containment.
- 7.5.5. Do not overload carts. Place containers with the correct side up, into the boxes using cardboard separations or small amounts of other suitable packing material to ensure the stability and immobility of the containers within the carton during transport.

- 7.5.6. Do not bury small containers in packing material or between larger containers where they may be lost or broken in transit.
- 7.5.7. Do not seal the tops of the packing boxes. Department of Environmental Health and Safety personnel must check the contents before removing the waste from the work area. Do not stack packing boxes of chemical waste.
- 7.5.8. Do not store incompatible materials near each other while waiting to have waste picked up. All containers must be securely sealed and leak proof.
- 7.5.9. Bulk dry solids wastes, including contaminated disposable laboratory refuse, absorbed hazardous liquid wastes, and other nonvolatile solid wastes that do not contain free liquids, can be packaged in doubled heavy duty plastic bags, 5 gallon open top metal can, 15 gallon blue polypropylene drums, 30 gallon fiber drums or 55 gallon open top metal drums. Consult with the Department of Environmental Health and Safety to determine which type of containers should be used for the types and amounts of dry waste being generated.
- 7.5.10. Semisolid wastes and other volatile solid wastes, including solid chemical wastes that are wet, corrosive, generate toxic or flammable vapors, or otherwise require more secure packaging than dry solid wastes, can be placed in a wide mouth glass jar, plastic container, or other container that is compatible with the waste chemical and prevents leakage of liquid vapors. If the waste contains culture media or other material subject to deprecation, add a sufficient amount of a chemically compatible disinfectant to suppress microbial growth.

7.6. Specific Hazardous Waste Handling

7.6.1. Contaminated Containers:

- 7.6.1.1. All containers that held a hazardous material must be triple rinsed with an appropriate solvent to insure that the container has been properly decontaminated before disposal. Depending on the nature of the materials, the rinse solvent may have to be disposed of as chemical waste. Contact EH&S with questions.
- 7.6.1.2. After the containers have been triple rinsed, deface the original label with an indelible marker or by placing a "Triple Rinsed" sticker over it. Drums can be marked as empty by writing "MT" with an indelible marker in a color that will be visible over the original label. Place a "Triple Rinsed" label on all containers if possible. Replace bungs, caps or other sealing devices and tighten. Remove grease, oil, and chemical residues from the exterior of all containers.
- 7.6.1.3. One gallon or smaller decontaminated glass and plastic bottles should be recycled whenever possible in proper/designated recycling bins established around campus or in your particular lab space. Alternatively, clean glass and plasticware may be reused as waste collection vessels as long as the containers are free of residual and pose no risk of contamination that may result in incompatibility issues or inadvertent/unintended chemical reactions.
- 7.6.1.4. Under no circumstances may a container labeled with the international radioactive symbol or with the words "Hazardous Waste" be disposed of in the regular trash.

7.6.1.5. Do not discard bungs or make holes in drums. Incomplete or damaged drums cannot be transported safely, often times cannot be recycled, and likely would require costly disposal procedures.

7.6.1.6. Before putting non-hazardous waste that might be mistaken for a laboratory chemical in the trash, label the bag with the contents and the words “non-hazardous” and put a note on the bag reading: “For questions, contact *Your Name Here*”.

7.6.2. Contaminated Equipment:

7.6.2.1. When equipment has been contaminated, the generator should attempt to decontaminate equipment prior to requesting disposal as chemical waste. If decontamination is performed by a contractor, equipment will be certified as clean before disposal. Contact the Department of Environmental Health and Safety for information on decontamination methods and assistance.

7.6.2.2. Equipment may intrinsically contain toxic chemicals (i.e. electrical transformers and capacitor units may contain PCBs) requiring special handling procedures, testing and disposal as chemical waste if the toxic chemicals cannot be removed. Scrap electronic equipment that contains hazardous components may be either recycled by a certified scrap dealer or by disposed as hazardous waste. Contact the Department of Environmental Health and Safety for assistance prior to moving units or handling such equipment.

7.6.3. Corrosive Acids and Bases:

7.6.3.1. Certain acids and bases which are strong oxidizers, such as perchloric and nitric acid, or those that contain toxic metals, such as chromic acids, or those that form highly toxic salts, such as hydrofluoric acid, should not be neutralized and cannot be poured down the drain.

7.6.4. Deregulated Scintillation Fluid:

7.6.4.1. Attach a copy of the scintillation counter printout to the Chemical Waste Manifest to demonstrate that the material is deregulated (<0.05 millicuries/ml of H3 or C14).

7.6.4.2. Scintillation fluids may be disposed of in scintillation vials. Alternately, the fluid may be poured off into another container. Due to the additional handling and possible increase in exposure, it is required that this procedure be carried out in a chemical fume hood. The empty unbroken vials can be rinsed with water, placed in a plastic bag, and disposed of as General Non-Hazardous Waste.

7.6.4.3. All toluene or xylene based scintillation fluids are to be managed, stored and disposed of as flammable solvent/hazardous waste.

7.6.4.4. All other scintillation fluids (e.g., alkyl benzene or other non-flammable based materials), should be treated as general chemical waste. Scintillation fluids of any type cannot be poured down the drain.

7.6.5. Explosives:

- 7.6.5.1. Examples of potentially explosive chemicals encountered in campus laboratories include nitrosoguanidines, nitrosoureas and picric acid.
- 7.6.5.2. Do not place containers of potentially explosive chemicals in boxes containing other waste chemicals. Pack separately with appropriate noncombustible cushioning materials. Do not place metal sensitive compounds such as picric acid in metal containers or wrap them with aluminum foil.
- 7.6.5.3. Some chemicals such as dinitrophenyl hydrazine, picric acid, and other trinitro compounds may become shock sensitive and dangerous to handle if allowed to dry out. Do not allow inventories of these chemicals to dry out while in use and storage. Prior to disposal as chemical waste, fill bottles with water and tighten caps. If a container of this type of material has dried out, do not attempt to open container and immediately contact Environmental Health & Safety @ 2-6410.
- 7.6.5.4. Certain chemicals, such as ethers and alkali metals, can form potentially explosive peroxides. Clearly indicate the date of purchase or receipt and the date opened on all containers of chemicals that tend to form dangerous peroxides during storage. This information is needed to meet safety and transportation requirements.
- 7.6.5.5. Opened containers of peroxide forming chemicals should be tested for peroxide formation or be discarded as chemical wastes within 3 to 6 months after opening.
- 7.6.5.6. Unopened containers of peroxide forming chemicals should not be held for more than 12 months after receipt. Contact the Department of Environmental Health and Safety for disposal guidance.
- 7.6.5.7. If evidence of peroxide formation, such as crystal formation, is noted in a chemical container, do not attempt to move it. Contact EH&S @ 2-6410 for removal.
- 7.6.5.8. Advise the Department of Environmental Health and Safety at the time a call for a pickup is placed or when the waste is brought to a pickup event that an explosive chemical is to be removed.
- 7.6.6. Flammable Liquids:
- 7.6.6.1. Collect flammable liquids in appropriate flammable waste disposal containers.
- 7.6.6.2. Collect halogenated and non-halogenated solvents in separate waste containers.
- 7.6.6.3. Place only chemically compatible waste solvents in the container. Do not place solids, aqueous chemical wastes, concentrated halogenated solvents, phenol, heavy metal compounds, strong acids or bases, oxidizers or radioactive wastes in solvent collection containers unless they are mixed as a result of the waste generating process.
- 7.6.6.4. If different solvents are added to a container, use a waste description list that can accompany the container. Identify solvent components by chemical name. Write in pencil; solvent splash and vapors quickly render inks illegible.
- 7.6.6.5. Do not remove flame arrestor screens from solvent can spouts or prop spring hinged lids open. These are important safety devices.

7.6.7. Flammable Solids:

7.6.7.1. White Phosphorus and fine metal catalysts (i.e. palladium or platinum on carbon, platinum oxide and Raney nickel) should be stored under water.

7.6.8. Gases:

7.6.8.1. Close and tighten valves and replace safety caps on cylinders.

7.6.8.2. If the container is empty and not pressurized, write "EMPTY" on the container label. Identify the gas that was previously held in the container. Valves will be removed from empty gas cylinders before disposal as metal scrap.

7.6.8.3. Contact supplier to obtain guidelines for the shipment of cylinders to be returned.

7.6.8.4. Contact EH&S for removal of orphaned cylinders.

7.6.8.5. Always use hand truck to move large, compressed gas cylinders.

7.6.9. Halogenated Solvents:

7.6.9.1. Collect waste halogenated solvents in appropriate waste disposal containers.

7.6.9.2. Collect halogenated and non-halogenated solvents in separate waste containers.

7.6.9.3. Place only chemically compatible waste solvents in the container. Do not place solids, aqueous chemical wastes, phenol, heavy metal compounds, strong acids or bases, oxidizers, or radioactive wastes in halogenated solvent collection containers unless they are mixed as a result of the waste generating process.

7.6.9.4. If different solvents are added to a container, use a waste description list that can accompany the container. Identify solvent components by chemical name. Write in pencil; solvent splash and vapors quickly render inks illegible.

7.6.9.5. Do not fill containers above the indicated fill line or to the point of overflowing. Overfilled containers cannot be safely transported or emptied and will be refused by the Department of Environmental Health and Safety.

7.6.9.6. Waste halogenated solvents may contain flammable solvents and should be handled as if they are flammable. Use safety funnel to transfer liquids. Do not remove flame arrestor screens from solvent can spouts or prop spring hinged lids open.

7.6.10. Non Halogenated Solvents:

7.6.10.1. Liquid solvents will be handled as flammable wastes outlined above.

7.6.11. Oxidizers:

7.6.11.1. Never mix oxidizers with easily oxidized organic or inorganic materials. Make sure that the waste container is compatible with oxidizers. Treat as hazardous chemical waste as described above.

7.6.12. Paint:

- 7.6.12.1. Cans of oil based paints that still contain liquids must be disposed of as hazardous waste. Waste paint may be accumulated at the physical plants and disposed as outlined above. Latex or acrylic paint may be left to dry and discarded as regular trash.

7.6.13. Photographic Waste:

- 7.6.13.1. All photographic waste and unused photographic chemicals should be treated as described above.
- 7.6.13.2. A silver recovery system must be used to bring the waste below the allowable levels before discharge. Silver recovery units must be monitored and maintained to insure compliance with sewer regulations. Maintenance slips and hauling receipts must be kept by each department and forwarded to the Department of Environmental Health and Safety upon request.

7.6.14. Poisons/Toxins:

- 7.6.14.1. Advise the Department of Environmental Health and Safety at the time a call for chemical waste pick up is placed or during a pickup event that poisons and/or toxins are to be removed.

7.6.15. Solvent Contaminated Rags:

- 7.6.15.1. All used oil, grease or solvent rags must be kept in an approved fire safety rag container.
- 7.6.15.2. Rag safety containers must be maintained in good working order.
- 7.6.15.3. Solvent soaked rags must be kept in separate containers from oil/grease rags and managed as hazardous waste until it is sent out for laundering or disposed of as hazardous waste.
- 7.6.15.4. Rag containers for solvent rags must be labeled with a "Hazardous Waste Label".
- 7.6.15.5. Oil/grease rag containers must be appropriately labeled "Used Oily Rags"
- 7.6.15.6. Vendors who collect solvent rags for laundering must provide verification that they transport used solvent rags in containers meeting the applicable DOT container requirements as contained in New York State Department of Environmental Conservation (DEC) Policy DSH-HW-03-09 Regulatory Status of Laundered Industrial Rags & Soiled Clothing <http://www.dec.ny.gov/regulations/8761.html> (provided as Attachment 3).

7.6.16. Surplus Chemicals:

- 7.6.16.1. Containers of unopened, pure laboratory chemicals which are in good condition and no longer needed by an investigator may be held in the laboratory or other appropriate storage area for possible redistribution to other University laboratories. Contact the Department of Environmental Health and Safety for guidance.

7.6.16.2. Surplus chemicals should be properly sealed, labeled, and packaged for transfer. Investigators may opt to contact both the supplier and potential receiver of surplus chemicals directly. The actual transfer of the chemicals may have to be arranged by the supplier and receiver, in which case EH&S should be notified.

7.6.17. Temperature Sensitive:

7.6.17.1. Wastes containing chemicals that require a special temperature range must be maintained by the generator at a safe temperature until they are removed by the Department of Environmental Health and Safety.

7.6.17.2. Advise the Department of Environmental Health and Safety at the time a call for a pickup is placed or during a pickup event that chemicals requiring temperature control are to be removed.

7.6.18. Unused Hazardous Drugs:

7.6.18.1. Contact the Department of Environmental Health and Safety with the names, amounts and manufacturers of the drugs that cannot be returned to the manufacturer for an evaluation of the proper methods for disposal.

7.6.19. Water Reactive:

7.6.19.1. Make sure all containers are tightly closed. Seal caps on with parafilm or filament tape. Certain water reactive chemicals, such as sodium and potassium, should be stored in mineral oil.

7.6.19.2. Advise the Department of Environmental Health and Safety at the time a call for a pickup is placed or during a pickup event that water reactive chemicals are to be removed.

7.6.20. Used oil and other combustible petroleum based products:

7.6.20.1. Used pump oil, automotive oils and oil filters, or used oil from a known origin will be handled as non hazardous and sent off-site for recycling.

7.6.20.2. Containers of waste oil with unknown origin will be tested for the presence of polychlorinated biphenyls (PCBs) using the Clor-N-Oil 50 brand PCB screening kit. This kit uses EPA SW-46 Method 9079 to determine the presence of PCBs in the 0-50 ppm range. Oil that indicates the presence of PCBs will be disposed of as New York State regulated hazardous waste PCB oil.

7.6.20.3. Waste oil that is suspected of containing PCBs may also be tested for PCB content using an outside lab. The lab will use EPA Method 8082 found in 49 CFR, No 209 to determine the concentration of PCBs.

7.6.21. Miscellaneous:

7.6.21.1. Any items contaminated with a hazardous chemical are assumed to have the same hazardous properties as the chemical, unless the items can be decontaminated or testing demonstrates that the items are not hazardous. This includes items used to clean up

hazardous chemical spills. The type of decontamination or testing that has to be performed depends on the nature of the hazardous material. Contact the Department of Environmental Health and Safety for information on decontamination procedures and testing requirements. If the items cannot be decontaminated and testing is not performed, the contaminated items must be treated as hazardous waste.

7.6.21.2. Discarded chemical products, off-specification chemicals, container residue and spill residues from acute hazardous wastes are assumed to have the same hazardous properties as the chemical and cannot be decontaminated. These wastes must be disposed of as acutely hazardous waste. Refer to 40 CFR Part 261.33 Acute Hazardous Wastes (P-Listed Wastes) provided as Attachment 4.

7.6.22. Wastes of unknown composition:

7.6.22.1. Wastes of unknown or incorrectly described composition present difficult handling and disposal problems, and may require costly analyses before removal and disposal can be accomplished. "Orphan" reaction mixtures and unidentified chemicals left by departed laboratory workers are the most frequent source of unknowns. Investigators should label all stored reaction mixtures with the name and concentration of the chemical compound, date they were formed, the name of the investigator and a notebook reference. Laboratories are encouraged to institute a check out procedure that requires departing workers to identify all reaction mixtures and unlabeled chemicals that they have not discarded.

7.6.22.2. In the case of a vacated investigator, the responsibility for the proper disposal of abandoned chemicals, identifiable or unidentifiable, lies with the investigator's department unless otherwise noted by EH&S.

7.6.22.3. Stony Brook University's waste disposal contractor may be requested to perform limited field screening of unknown chemicals contained in small lab size containers, less than one (1) gallon liquid or one (1) pound solid, to determine proper disposal classification.

7.6.22.4. Unknown chemicals present within containers greater than lab-pack size will require analytical testing for the following parameters: pH, flashpoint, reactivity, corrosivity, priority pollutant metals, volatile organic compounds, semi-volatile organic compounds, pesticides, herbicides and polychlorinated biphenyls.

7.6.23. Mixed Wastes:

7.6.23.1. Due to the increasingly restrictive environmental initiatives and regulations concerning the acceptance and disposal of wastes contaminated with mixed hazardous materials, these wastes may warrant assessment by the Department of Environmental Health and Safety.

8. Related attachments, forms or documents:

Attachment 1: Maximum Concentration of Contaminants for the Toxicity Characteristic

Attachment 2: Label examples

Attachment 3: New York State Department of Environmental Conservation (DEC) Policy DSH-HW-03-09
Regulatory Status of Laundered Industrial Rags & Soiled Clothing

Attachment 4: P-listed waste

Attachment 1

Table 1--Maximum Concentration of Contaminants for the Toxicity
Characteristic

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	Pentachlorophenol.....	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	Tetrachloroethyl ene.....	127-18-4	0.7
D015	Toxaphene.....	8001-35-2	0.5
D040	Trichloroethyl ene.....	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

\1\ Hazardous waste number.

\2\ Chemical abstracts service number.

\3\ Quantitation limit is greater than the calculated regulatory level.

The quantitation limit therefore becomes the regulatory level.
\4\ If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.

Attachment 2

Process Waste Container Label:

STATE UNIVERSITY OF NEW YORK AT STONY BROOK
HAZARDOUS WASTE for DISPOSAL
INSTRUCTIONS:
1. SEGREGATE CHEMICALS FOR DISPOSAL BY HAZARD CATEGORY.
2. COMPLETE AND AFFIX THIS LABEL TO EACH CONTAINER.
3. SAFELY TRANSPORT CHEMICAL WASTE TO CHEMICAL COLLECTION SITE.
4. CONTACT EH&S IF THERE ARE ANY QUESTIONS: 2-6410

Name	Date	Department	Location	Signature
Name(s) of Hazardous Waste:				
MATERIAL	FORM	HAZARD		
<input type="checkbox"/> CHEMICAL	<input type="checkbox"/> SOLID	<input type="checkbox"/> IRRITANT	<input type="checkbox"/> POISON (TOXIC)	
<input type="checkbox"/> SOLVENT	<input type="checkbox"/> LIQUID	<input type="checkbox"/> AIR REACTIVE	<input type="checkbox"/> OXIDIZER	
<input type="checkbox"/> BIOLOGICAL SUBSTANCE	<input type="checkbox"/> GAS	<input type="checkbox"/> WATER REACTIVE	<input type="checkbox"/> EXPLOSIVE	
<input type="checkbox"/> DRUG SUBSTANCE	<input type="checkbox"/> Other (specify)	<input type="checkbox"/> FLAMMABLE	<input type="checkbox"/> Other (specify)	
<input type="checkbox"/> Other _____		<input type="checkbox"/> CORROSIVE		

Material Must Be Refrigerated. EH&S STORAGE DATE _____

TM 10/01

Chemical name must be written in English. Do NOT use chemical formulas or abbreviations

Identify the hazard(s) associated with the waste.

Stock/Original Waste Container Label:

HAZARDOUS WASTE
Stony Brook University
Stony Brook, NY 11794 _____
(631) 632-6410 **date**

Attachment 3

New York State Department of Environmental Conservation (DEC) Policy DSH-HW-03-09 Regulatory Status of Laundered Industrial Rags & Soiled Clothing

DSH-HW-03-09
**Regulatory Status of Laundered Industrial Rags
& Soiled Clothing**

New York State Department of Environmental Conservation

DEC Policy

Issuing Authority: Division of Solid & Hazardous Materials

Date Issued: October 8, 2003

Latest Date Revised: September 24, 2003

I. Summary:

This Program Policy addresses the regulatory status of used shop towels, industrial rags, and soiled clothing contaminated with oil or solvents when these items will be laundered. Specifically, it defines the conditions that must be met in order for hazardous shop towels, industrial rags, and soiled clothing to be sent as nonhazardous waste to industrial laundries or on-site laundries. This Program Policy takes effect 30 days after the date of issuance.

II. Policy:

It is the policy of the Division that shop towels, industrial rags, and soiled clothing ("towels/rags/clothing") that have become contaminated with incidental amounts of hazardous solvents may be sent to industrial laundries (or laundered on-site) as non-hazardous waste, provided certain conditions are met. (See section V for those conditions.)

III. Purpose and Background:

In 1991, the United States Environmental Protection Agency (USEPA) recognized the possible need for developing workable approaches for the management of used wipers, and allowed authorized states and USEPA regions to develop case-by-case policies to implement such approaches. In response, the Division issued Technical and Administrative Guidance Memorandum (TAGM) Number 3031, entitled "Regulatory Status of Industrial Rags and Soiled Clothing," on January 2, 1992 to provide an operable policy for such wipers and, by extension, soiled clothing.

This revised Program Policy document builds upon, supercedes, and replaces the guidance articulated in the original TAGM 3031, and reflects the experience and knowledge gained through implementation of that TAGM over the eleven-year period since its issuance.

IV. Responsibility:

Responsibility for the interpretation and updating of this Program Policy document resides with the Bureau of Hazardous Waste Regulation within the Division of Solid & Hazardous Materials.

Questions regarding this policy should be directed to:

William Yeman
Bureau of Hazardous Waste Regulation
Division of Solid & Hazardous Materials
518-402-8633

V. Procedure:

When the following conditions are met, towels/rags/clothing may be sent to industrial laundries (or laundered on-site):

1. Towels/rags/clothing which are a listed or characteristic hazardous waste must be managed as non-exempt hazardous waste until they are loaded onto a vehicle that will initiate delivery of these items to an off-site laundry, or until they are laundered on-site. (Note: Only absorbent products which qualify as towels or rags are eligible for this Program Policy. Thus, absorbent pigs, logs, and most absorbent pads cannot qualify *unless* they consist of absorbent materials identifiable as towels/rags/clothing.)
2. Notification is made in accordance with the one-time notice requirement of 6 NYCRR Part 376.1(g)(1)(vii) of the land disposal restrictions (LDRs). However, note that: (a) conditionally-exempt small quantity generators are exempt from this requirement because they are not subject to the LDRs; and (b) towels/rags/clothing that are not contaminated with listed hazardous waste and do not exhibit a hazardous waste characteristic, *even at their points of generation*, are not subject to this one-time notice requirement.
3. At the time the towels/rags/clothing are loaded onto the vehicle that will initiate delivery to the off-site industrial laundry (or when the laundering begins on-site), the towels/rags/clothing do not contain free liquids (as determined by the "Paint Filter Liquids Test," USEPA SW846 Test Method #9095) and no free liquids are present in their containers. (Note: if this condition is met, subsequent formation of free liquids is permissible under this Program Policy, provided the towels/rags/clothing are managed only in USDOT-compliant containers as described in V.4 below.)
4. Until their arrival at the facility where the laundering will occur, towels/rags/clothing are managed only in containers meeting the applicable United States Department of Transportation (USDOT) hazardous materials packaging specifications for shipment of that type of material. For example, if the towels/rags/clothing qualify as UN3175 ("Solids containing flammable liquid"), they must always be kept in leakproof containers approved for the shipment of UN3175 material until their arrival at the laundry.

5. The towels/rags/clothing are subsequently laundered and reused, and towels/rags/clothing of a similar type and quantity are returned to the user for reuse after laundering.
6. No additional solvents are added to the towels/rags/clothing after they have been containerized.
7. Applicable federal and State Department of Transportation shipping regulations are met.
8. The facility laundering the towels/rags/clothing remains subject to all other applicable environmental regulations.

When these conditions are met, receipt and laundering of towels/rags/clothing at on-site and off-site laundries will not subject the laundries to either 6 NYCRR Part 373 hazardous waste permitting or Part 360 solid waste permitting, and transportation of the towels/rags/clothing to the laundry will not subject the transporter to Part 364 waste transporter permitting. In addition, no notification under 6 NYCRR Part 371.1(c)(7)) is required for towels/rags/clothing being managed under this Program Policy. Finally, any residuals obtained at the laundry from these towels/rags/clothing (including drippage, laundry sludges) must be managed as hazardous waste only if they exhibit a hazardous waste characteristic.

Related References

Issuance of this Program Policy is supported by the following documents (relevant portions attached):

- USEPA letter dated January 23, 1991 (“...Regions and States will continue to use the current case-by-case approach [for determining the regulatory status of solvent-contaminated rags and wipers].”).
- USEPA letter dated February 14, 1994 (“I have enclosed policy documents from several States and one EPA Region regarding the identification and/or management of wipers, that provide examples of how some implementing agencies have developed workable approaches to this issue.”) Enclosures with that 1994 letter included a January 21, 1992 letter from USEPA’s Region 2 Office, which referenced the Department’s 1992 laundered rags and soiled clothing policy.

Attachment 4

These wastes and their corresponding EPA Hazardous Waste Numbers are:

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)-
P042	51-43-4	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-
P046	122-09-8	Benzenethanamine, alpha,alpha-dimethyl-
P014	108-98-5	Benzenethiol
P127	1563-66-2	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-, methylcarbamate.
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).
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%
P028	100-44-7	Benzyl chloride
P015	7440-41-7	Beryllium powder
P017	598-31-2	Bromoacetone
P018	357-57-3	Brucine
P045	39196-18-4	2-Butanone, 3,3-dimethyl-1-(methylthio)-, O-[(methylamino)carbonyl] oxime
P021	592-01-8	Calcium cyanide
P021	592-01-8	Calcium cyanide Ca(CN) ₂
P189	55285-14-8	Carbamic acid, [(dibutylamino)- thio]methyl-, 2,3-dihydro-2,2-dimethyl- 7-benzofuranyl ester.
P191	644-64-4	Carbamic acid, dimethyl-, 1-[(dimethyl-amino)carbonyl]- 5-methyl-1H- pyrazol-3-yl ester.
P192	119-38-0	Carbamic acid, dimethyl-, 3-methyl-1- (1-methylethyl)-1H- pyrazol-5-yl ester.
P190	1129-41-5	Carbamic acid, methyl-, 3-methylphenyl ester.
P127	1563-66-2	Carbofuran.
P022	75-15-0	Carbon disulfide
P095	75-44-5	Carbonic dichloride
P189	55285-14-8	Carbosulfan.

P023	107-20-0	Chloroacetaldehyde
P024	106-47-8	p-Chloroaniline
P026	5344-82-1	1-(o-Chlorophenyl)thiourea
P027	542-76-7	3-Chloropropionitrile
P029	544-92-3	Copper cyanide
P029	544-92-3	Copper cyanide Cu(CN)
P202	64-00-6	m-Cumenyl methylcarbamate.
P030		Cyanides (soluble cyanide salts), not otherwise specified
P031	460-19-5	Cyanogen
P033	506-77-4	Cyanogen chloride
P033	506-77-4	Cyanogen chloride (CN)Cl
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-, (1alpha,2beta,2alpha,3beta,6beta,6alpha,7beta, 7alpha)-
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-, (1alpha,2beta,2abeta,3alpha,6alpha,6abeta,7beta, 7alpha)-, & 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	Diphosphoramid, 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(dimethylcarbamo-dithioato-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-Methylactonitrile
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	Octamethylpyrophosphoramidate
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-, (1alpha,2beta,2beta,3alpha,6alpha,6beta,7beta, 7alpha)-, & 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-Methylactonitrile
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	Diphosphoramidate, octamethyl-
P085	152-16-9	Octamethylpyrophosphoramidate
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_2O_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_3P_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 (3a <i>S</i> -cis)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo[2,3- <i>b</i>]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-1 <i>H</i> -pyrazol-3-yl ester
P191	644-64-4	Dimetilan
P192	119-38-0	Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1 <i>H</i> -pyrazol-5-yl ester
P192	119-38-0	Isolan
P194	23135-22-0	Ethanimidthioic acid, 2-(dimethylamino)- <i>N</i> -[[[(methylamino)carbonyl]oxy]-2-oxo-, methyl ester
P194	23135-22-0	Oxamyl
P196	15339-36-3	Manganese, bis(dimethylcarbamodithioato- <i>S,S'</i>)-,
P196	15339-36-3	Manganese dimethyldithiocarbamate
P197	17702-57-7	Formparanate
P197	17702-57-7	Methanimidamide, <i>N,N</i> -dimethyl- <i>N'</i> -[2-methyl-4-[[[(methylamino)carbonyl]oxy]phenyl]-
P198	23422-53-9	Formetanate hydrochloride
P198	23422-53-9	Methanimidamide, <i>N,N</i> -dimethyl- <i>N'</i> -[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	<i>m</i> -Cumenyl methylcarbamate
P202	64-00-6	3-Isopropylphenyl <i>N</i> -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

¹CAS Number given for parent compound only.

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

[*Comment:* For the convenience of the regulated community, the primary hazardous properties of these materials have been indicated by the letters T (Toxicity), R (Reactivity), I (Ignitability) and C (Corrosivity). Absence of a letter indicates that the compound is only listed for toxicity. Wastes are first listed in alphabetical order by substance and then listed again in numerical order by Hazardous Waste Number.]