LEARNERS GUIDE FOR RESPONSIBLE HAZARDOUS CHEMICAL WASTE MANAGEMENT

UNIVERSITY OF ROCHESTER

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CHEMICAL WASTE MANAGEMENT

Rationale:
The government, through the **Environmental Protection Agency (EPA)** as well as the **New York State Department of Environmental Conservation (NYSDEC)** and local agencies, has enacted regulations to protect life, property and the environment from the effects of improper hazardous waste management and disposal. Each person who works with hazardous materials has specific legal responsibilities for the safe identification and management of toxic wastes produced as a result of his or her experiments.

Failure to properly manage toxic wastes can result in personal injury or death, property damage or contamination, loss of good public image, and even civil or criminal penalties encompassing fines and/or imprisonment.

Chemical waste at the University of Rochester is managed by the Hazardous Waste Management Unit (HWMU) of Facilities and Services. To contact HWMU dial x52056.

Drain disposal of chemicals into the sanitary sewer system is permitted only for small amounts of substances that can be successfully treated by the Monroe County Sewer District's facilities and must be in compliance with the guidelines set forth in the **Sewer Use Law of Monroe County**.

Purpose:
The purpose of this guide is to discuss chemical waste management in the laboratory. Topics that will be discussed include the following:

Section VII: Review of Waste Disposal Requirements 28

After reading this manual one should be able to carry out the basic requirements of laboratory waste management at the University of Rochester. This includes container selection and labeling of chemical wastes generated in the lab, completing a waste tag, scheduling a waste pickup and knowing whom to call for additional information. Questions regarding Hazardous Waste and its proper disposal should be addressed to the Hazardous Waste Management Unit.

I. Waste Determination:

WHENEVER THERE IS A DOUBT ABOUT A WASTE'S BEING HAZARDOUS OR NONHAZARDOUS, CONTACT THE HAZARDOUS WASTE MANAGEMENT UNIT (HWMU) FOR TECHNICAL ASSISTANCE at x52056.

If the waste is determined to be a Hazardous Waste, it must be managed accordingly. **HWMU WILL NOT ACCEPT UNKNOWN WASTES.**

What is a Hazardous Waste?

A Hazardous Waste is a particular class of waste (which can be either solid, liquid or gas) that can, if improperly managed, pose a substantial threat or potential hazard to human health or the environment. These are either listed by specific chemical name or can be determined to be Hazardous Waste based on physical characteristics such as Ignitability, Corrosivity, Reactivity, or Toxicity.

A current listing of all Hazardous Wastes can be found in 6 NYCRR Part 371 (see Web links below). These include acutely toxic waste (P), toxic wastes (U), waste from non-specific sources (F), and waste from specific sources (K).

Also, a waste that is not specifically listed in the regulations is considered hazardous if it exhibits the characteristic of Ignitability, Corrosivity, Reactivity, or Toxicity. Such wastes are referred to as Characteristic (D).

261.21 Characteristic of Ignitability

A. A waste exhibits the characteristic of Ignitability if a representative sample of the waste has any of the following properties:

1. It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume and has flash point less than 60^{o}C (140^{o}F), as determined by a Pensky-Martens Closed Cup Tester or a Setaflash Closed Cup Tester, or as determined by an equivalent test method approved by the Administrator.

2. It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption or moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.

3. It is an ignitable compressed gas as defined in *49 CFR 173.300*.

4. It is an oxidizer as defined in *49 CFR 173.151*. (USDOT definition)

B. A waste that exhibits the characteristic of Ignitability, but is not listed as a Hazardous Waste in Subpart D, has the EPA Hazardous Waste Number of D001.

261.22 Characteristic of Corrosivity

A. A waste exhibits the characteristic of Corrosivity if a representative sample of the waste has either of the following properties:

1. It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using either an EPA test method or an equivalent test method approved by the Administrator.

2. It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55oC (130^{o}F), or an equivalent test method approved by the Administrator.

B. A waste that exhibits the characteristic of Corrosivity, but is not listed as a hazardous waste in Subpart D, has the EPA Hazardous Waste Number D002.

261.23 Characteristic of Reactivity

A. A waste exhibits the characteristic of Reactivity if a representative sample of the waste has any of the following properties:

1. It is normally unstable and readily undergoes violent change without detonating.
2. It reacts violently with water.
3. It forms potentially explosive mixture with water.
4. When mixed with water, it generates toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment.
5. It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment.
6. It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.
7. It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.
8. It is a forbidden explosive as defined in *49 CFR 173.51*, or a Class A explosive as defined by *49 CFR 173.53*, or a Class B explosive as defined in *49 CFR 173.88*.

B. A waste that exhibits the characteristic of Reactivity, but is not listed as a hazardous waste in Subpart D, has the EPA hazardous waste number of D003.

Useful Web Links
http://www.dec.ny.gov/regs/14897.html

http://www.dec.ny.gov/regs/14898.html
http://www.dec.ny.gov/regs/14899.html

II. Disposal

A. Containers

Containers holding Hazardous Waste must be in good condition, non-leaking, and compatible with the waste being stored. The container must always be closed during storage, except when it is necessary to add or remove waste. Hazardous Waste must not be placed in unwashed containers that previously held an incompatible waste or material.

Wastes that are determined to be hazardous must be managed accordingly. Laboratory personnel must work to ensure that wastes are properly labeled in order to prevent materials from becoming "unknown wastes." Disposal of unknown materials is expensive and requires special approval from the HWMU. Labs generating unknown wastes should contact the Hazardous Waste Chemist (x57647). The Chemist will work with the lab to identify and properly dispose of the waste.

A storage container holding a Hazardous Waste that is incompatible with any waste or other materials stored nearby in other containers must be separated from the other materials or protected from them by means of a partition, wall, or other device.

Laboratories are legally defined as "Satellite Accumulation Areas (SAA) and are subject to the SAA requirements.

ALL WASTE CONTAINERS MUST BE

1. Labeled or marked with the words "Hazardous Waste" and a specific description of the waste.
2. Kept in a designated accumulation area (This area should be labeled "**Satellite Accumulation Area.")**
3. Compatible with contents. (i.e. Acid should not be stored in metal cans.)
4. Closed at all times except when waste is being added to container.
5. In secondary containment, if liquid.
6. Stored safely and separately from incompatible materials or waste.
7. Safe for transport, non-leaking containers with screw-on caps.
8. Filled to a safe level. Over-filled bottles are:
    a. Hard to pour safely
    b. Inclined to burst
    c. Apt to leak
    d. Capable of endangering the technician through splashing or shooting up into one's face upon opening.
    e. Going to be **REJECTED**--Contact HWMU for technical assistance.
9. Some processes generate waste or solutions that continue to generate gases. These include preparation of fresh No-Chromix as well as acid or oxidizer/solvent mixtures used in various optics and electronics processes, for example. If you generated such wastes, contact HWMU for instruction for safe storage and to avoid bursting containers. Avoid glass containers for such wastes if possible and cap only tightly enough to be considered "closed" and loose enough to allow pressure to escape.

NOTE: RED BAGS (Biohazard) are **not** to be used for chemical Hazardous Waste collection. These bags are for infectious agents and are to be used for that purpose only.

***** EMPTY CONTAINERS *****

A Hazardous Waste container is considered to be empty if the waste has been removed using common practices typically employed to remove materials from that type of containers (i.e. pumping, pouring, aspirating, etc) and the container contains no more than 1 inch of residue on the bottom, or no more than 3 percent by weight of the total capacity of the container. (This applies to containers less than or equal to 110 gallon in size).

Containers meeting the legal definition of empty can be rinsed and recycled or discarded in the regular trash, provided the container did not contain a "P-Listed" or acutely toxic, Hazardous Waste. A list of P-Listed chemicals can be found at http://www.dec.ny.gov/regs/14898.html

Empty containers that contained a "P-listed" waste must be disposed of as Hazardous Waste. The empty container should be labeled and tagged just like a full container and turned in to the Hazardous Waste Management Unit for disposal.

B. Container Labeling

While Hazardous Waste is being accumulated, the container holding the waste must be marked with the words "**HAZARDOUS WASTE**" and other words that identify the contents of the container. For the purpose of waste determination, a complete inventory of wastes being accumulated in the container must be kept with the container. Hazardous Waste labels are suggested to facilitate proper recordkeeping during waste accumulation.

Label must adequately describe waste.

Abbreviations, codes, or symbols should not be used. This is for quick access to information for emergency responders.

Specific chemical names such as toluene, ethanol or hydrochloric acid must be used. Vague statements such as "hydrocarbons," "organic waste," "various salts of..." are consistently questioned by waste brokers and make it difficult to comply with new EPA treatment standards.

C. Collection

Whenever possible, keep different Hazardous Wastes separate so that disposal options remain clearer and more cost effective. However, if source separation is not practical, collect waste in compatible containers and try to keep it segregated into the following categories:

Miscellaneous Solids (i.e. pipette, gloves, other lab equipment) should be collected separately from liquid wastes.
Halogenated solvents (i.e. methylene chloride, chloroform, carbon tetrachloride)
Non-halogenated solvents (i.e. xylene, toluene, alcohols)

Used oil is collected and recycled. In order to continue this, used oil must be kept as uncontaminated as possible. We require that you keep oils separate from other chemicals, particularly solvents, pesticides, and PCB's. If the oil is contaminated, please indicate so; and it will be managed and disposed of in an approved manner. These containers must be labeled "Used Oil."

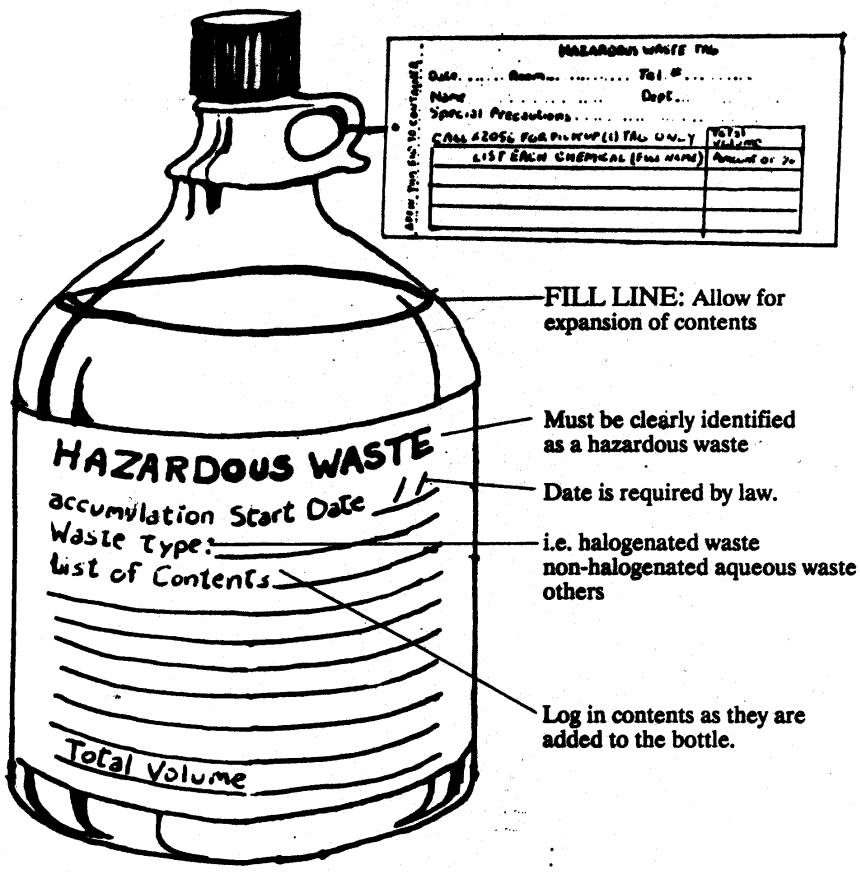
Acids

Bases

Heavy Metals

Special wastes (i.e. cyanide, sulfide, pesticides, oxidizers, organic acids, explosives and peroxides) should each be collected individually whenever possible.

FORMAT TO BE USED FOR COLLECTION CONTAINERS



SAMPLE HAZARDOUS WASTE LABEL

HAZARDOUS WASTE

Accumulation Start Date: ___/___/___

Waste Type:_____

List of Contents and amounts as they are added to container:

(DOES NOT REPLACE WASTE TAG)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

TOTAL VOLUME: _____

D. Gas Cylinders

The disposal of old gas cylinders can be extremely difficult and expensive. Many gas distributors take back used cylinders. However, the protective caps must be in place. It is illegal to transport cylinders without them. Demurrage is often being paid for cylinders until they are returned. Prompt return of cylinders lowers such expenses.

If a gas cylinder becomes old, it may become dangerous due to valve deterioration (especially if it contains a corrosive gas). Such cylinders may become unsuitable for transport and need to be disposed of by a specialist. Unknown gas cylinders also require specialized handling. Resolutions of problems created by aged and unknown cylinders are risky and extremely expensive. A good rule of thumb is to return cylinders as soon as possible after they are depleted and to keep a cylinder no longer than one year. Many companies will not refund deposits or may not even accept a cylinder for return if it has been on-site over one year. Lecture bottles are usually sold outright. However, some companies will accept empties.

Cylinders must not be thrown in the regular trash or incinerator. Lecture bottles that cannot be returned may need to be disposed of as hazardous waste. Therefore, avoid doing business with companies that will not accept used cylinders. Control your inventory to avoid unknown and deteriorated cylinders.

E. Battery Disposal

The proper disposal of batteries depends on the type of battery one is disposing. The Hazardous Waste Management Unit manages used batteries in accordance with the New York State Department of Environmental Conservation (NYSDEC) requirements and guidelines. These can be found on the NYSDEC Website at:
http://www.dec.ny.gov/chemical/72065.html

Batteries fall into two categories; regulated rechargeable and non-rechargeable.

1. Regulated Rechargeable Batteries:
Lead/acid batteries, nickel cadmium (rechargeable), mercury/silver (button batteries), nickel metal hydride and lithium ion batteries all contain hazardous materials. These must be collected for recycling. Recycling these batteries actually generates a small rebate.

2. Non-regulated Batteries:
Alkaline batteries are the most common batteries used. They have been reengineered over the years to eliminate added mercury and other regulated heavy metals. These batteries include your typical AAA, AA, C, D and 9 volts cells. At current time, there is no viable recycling option for these batteries. They should be disposed of in the regular trash.

Many office areas have set up battery collection containers for the regulated batteries. Please check with the administrator or other responsible person in your area to determine if you have one. Otherwise, use one of the other established collection areas.

Drop-off points have been set up in the Medical Center at Photo Illustration, Engineering Stores, the Parking Garage office, the Medical Center Parking service counter.

On River Campus collection areas are located at the service window of the Engineering Stores at 612 Wilson Blvd., Wilson Commons (in the information office), Computer Store at RRL, University IT Center and the Parking Office in Fauver Stadium.

Gross amounts of batteries should be disposed of directly through the Hazardous Waste Management Unit.

If you have questions about what type of battery you have, you may always default on the side of collecting it for recycling. Trained staff sort all batteries collected by type and all batteries collected will ultimately be managed in the manner described above.

Please consider the use of rechargeable batteries. Over time you will save money and help preserve resources.

F. Computer and Used Electronics Disposal

Purpose: To ensure computers and used electronics designated for disposal are collected for disposal in accordance with environmental regulations.

Applicability: All University owned facilities and operations

Background: The United States Environmental Protection Agency and the NYS Department of Environmental Conservation have determined that most computers (CPUs and monitors) will fail the Toxicity Characteristic Leachate Test (TCLP) for lead. This is especially true for the old monitors (cathode ray tubes) which can contain 5 to 8 pounds of lead.

Newer computers may have resale value if they are not damaged or broken during handling. Such value can offset the cost of disposal for non-working components. It is important to not damage equipment during handling.

Disposal Process:

Please contact University IT by emailing ITEquipmentRecovery@Rochester.edu to schedule a pickup. Pick-up service is free for all University locations in Monroe County.

G. Fluorescent Lamp Management Protocol

Used fluorescent lamps and other mercury-containing lamps are regulated as Universal Wastes under State and Federal regulations.

Identification of Mercury-Containing Used Lamps.

1. All fluorescent lamps and some other types of lamps contain added mercury. These include straight tubes of all lengths, U-tubes, O-tubes, compact fluorescent lamps, high intensity discharge lamps, metal halide lamps, sodium vapor lamps,

and UV lamps. Both low mercury (green tip) and regular fluorescent lamps are included per NYS statute.

Requirements of Universal Waste Rule for Managing Used Lamps.

1. Used lamps must be managed in a manner that minimizes the chances of breakage.
2. Used lamps must be collected in structurally sound containers. A proper container is typically an empty intact box that similar lamps were received in.
3. Used lamp containers must be managed in a manner that preserves the integrity of the container.
4. When lamps are not being added or removed from the container, it must be kept closed.
5. The collection containers must bear the markings **"Universal Waste--Used Lamps for Recycling Accumulation Start Date_____"** when the first used lamp is place in the container. HWMU supplies these labels.
6. Be sure to mark the container label with the date that the first used lamp is placed in the collection container.
7. All used lamps must be shipped from University premises within one year of the accumulation start date on the used lamp collection container.

University Requirements and Practical Tips for Packing and Shipping Used Lamps

1. Before lamps can be shipped they must be packaged per USDOT and vendor requirements.
2. University F&S O&M groups are expected to make their best efforts to pack the lamps in accordance with these requirements the first time so that double handling is minimized.
3. Choose an empty lamp box for the same type of lamp that is being disposed.
4. Only same-type and length lamps may be placed in the same outer container unless special arrangements have been made with HWMU.
5. Do not tape used lamps together. All taped together lamps must be separated from each other prior to being placed in the container or the vendor assesses a surcharge.
6. Ensure that there is no debris in the box and that it is structurally sound and capable of being closed. One does not have to reuse the cardboard dividers that typically come in a case of new lamps. In fact, it is advised to throw these out as they make it difficult to completely fill a lamp box.
7. Do not place broken lamps in the same container as whole lamps. Broken lamps must be packaged in an air-tight container and managed as a Hazardous Waste in accordance with the Hazardous Waste protocols as presented in the Hazardous Waste Management Learners' Guide
8. Completely fill a lamp box with used lamps prior to offering it for disposal whenever possible. Partially filled lamp boxes will collapse when stacked on a shipping pallet and creates needless double handling and potential excess lamp breakage.
9. Tape the lamp box shut, or otherwise close the container in a manner appropriate for that container type.

10. Take the container to the area(s) designated by your facility manger.
11. Keep the storage area in an orderly manner and free of clutter. Remember state and federal inspector review Universal Waste storage areas and processes during regular compliance inspections.
12. HWMU will palletize and ensure all used lamp containers meet USDOT and vendor requirements prior to shipment.

H. Silver Recovery from Spent Photographic Fixer

Spent photographic fixer from the development of black and white and color photographs routinely contains enough dissolved silver metal to require that the material be recycled or managed as a Hazardous Waste. Under no circumstances can untreated used photographic fixer be drain disposed.

Departments that generate a significant quantity of used photographic fixer on a regular basis must contact a vendor to set up an on-site silver recovery unit in their area. Arrangements can be made by contacting the Hazardous Waste Management Unit (x52056) or Purchasing Services (x52002). In addition, silver recovery units must be tested weekly to ensure they are working correctly. Please contact the Hazardous Waste Management Unit for more information.

Generators of small quantities of used fixer waste should collect the material in a glass or plastic container labeled with the words “Hazardous Waste – Used Photographic Fixer”. When the container is full, a Hazardous Waste tag should be attached to the container and the Hazardous Waste Management Unit should be called for a pick up.

I. AEROSOL CANS

Most aerosol cans contain products or propellants that are regulated as Hazardous Waste upon disposal. Aerosol cans that are no longer wanted must be disposed of through the Hazardous Waste Management Unit. **This applies to empty, full, or partially full aerosol cans.**

Aerosol cans that are offered for disposal must be managed in accordance with requirements for hazardous waste containers as described in the *Learners’ Guide for Responsible Chemical Waste Management:*

1. Labeled "Hazardous Waste"

2. Kept in a designated accumulation area (This area must be labeled "**Hazardous Waste Satellite Accumulation Area**")

Aerosol cans THAT DO NOT CONTAIN ANY HAZARDOUS PROPELLANTS OR PRODUCTS can be disposed of in the normal trash. This would apply to NONFLAMMABLE aerosols containing non-hazardous materials such as “Canned Air” or other pressurized air cans used for removing dust from electrical components. If you are unsure if your aerosols contain hazardous components call the Hazardous Waste Management Unit (x52056) for a determination.

J. Disposal of Art Materials

Background:
Art supplies contain a variety of hazardous materials that must be managed as Hazardous Waste under USEPA as well as New York State regulations when being disposed. There are specific wastes that are regulated by USEPA and NYS as Hazardous Waste. The requirements for managing these materials are very specific and must be followed exactly. In addition, drain disposal of toxic, flammable other materials that might damage the sewer system, such as excess solids is forbidden by local ordinance. A good informational brochure can be found at the USEPA Region 2 website at http://www.epa.gov/region02/children/k12/english/EHS-in-the-arts.pdf.

Determine if your material is a Hazardous Waste:

Is it flammable?
For the sake of not being too technical, assume all spent solvent and solvent contaminated rags are regulated. Also, note that chlorinated solvents are regulated as toxic and must be managed as Hazardous Waste.

Is it corrosive (pH of 2 or less or 12.5 or greater)?
Etching materials may qualify. Also you may have some photo chemicals. Either take the pH or refer to the MSDS for information. Note that the local sewer ordinance requires the pH to be between 5.5 and 10.0 for drain disposal. Also, the material must not contain any other toxic/noxious materials.

Is it toxic or contain regulated heavy metals?
Metals regulated under the Hazardous Waste regulations (often referred to as RCRA) include: arsenic, barium, cadmium, chromium, lead, mercury, silver, selenium.

The local sewer district also has restrictions on the discharge of antimony, beryllium, copper, iron, manganese, nickel, thallium and zinc. It is also more stringent in its requirements pertaining to the RCRA metals.

Hazardous Waste Disposal:

Do not drain.
Flush, or rinse out items contaminated with any of the above materials into the sink unless specific permission is granted through HWMU. Such permission will be based on a termination by our Hazardous Waste Chemist, or more likely written permission from the county.

Thoroughly pre-clean any items contaminated with the above materials prior to washing or rinsing to a sink. Materials used to pre-clean can be poured into the spent solvent container described below, even if aqueous.

Spent solvents
Collect in a container that is compatible with the materials. We suggest using an empty container of the type used when the material was purchased. This container must be tightly

closed while waste is being stored. It must be labeled **"Hazardous Waste-Spent Paint Related Solvents"** Also be prepared to provide Material Safety Data Sheets for any materials added to the container to enable the staff to make an accurate waste determination. Examples of materials that can be combined in the same container include mineral spirits, alcohols, turpentine, linseed and other "paint thinners". It will be assumed by the HWMU staff that the solvent collection container will be contaminated with RCRA metals, as well, unless it is determined to be otherwise.

Solvent/paint contaminated rags
These have been tested by a local lab and have been determined to contain several of the regulated metals listed above, including lead, cadmium, chromium. Others are possible depending on the pigments used in the paint. Be prepared to provide HWMU with an MSDS for each type of paint used. In addition, solvent contaminated rags can present a fire hazard. Dispose of solvent and/or RCRA metal contaminated rags in the labeled metal drum or small metal container located in the studio area. The drum should be tightly closed at all times when materials are not being added to the drum. It must be labeled **"Hazardous Waste- Solvent and Paint Contaminated Rags and Materials"** Add no other types of waste to this container. Unwanted or empty paint tubes (not larger cans) containing any of the RCRA metals can also be disposed of in the "rags" container.

Call the Hazardous Waste Management Unit (HWMU) for a pickup (x52056) when the container is nearly full.

Acid and Alkali
solutions used in, etching, photography and printmaking, for example will be Hazardous Wastes if they meet the pH conditions stated above. Refer to the MSDS or otherwise make a waste determination. HWMU can help. List contaminants resulting from use of the material in making the waste determination. For example, if an enchant was used on copper, copper would be one of the waste constituents to be accounted for on the Hazardous Waste Tag.

Unused paint and stains
These may contain regulated metals or be flammable. Do not combine these items. Store them in their original cans with the lid tightly closed. Fill out and apply a Hazardous Waste tag to each container and place in the designated storage space for pickup. Dried out latex paint may be thrown in the normal trash as long as it is really dry and does not contain any of the RCRA metals listed above. If not dry, dispose of through HWMU via the protocols prescribed by HWMU. Call 275-2056 if you need more information or help.

Aerosol Spray Cans
Collect empty and partially used aerosols cans for disposal through HWMU. Place a liner in a designated collection container. This could be a lined brute barrel with a tightly fitting lid. Keep the lid on except when waste is added or removed. Label the container **"Hazardous Waste - Spent Aerosol Cans".** HWMU will dispose of these properly.

Clay, minerals
Determine if they are Hazardous Waste. Refer to the MSDS or make a determination based on the information above. If not, dispose of as normal trash.

Glaze Chemicals
Many contain toxic metals. Dispose of through the HWMU. Be prepared to provide an MSDS.

Liquid Glazes
Recycle if possible. If the glazes contain toxic, metals turn into the HWMU for disposal.

Glues and Cements
Water- based– Allow to dry, dispose of in normal trash.
Solvent-based and epoxy– Dispose of through the HWMU.

Dry Pigments
Call HWMU for disposal.

Photo chemicals
Concentrates, solvents and unused chemicals – Call HWMU for specific disposal information.
Used developers are allowed to be drain disposed by the local sewer district.
Used fixer contains silver and must not be drained. Collect in a designated used fixer collection container. This container must bear the label **"Hazardous Waste - Spent Fixer".** The container must be closed except when waste is being added or removed. HWMU has a silver recovery unit and will process the waste and return the empty container.

Some **processor cleaners and stop baths contain chromium**. These must be managed separately from the spent fixer. Place the waste in a container similar to the fixer container. Label it "**Hazardous Waste-spent Stop Bath"** (or cleaner as appropriate). Try using chromate-free products that are becoming more available.

All Hazardous Waste Containers must be:
Labeled with the words "Hazardous Waste" plus a description of the waste,
Closed unless adding or removing waste,
Stored separately from incompatible materials (i.e. no acids with bases, no flammables with acids),
Stored in a safe manner to reduce chances of an accidental release, or other mishap.

Satellite Area Waste Storage Rules:
We require Hazardous Waste to be stored
Near the point of generation,
In a designated area under the control of the generator,
In closed and properly labeled container as described above,
Away from public access,
In a secondary containment tray,
Safely and away from sources of ignition or other potential hazards such as incompatible materials.
Have waste picked up frequently to minimize hazards.

Prior to a waste's being picked up a completed Hazardous Waste Tag must be affixed to each container.
If you are uncertain about what you can throw in the trash, or have other waste management questions please call the Hazardous Waste Management Unit at x52056

K. Disposal of Electrophoresis Buffer Solutions and Gels

Overview: Electrophoresis gels are commonly used in molecular biology laboratories for the identification of DNA and proteins. These gels will typically be agarose-based or polyacrylamide-based. This electrophoresis process utilizes an organic fluorescence dye or an inorganic stain such as Silver (which is an EPA regulated material) to stain the nucleic acids or proteins. Waste by-products of the DNA identification process must be managed and disposed in a manner to protect public health and the environment.

Purpose: To ensure safe, prudent disposal as well as reduce the amount of Hazardous Waste material generated at the University of Rochester. This can be accomplished by choosing less toxic materials and work practices that minimize the overall quantity of waste generated as well as the toxicity of the waste material itself. In cases where safer materials or work practices cannot be employed, waste collection methods per University and regulatory agency requirements are to be followed.

Background: There are a number of different protocols and dyes used in the preparation and use of electrophoresis gels. Gels can be cast with or without dyes. The nucleic acids/proteins can be stained by adding the dye to the sample before electrophoresis, the dye can be added to the running buffer before electrophoresis, or the gel can be placed in a dye solution after electrophoresis has been completed.

Waste Management: Waste disposal requirements will vary depending on the dye used and the methodology used to stain the cells.

Silver containing waste is regulated as a Hazardous Waste by the USEPA. Drain disposal is also forbidden by the Monroe County Sewer District. All unwanted stock solutions gels, contaminated debris (gloves, paper towels, pipet tips) and running buffer solutions that contain silver must be collected for disposal by the Hazardous Waste Management Unit (HWMU).

MUTAGENIC DYES

Ethidium Bromide, Propidium Iodide, Acridine Orange, SYBR® Green I, SYBR® Green II, SYBR® Gold, GelStar. These dyes have been determined to have mutagenic properties.

All gels that have been cast with these dyes in them, unwanted dye stock solutions, and all contaminated debris must be collected for disposal by the HWMU.

Gels that have undergone electrophoresis and staining, and then have been destained - where all excess dye has been washed out the gel (the only dye left in the gel is a trace amount contained in the nucleic acid/protein sample material) can be discarded in the trash.

Contaminated “non-sharp” lab debris (e.g., gloves, pads, towels, tubes, etc.) should be collected and disposed of through the HWMU.

The spent running buffer solutions and destaining solutions that contain the dyes can either be collected and disposed of through the HWMU or collected and run through an approved filter device. The buffer solutions that have been run through the approved filter should be checked under an appropriate light source for complete removal of the dyes, and if it passes (does not fluoresce), the liquid can be disposed of down the drain with a copious amount of water as long as it contains no other materials that would cause it to be regulated as a Hazardous Waste.

The filters that have been used up and are no longer effective must be disposed of through the HWMU.

NONMUTAGENIC DYES

SYBR® Safe, GelRed, **GelGreen**, and **EvaGreen**. These dyes have been determined to be nonmutagenic in Ames testing by independent licensed testing laboratories.

All gels and contaminated "non-sharp" lab debris (e.g., gloves, pads, towels, tubes, etc.) that are processed using this dye can be discarded in the trash.

Spent running buffer solutions and destaining solutions that contain the dyes can either be collected and disposed of through the HWMU or collected and run through a filter device capable of removing the contaminant.

The buffer solutions that have been run through the appropriate filter should be checked under the proper light source for complete removal of the dyes, and if it passes (does not fluoresce), the liquid may be disposed of down the drain with a copious amount of water as long as no other materials are present that would cause the material to be a Hazardous Waste.

The filters that have been used up and are no longer effective must be disposed of through the HWMU.

Waste Management Procedures for Collection of Gels and Related Materials for Disposal through the Hazardous Waste Management Unit

Mutagenic or Toxic Electrophoresis Gels and Contaminated "Non-Sharp" Lab Debris

1. Collect electrophoresis gels and contaminated "non-sharp" lab debris (e.g. gloves, pads, towels, tubes, etc.) into a plastic container (suitable for holding chemicals), or 5 gallon bucket (depending on the volume of waste generated). This container should have a plastic bag as an inner liner. The container must remain closed at all times except when immediately adding or removing wastes from the container. Contact the Hazardous Waste Management Unit if you need a 5 gallon bucket to collect your waste.
2. Mark on the container's label which waste constituents are present in the pail (e.g., "Hazardous Waste - Ethidium Bromide Contaminated Gels, Gloves, Paper").
3. **NO SHARPS**: No sharp items (e.g., needles, Pasteur pipettes, razor blades, etc) are to be placed into the containers or 5-gallon pails. See below for the proper means for disposing of contaminated sharps lab debris.

4. Disposal: Once the 5-gallon pail is 75% full, fill out a Hazardous Waste tag and call x5-2056 for a pickup. An empty replacement pail will be provided at the time of the collection if needed.

Collection and Disposal of Chemically Contaminated Sharps

1. Chemically contaminated sharps (needles, Pasteur pipettes, razor blades) must be collected in an approved sharps shelter (**NOT RED** – use the white/translucent ones). It must be labeled "Hazardous Waste – Chemically Contaminated Sharps". Any biohazard labels should be removed or completely defaced. When the shelter is full, fill out a Hazardous Waste Tag and call x5-2056 for a pickup.

Summary

Disposal of Waste Products From Gel Electrophoresis Using Dyes With Mutagenic Properties	
Name of Dye Used	**Disposal Instructions**
MUTAGENIC DYES Ethidium Bromide Propidium Iodide Acridine Orange SYBR Green I SYBR Green II SYBR Gold GelStar	All gels that have been cast with these dyes in them and unwanted dye stock solutions should be collected and disposed of through the HWMU. Gels that have undergone electrophoresis and staining, and then have been destained - where all excess dye has been washed out the gel (the only dye left in the gel is a trace amount contained in the nucleic acid/protein sample material) can be discarded in the trash. Spent running buffer solutions and destaining solutions that contain the dyes can either be collected and disposed of through the HWMU or collected and run through an approved filter device. The filters that have been used up and are no longer effective must be disposed of through the HWMU. Contaminated "non-sharp" lab debris (e.g., gloves, pads, towels, tubes, etc.) should be collected and disposed of through the HWMU. Chemically contaminated sharps (needles, Pasteur pipettes, razor blades) must be collected in an approved sharps shelter (**NOT RED** – use the white/translucent ones). It must be labeled "Hazardous Waste – Chemically Contaminated Sharps".
Disposal of Waste Products From Gel Electrophoresis Using Non-mutagenic Dyes	
Name of Dye Used	**Disposal Instructions**

NONMUTAGENIC DYES SYBR Safe GelGreen GelRed EvaGreen	All gels and contaminated "non-sharp" lab debris (e.g., gloves, pads, towels, tubes, etc.) that are processed using this dye can be discarded in the trash. Unwanted dye stock solutions, spent running buffer solutions and destaining solutions that contain the dyes can either be collected and disposed of through the HWMU or collected and run through an approved filter device. The filters that have been used up and are no longer effective must be disposed of through the HWMU. Chemically contaminated sharps (needles, Pasteur pipettes, razor blades) must be collected in an approved sharps shelter (**NOT RED** – use the white/translucent ones). It must be labeled "Hazardous Waste – Chemically Contaminated Sharps".

Approved Filters for Electrophoresis Dye Solutions

Company Name	Product Name	Product Code	Phone Number	Website
Amresco, Inc.	Destaining Bags	E732	800-829-2805	http://www.amresco-inc.com/
BD Biosciences-Clontech	BondEX Detoxicification Cartridges	K3080-1	877-232-8995	http://www.clontech.com/
VWR International	Extractor Waste Reduction System	28165-500	800-932-5000	http://www.vwrsp.com/

L. Procedure for Management of RCRA regulated chemotherapy and other EPA-regulated pharmaceutical wastes

Cytotoxic drug wastes and other pharmaceuticals that are regulated under the Resource Conservation and Recovery Act (RCRA) are to be managed through the Hazardous Waste Management Unit (HWMU). The HWMU will provide a container labeled with the words "HAZARDOUS WASTE", a cytotoxic warning label and a list of the chemicals that should be collected in this container (if appropriate). Those chemicals include the following:

Arsenic trioxide **Epinephrine (not salts)** **Nicotine** **Nitroglycerin (not patches)** **Physostigmine** **Physostigmine salicylate**	Chloral Hydrate (CIV) Chlorambucil (chemo) Chloroform Cyclophosphamide (chemo) Daunomycin (chemo) Dichlorodifluromethane Diethylstilbestrol Formaldehyde Hexachlorophene	Mitomycin C (chemo) Paraldehyde (CIV) Phenacetin Phenol Reserpine Resorcinol Saccharin Selenium sulfide Streptozotocin (chemo)

Warfarin >0.3% **Collect empty containers of the above materials in bold type**	Lindane Melphalan (chemo) Mercury	Trichloromonofluromethane Uracil mustard (chemo) Warfarin <0.3%

Any vials that contain any of the above listed materials must be collected in the "HAZARDOUS WASTE" collection container provided by the HWMU. Any empty containers that previous held P-listed Hazardous Waste (highlighted in **BOLD TYPE** on the list above) must also be collected as Hazardous Waste in the container provided by the HWMU. A Hazardous Waste Technician will pick up the container on a weekly basis. A new collection container will be provided to the cancer center Pharmacy at the time of the pickup.

M. Procedure for the Management of antibiotics and waters containing antibiotics.

Antibiotics and solutions containing antibiotics are not permissible for drain disposal under the Monroe County Sewer Use Law. These materials must be collected and stored according to the procedures outlined in this booklet for Hazardous Waste (Part A, B, and C in Section II). When the container is full, a waste tag must be filled out according to the procedure outlined in Section III (below). Finally, follow the procedure in Section IV to arrange for pickup and disposal.

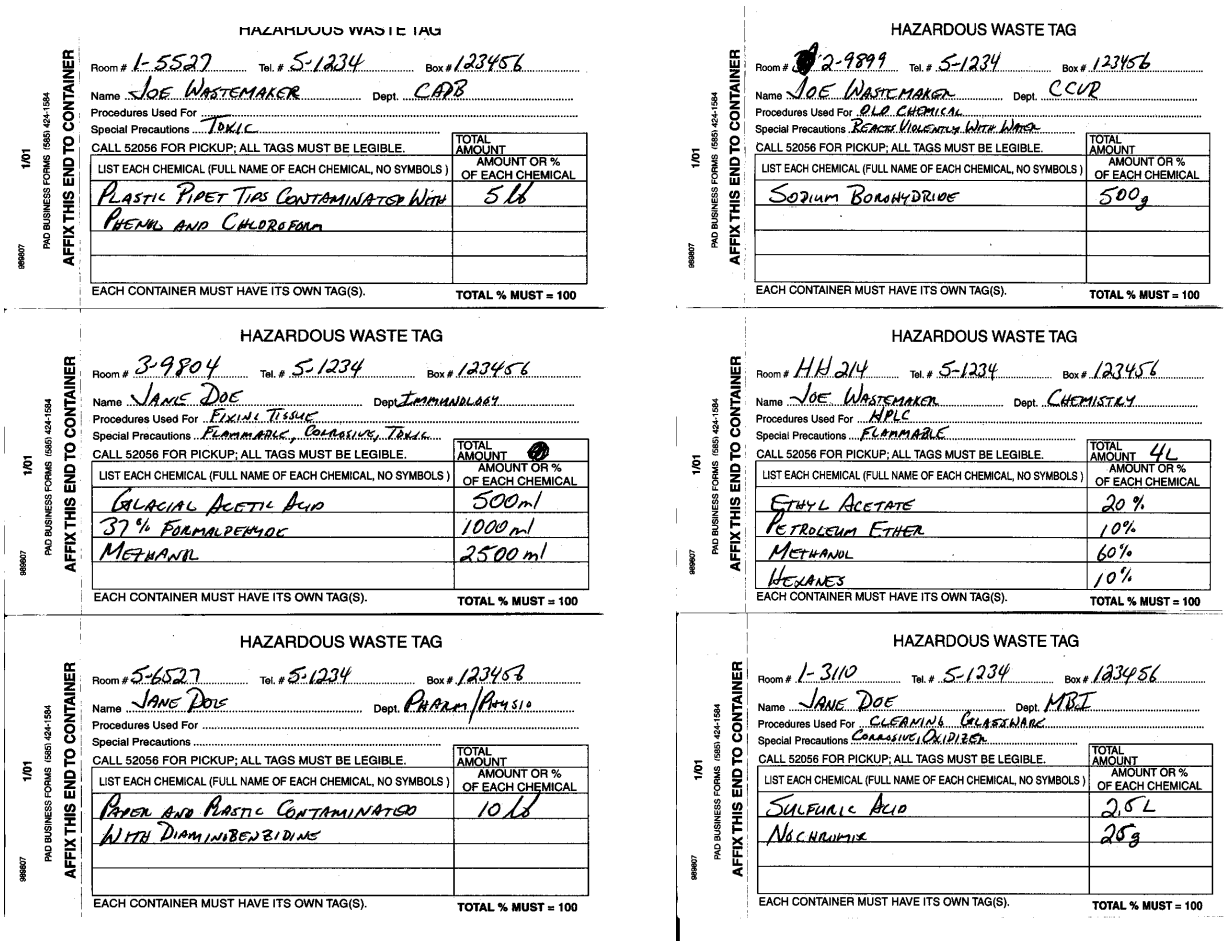
SECTION III

TIPS FOR FILLING OUT HAZARDOUS WASTE TAGS

A Hazardous Waste Tag must be filled out by the waste generator and attached to each container. Each Hazardous Waste Tag and container receives a unique number, and the information on the tag is entered into a computer data base for waste tracking purposes. These tags are **legal documents** subject to review by the EPA and/or NYSDEC. **It is YOUR responsibility as the generator to properly identify the contents of each container**. Please fill them out legibly, accurately, and completely. A Hazardous Waste Tag must be filled out for each container, even the container already has a label. The following information is required:

1. Your Room Number
2. Your Telephone number
3. Your University Post Office Box Number
4. Your Name
5. Your Department Name
6. Procedures that this material is used for.
7. Any Special Precautions (ex. Reacts violently with water, corrosive, flammable, highly toxic)
8. Chemical Name: Full chemical name, no abbreviations (DAB, ETBR, ETOH), no formulas (H2O), no UNKNOWNS. Product names or trade names are acceptable if the manufacture's name and address, or a material safety data sheet can be supplied with the material.
9. Total Amount: For liquids you must list the total volume of waste in the container, and for solids you must list the total weight of material in the container.
10. Amount or Percentage of each chemical – For containers that contain a mixture of chemicals or substances. You must list each chemical by its volume, weight or percentage. The percentages of all items must add up to 100%. If there are more than four items to be listed, you can use more than one waste tag.

Examples: See next page



HAZARDOUS WASTE TAG

Room # 1-5527 Tel. # 5-1234 Box # 123456
Name JOE WASTEMAKER Dept. CADB
Procedures Used For
Special Precautions TOXIC
CALL 52056 FOR PICKUP; ALL TAGS MUST BE LEGIBLE.

LIST EACH CHEMICAL (FULL NAME OF EACH CHEMICAL, NO SYMBOLS)	TOTAL AMOUNT AMOUNT OR % OF EACH CHEMICAL
PLASTIC PIPET TIPS CONTAMINATED WITH	5 lb
PHENOL AND CHLOROFORM	

EACH CONTAINER MUST HAVE ITS OWN TAG(S). TOTAL % MUST = 100

AFFIX THIS END TO CONTAINER
PAD BUSINESS FORMS (585) 424-1584 1/01 989607

HAZARDOUS WASTE TAG

Room # 2-9899 Tel. # 5-1234 Box # 123456
Name JOE WASTEMAKER Dept. CCUR
Procedures Used For OLD CHEMICAL
Special Precautions REACTS VIOLENTLY WITH WATER
CALL 52056 FOR PICKUP; ALL TAGS MUST BE LEGIBLE.

LIST EACH CHEMICAL (FULL NAME OF EACH CHEMICAL, NO SYMBOLS)	TOTAL AMOUNT AMOUNT OR % OF EACH CHEMICAL
SODIUM BOROHYDRIDE	500g

EACH CONTAINER MUST HAVE ITS OWN TAG(S). TOTAL % MUST = 100

AFFIX THIS END TO CONTAINER
PAD BUSINESS FORMS (585) 424-1584 1/01 989607

HAZARDOUS WASTE TAG

Room # 3-9804 Tel. # 5-1234 Box # 123456
Name JANE DOE Dept. IMMUNOLOGY
Procedures Used For FIXING TISSUE
Special Precautions FLAMMABLE, CORROSIVE, TOXIC
CALL 52056 FOR PICKUP; ALL TAGS MUST BE LEGIBLE.

LIST EACH CHEMICAL (FULL NAME OF EACH CHEMICAL, NO SYMBOLS)	TOTAL AMOUNT AMOUNT OR % OF EACH CHEMICAL
GLACIAL ACETIC ACID	500ml
37% FORMALDEHYDE	1000 ml
METHANOL	2500 ml

EACH CONTAINER MUST HAVE ITS OWN TAG(S). TOTAL % MUST = 100

AFFIX THIS END TO CONTAINER
PAD BUSINESS FORMS (585) 424-1584 1/01 989607

HAZARDOUS WASTE TAG

Room # HH 214 Tel. # 5-1234 Box # 123456
Name JOE WASTEMAKER Dept. CHEMISTRY
Procedures Used For HPLC
Special Precautions FLAMMABLE
CALL 52056 FOR PICKUP; ALL TAGS MUST BE LEGIBLE.

LIST EACH CHEMICAL (FULL NAME OF EACH CHEMICAL, NO SYMBOLS)	TOTAL AMOUNT 4L AMOUNT OR % OF EACH CHEMICAL
ETHYL ACETATE	20%
PETROLEUM ETHER	10%
METHANOL	60%
HEXANES	10%

EACH CONTAINER MUST HAVE ITS OWN TAG(S). TOTAL % MUST = 100

AFFIX THIS END TO CONTAINER
PAD BUSINESS FORMS (585) 424-1584 1/01 989607

HAZARDOUS WASTE TAG

Room # 5-6527 Tel. # 5-1234 Box # 123456
Name JANE DOE Dept. PHARM/PHYSIO
Procedures Used For
Special Precautions
CALL 52056 FOR PICKUP; ALL TAGS MUST BE LEGIBLE.

LIST EACH CHEMICAL (FULL NAME OF EACH CHEMICAL, NO SYMBOLS)	TOTAL AMOUNT AMOUNT OR % OF EACH CHEMICAL
PAPER AND PLASTIC CONTAMINATED	10 lb
WITH DIAMINOBENZIDINE	

EACH CONTAINER MUST HAVE ITS OWN TAG(S). TOTAL % MUST = 100

AFFIX THIS END TO CONTAINER
PAD BUSINESS FORMS (585) 424-1584 1/01 989607

HAZARDOUS WASTE TAG

Room # 1-3110 Tel. # 5-1234 Box # 123456
Name JANE DOE Dept. MBT
Procedures Used For CLEANING GLASSWARE
Special Precautions CORROSIVE, OXIDIZER
CALL 52056 FOR PICKUP; ALL TAGS MUST BE LEGIBLE.

LIST EACH CHEMICAL (FULL NAME OF EACH CHEMICAL, NO SYMBOLS)	TOTAL AMOUNT AMOUNT OR % OF EACH CHEMICAL
SULFURIC ACID	2.5L
NOCHROMIX	25g

EACH CONTAINER MUST HAVE ITS OWN TAG(S). TOTAL % MUST = 100

AFFIX THIS END TO CONTAINER
PAD BUSINESS FORMS (585) 424-1584 1/01 989607

Helpful hints:

1. For items such as paper or plastic that is contaminated with a chemical residue, you can use a one line description of the material, and its total weight. Ex. Plastic pipet tips contaminated with phenol and chloroform (2 lbs.). Ex. Ethidium bromide contaminated agarose gel (40 lbs.).
2. If you have a bottle that contains only one item, putting down 100% for the amount is **NOT** acceptable. You must put down what the actual volume or weight of the item is.
3. Make sure that all three pages of the waste tag are legible. Do not use felt tip markers because they don't work well with carbon copies.
4. Make sure that the outside of the waste bottles are clean. Wash/wipe all residues off.
5. Do not allow tags to become contaminated. Other people will be required to handle the tags in the future. Re-write them if necessary.
6. Only tape the left end of the tag to the container.

IV. SCHEDULING A WASTE PICKUP

When the waste container is ready for pickup and the waste tag has been completed, **call HWMU at x52056** This will initiate the waste pickup process. Waste is routinely picked up throughout the University Monday through Friday. Areas generating small infrequent amounts of waste will be included on the next pickup day in that area.

V. WASTE MINIMIZATION

Definition: Waste Minimization is the reduction of waste at the source, not the treatment of waste after it has been generated.

This can be accomplished by recycling and by changing one's habits to become less wasteful.

The best way to limit or eliminate the need for and cost of hazardous waste disposals is to limit or eliminate processes that generate such waste. Here are some suggestions:

What can we do?

Becoming aware of the problem and alerting others is a good first step. For starters, ask yourself these questions:

1. Am I buying wisely? (Remember that disposal costs are sometimes more than the original purchase price for many chemicals. Bulk purchases of chemicals offer no deal if the excess stock is given up for disposal unused.)
2. Am I rotating my stock to avoid outdated chemicals?
3. Am I properly storing my chemicals to prevent aging or, worse yet, spills and fires?
4. Do people in my lab know what to do in the event of a spill to minimize personal danger and the volume of waste material generated as a result of such spills?
5. Am I planning the experiments with waste minimization in mind?
6. Can I substitute non or less hazardous materials during any step of an experiment?
7. Do people in my lab even know what is and what isn’t a “hazardous chemical”?
8. Does the protocol in my lab include proper waste segregation and containerization so that disposal options can remain clearer and more cost effective?
9. Are the facts on my waste tags true and complete?
10. Do I prevent "unknowns" by keeping containers labeled?
11 Do I ever look internally for a needed chemical before buying a fresh bottle?
12. Have I explored possible new procedures and/or equipment modifications aimed at reducing waste generation?
13. Do I have other ideas? Have I shared them?

Think waste minimization--it pays big dividends!

VI: FREE CHEMICALS

The **Hazardous Waste Management Unit** keeps an inventory of chemicals that are suitable for reissue to laboratories at no charge. Many of these are from lab cleanouts and are unopened.

To see a current inventory of chemicals available through the Hazardous Waste Management Unit reissue program visit
http://www.facilities.rochester.edu/protected/haz_waste/chem_list/login.php

To receive chemicals from this list, please submit a blue 312 requisition to HWMU. Please show the six digit number of the chemical, the chemical name and the location code (i.e. RIE). Send the requisition to HWMU at 520 Intercampus Drive, Box RC 270475. The chemicals will be delivered to your lab by a HWMU technician. There is no charge for this service or the chemical(s).

VII. REVIEW OF WASTE DISPOSAL REQUIREMENTS

HWMU will pick up any chemical that is properly packaged and labeled with a waste tag. Disposal is accomplished according to the latest EPA rules and regulations. Chemicals that are good but no longer needed are also accepted. These are added to an inventory of chemicals that are offered free to other University departments.

Call x52056 for a pickup to be scheduled or if you have questions about the service.

The rules for collecting chemicals for disposal are as follow:

Chemical waste must be packed securely to prevent spillage. We recommend glass jugs, metal containers, or thick plastic containers. Containers must have screw type caps--no corks or parafilm. Thin plastic containers such as water jugs are not suitable.

Solid wastes should be kept separate from liquid waste and each other due to differing disposal technologies and regulatory requirements. A good rule of thumb for all waste collection is to maintain as much segregation as possible in order to maintain clearer disposal options. Segregate liquid wastes into different categories:

a. AQUEOUS WASTE (may contain other miscible substances, but major constituent is water)
b. NONHALOGENATED SOLVENTS i.e. xylene, toluene, alcohol
c. HALOGENATED SOLVENTS i.e. methylene chloride, chloroform carbon tetrachloride
d. OIL i.e. vacuum pump oil, motor oil --List any major contaminants, if any.
e. ACIDS
f. BASES
g. SPECIAL WASTES i.e. cyanides, sulfides, oxidizers--Collect separately)

Record amounts of each waste added to solvent collections.

Any compatible mixture of wastes can be accepted, but the contents must be identified on the waste tag.

All chemicals must be listed by complete name. No initials or abbreviations are accepted. The total volume must be recorded as well as the amount or percentage of each chemical. Use one waste tag per container of waste.

Fill only to the bottom of the neck of the container.

Disposal of chemicals into the sanitary sewer system is permitted only for small amounts of substances that can be successfully treated by the Monroe County Sewer District's facilities and must be in compliance with the guidelines set forth in the Sewer Use Law of Monroe County. See Attachment III.

A training video is available by contacting HWMU.

EMERGENCY RESPONSE: Contact Security (x13) or URMES (x53241) for any chemical emergency.

ATTACHMENT I

HAZARDOUS WASTE

LAWS AND REGULATIONS

STATUTES

Resource Conservation and Recovery Act as amended

Comprehensive Environmental Response Compensation and Liability Act as amended

Hazardous Materials Transportation Act as amended

REGULATIONS

40 CFR Parts 260-271
http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?sid=c9854ae354bd93375d57c0c3fba73d8d&c=ecfr&tpl=/ecfrbrowse/Title40/40tab_02.tpl

49 CFR Parts 171 through 177
http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?sid=bcb0a9ea9c65fa923a2f8a2e5d4c6494&c=ecfr&tpl=/ecfrbrowse/Title49/49tab_02.tpl

6NYCRR Parts 371, 372, 373
http://www.dec.ny.gov/regs/2491.html

Monroe County Sewer Use Law
http://www.monroecounty.gov/des-industrialwaste.php

ATTACHMENT II

LISTED HAZARDOUS WASTES

AND

CHARACTERISTIC HAZARDOUS WASTE

A. §371.4 - Lists of Hazardous Wastes

(a) General

(1) A solid waste is a hazardous waste if it is listed in this section, unless it has been excluded from this list under section 370.3(a) and (b) of this Title.

(Note: Although the names used for chemicals in this list include common names, trade names and specific isomer names under various chemical naming systems, where any one of these previous names are used, all other equivalent names shall be considered to be listed.)

(2) The commissioner will indicate the basis for listing the classes or types of wastes listed in this section by employing one or more of the following Hazard Codes:

Ignitable Waste (I) Corrosive Waste (C) Reactive Waste (R) Toxicity Characteristic Waste (E) Acute Hazardous Waste (H) Toxic Waste (T)

Appendix 22, infra, identifies the constituent which caused the commissioner to list the waste as a Toxicity Characteristic Waste (E) or Toxic Waste (T) in subdivisions (b) and (c) of this section.

(3) Each hazardous waste listed in this section is assigned an EPA Hazardous Waste Number which precedes the name of the waste. This number must be used in complying with the notification requirements of section 3010 of the Resource Conservation and Recovery Act and certain recordkeeping and reporting requirements under Parts 372, 373, and 376 of this Title (see subdivision 370.1(e) of this Title).

(4) The following hazardous wastes listed in subdivisions (b) and (c) of this section are subject to the exclusion limits for acutely hazardous waste established in subdivision 371.1(f) of this Title: EPA Hazardous Waste Number F020, F021, F022, F023, F026, and F027.

(b) Hazardous waste from non-specific sources.

(1) The following solid wastes are listed hazardous wastes from non-specific sources unless they are excluded under sections 370.3(a) and (c) of this Title and listed in Appendix 24, infra:

Industry and EPA Hazardous Waste No.	Hazardous Waste	Hazard Code
Generic:		
F001	The following spent halogenated solvents used in degreasing:	(T)

	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.	
F002	The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane and 1,1,2-trichloroethane; 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 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.	(I,T)*
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	(T)

	(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.	
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 wastewater 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 of 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	Waste (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 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.	(H)
F023	Wastes (except wastewater and spent carbon from hydrogen	(H)

	chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, 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.)	
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 subdivision (b) or (c) of this section.)	(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	Waste (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 formulation containing compounds derived from these chlorophenols. (This listing does not include formulations containing Hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.)	(H)
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, 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	(T)

	in accordance with subdivision 371.4(f) 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 oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in: oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in subparagraph 371.4(b)(2)(ii) (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 371.1(e)(1)(xii)('a'), if those residuals are to be disposed of.	(T)
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge-Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum	(T)

	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 subparagraph 371.4(b)(2)(ii) (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 section 371.4 of this Part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other hazardous waste retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028.)	(T)

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

(d) Discarded commercial chemical products, off-specification species, container residues, and spill residues thereof.

The following materials or items are hazardous wastes if and when they are discarded or intended to be discarded as described in subparagraph 371.1(c)(2)(i) of this Part, when they are mixed with waste oil or used oil or other material and applied to the land for dust suppression or road treatment, when they are otherwise applied to the land in lieu of their original intended use or when they are contained in products that are applied to the land in lieu of their original intended use, or when, in lieu of their original intended use, they are produced for use as (or as a component of) a fuel, distributed for use as a fuel, or burned as a fuel:

(1) any commercial chemical product, or manufacturing chemical intermediate having the generic name listed in paragraph (5) or (6) of this subdivision;

(2) any off-specification commercial chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraph (5) or (6) of this subdivision;

(3) any residue remaining in a container or inner liner removed from a container that has been used to hold any commercial chemical product or manufacturing chemical intermediate having the generic names listed in paragraphs (5) or (6) of this subdivision, or any residue remaining in a container or inner liner removed from a container that has been used to hold any off-specification chemical product or manufacturing chemical intermediate, which if it met specifications, would have the generic name listed in paragraphs (5) or (6) of this subdivision, unless the container is empty as defined in 371.1(h)(2).

(Note: Unless the residue is being beneficially used or reused, or legitimately recycled or reclaimed, or being accumulated, stored, transported or treated prior to such use, reuse, recycling or reclamation, EPA and the Department consider the residue to be intended for discard, and thus, a hazardous waste. An example of a legitimate reuse of the residue would be where the residue remains in the container and the container is used to hold the same commercial chemical product or manufacturing chemical intermediate it previously held. An example of the discard of the residue would be where the drum is sent to a drum reconditioner who reconditions the drum but discards the residues. All waste resulting from the rinsing or cleansing of the container or inner liner, by a non-aqueous solvent, is a hazardous waste. All waste resulting from the aqueous rinsing or cleansing of the container or inner liner is a hazardous waste unless exempt pursuant to subclause 371.1(d)(l)(ii)('d')('4').)

(4) any residue or contaminated soil, water or other debris resulting from the cleanup of a spill into or on any land or water of any commercial chemical product or manufacturing chemical intermediate having the generic name listed in paragraph (5) or (6) of this subdivision, or any residue or contaminated soil water or other debris resulting from the cleanup of a spill, into or on any land or water, of any off-specifications chemical product or manufacturing chemical intermediate which, if it met specifications, would have the generic name listed in paragraph (5) or (6) of this subdivision.

(Note: The phrase "commercial chemical product or manufacturing chemical intermediate having the generic name listed in..." refers to a chemical substance which is manufactured or formulated for commercial or manufacturing use which consists of the commercially pure grade of the chemical, any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole active ingredient. It does not refer to a material, such as a manufacturing process waste, that contains any of the substances listed in paragraphs (5) or (6). Where a manufacturing process was is deemed to be a hazardous waste because it contains a substance listed in paragraph (5) or (6), such waste will be listed in either subdivision (b) or (c) of this section, or will be identified as a hazardous waste by the characteristics set forth in section 371.3 of this Part.)

(5) Acute Hazardous Waste.

The commercial chemical products, manufacturing chemical intermediates or off-specification commercial chemical products or manufacturing chemical intermediates referred to in paragraphs (1) through (4) of this subdivision, are identified as acute

hazardous wastes (H) and are subject to the small quantity exclusion defined in paragraph 371.1(f)(5) of this Title.

Empty containers that held substances with a P listed waste code below remain a Hazardous Waste, even when empty, unless the container or inner has been triple rinsed. The rinsate must be collected as a Hazardous Waste.

(Note: For the convenience of the regulated community the primary hazardous properties of the materials have been indicated by the letters T (Toxicity), and R (Reactivity). Absence of a letter indicates that the compound only is listed for acute toxicity.) 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 H3 AsO4
P012	1327-53-3	Arsenic oxide As2 O3
P011	1303-28-2	Arsenic oxide As2 O5
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	Benzeneethanamine, 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. w/ (3aS-cis)-1,2,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo[2,3-b]indol-5-yl methylcarbamate ester (1:1)
P001	181-81-2	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-, (1 aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta, 7aalpha)-
P051	172-20-8	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	1534-52-1	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	Ethanimidothioc 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)
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]-
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-
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	315-18-4	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 cynaide Ni(CN)2
P075	154-11-5	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 NO2
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 OsO4, (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-
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.
P048	51-28-5	Phenol, 2,4-dinitro-
P047	1534-52-1	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)
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	154-11-5	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	157-24-9	Strychnidin-10-one, & salts
P018	357-57-3	Strychnidin-10-one, 2,3-dimethoxy-
P108	157-24-9	Strychnine, & salts
P115	7446-18-6	Sulfuric acid, dithallium(1+) salt
P109	3689-24-5	Tetraethyldithio pyrophosphate
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 Tl2 O3
P114	2039-52-0	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 [(H2 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	314-62-1	Vanadium oxide V2 O5
P120	1314-62-1	Vanadium pentoxide
P084	4549-40-0	Vinylamine, N-methyl-N-nitroso-
P001	181-81-2	Warfarin, & salts, when present at concentrations greater than 0.3%
P121	557-21-1	Zinc cyanide
P121	557-21-1	Zinc cyanide Zn(CN)2
P205	137-30-4	Zinc, bis(dimethylcarbamodithioato-S,S')-,
P122	1314-84-7	Zinc phosphide Zn3 P2 , when present at concentrations greater than 10% (R,T)
P205	137-30-4	Ziram.

FOOTNOTE 1: CAS Number given for parent compound only.

(6) The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products referred to in paragraphs (1) through (4) of this subdivision, are identified as toxic waste (T) unless otherwise designated and are subject to the small quantity generator exclusion defined in paragraphs 371.1(f)(1) and (7) of this Title.

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

These wastes and their corresponding EPA Hazardous Waste Numbers are:

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	194-75-7	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, 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)
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	81-07-2	1,2-Benzisothiazol- 3(2H)-one, 1,1-dioxide, & salts
U203	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-
U141	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-
U090	94-58-6	1,3-Benzodioxole, 5-propyl-
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-,
U367	1563-38-8	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-
U064	189-55-9	Benzo[rst]pentaphene
U248	181-81-2	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
U238	51-79-6	Carbamic acid, ethyl ester
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.
U409	23564-05-8	Carbamic acid, [1,2-phenylenebis (iminocarbonothioyl)]bis-, dimethyl ester.
U373	122-42-9	Carbamic acid, phenyl-, 1-methylethyl ester.
U178	615-53-2	Carbamic acid, methylnitroso-, ethyl ester
U097	79-44-7	Carbamic chloride, dimethyl-
U114	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
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

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 H2CrO4, 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	194-75-7	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)
U395	5952-26-1	Diethylene glycol, dicarbamate.
U108	123-91-1	1,4-Diethyleneoxide
U028	117-81-7	Diethylhexyl phthalate
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)
U174	55-18-5	Ethanamine, N-ethyl-N-nitroso-
U404	121-44-8	Ethanamine, N,N-diethyl-
U394	30558-43-1	Ethanimidothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-, methyl ester.
U410	59669-26-0	Ethanimidothioic acid, N,N'-[thiobis[(methylimino)carbonyloxy]]bis-, dimethyl ester
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-
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	1111-54-6	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 H2S
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	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	116-54-7	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- (I)
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-methylester
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.
U194	107-10-8	n-Propylamine (I,T)
U083	78-87-5	Propylene dichloride
U387	52888-80-9	Prosulfocarb.
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	181-07-2	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 SeS2 (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 [(H2N)C(S)]2S2, 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
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	181-81-2	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 Zn3P2, when present at concentrations of 10% or less

FOOTNOTE 1: CAS Number given for parent compound only.

(e) Wastes containing polychlorinated biphenyls (PCBs).

(1) All solid wastes containing 50 parts per million (ppm) by weight (on a dry weight basis for other than liquid wastes) or greater of polychlorinated biphenyls (PCBs) are listed hazardous

wastes, excluding small capacitors as defined in paragraph (3) of this subdivision and PCB Articles drained in accordance with subparagraphs (2)(ii) and (iii) of this subdivision. PCB Articles that contain less than 50 ppm PCBs are not regulated as hazardous waste. Oils in or from electrical equipment whose PCB concentration is unknown, except circuit breakers, reclosers, and cable must be assumed to contain between 50 and 500 ppm PCB and are listed hazardous waste. "PCB" and "PCBs" means any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees. Any chemical waste, combination of waste, or environmental media that contains less than 50 ppm PCBs are listed hazardous wastes only as specifically provided in paragraph (2) of this subdivision. Wastes that may contain PCBs include dielectric fluids, contaminated solvents, waste oil, heat transfer fluids, hydraulic fluids, dredge spoils, and material contaminated as a result of spills. The Hazardous Code for these PCB wastes shall be Toxic Waste (T).

"Environmental media" means naturally occurring, non-living substances, including soil, sediment, rock, groundwater, surface water, surface runoff, air, and only such animal and vegetable matter as may be incidentally contained therein (e.g., soil and water bacteria, underground roots, skeletal remains, etc.).

These wastes shall have Hazardous Waste Numbers assigned as follows: .DEC Hazardous Waste Number Waste

B001 PCB Oil (concentrated) from transformers, capacitors, etc.

B002 Petroleum oil or other liquid containing 50 ppm or greater of PCBs, but less than 500 ppm PCBs. This includes oil from electrical equipment whose PCB concentration is unknown, except for circuit breakers, reclosers and cable.

B003 Petroleum oil or other liquid containing 500 ppm or greater of PCBs.

B004 PCB Articles containing 50 ppm or greater of PCBs, but less than 500 ppm PCBs, excluding small capacitors. This includes oil-filled electrical equipment whose PCB concentration is unknown, except for circuit breakers, reclosers, and cable.

B005 PCB Articles, other than transformers, that contain 500 ppm or greater of PCBs, excluding small capacitors.

B006 PCB Transformers. "PCB Transformers" means any transformer that contains 500 ppm PCB or greater.

B007 Other PCB Wastes including contaminated soil, solids, sludges, clothing, rags and dredge material.

(Note: PCBs are also regulated by 40 CFR Part 761. A person must comply with both this Part and 40 CFR Part 761 (see subdivision 370.1(e)).

(2) Drained PCB Articles.

(i) Except as provided in subparagraphs (ii) and (iii) of this paragraph, drained PCB Articles containing at least 50 ppm PCBs are regulated as hazardous waste.

(ii) PCB Articles, except capacitors, that contain between 50 and 500 ppm PCB, are no longer regulated as PCB listed hazardous waste provided that all free flowing liquid has been drained from the article. The drained liquid is a listed hazardous waste, as is any solvent used for flushing.

(iii) ('a') Hydraulic machines containing less than 1000 ppm PCB are no longer regulated as PCB listed hazardous waste provided that all free flowing liquid has been drained from the hydraulic machine. The drained liquid is a listed hazardous waste, as is any solvent used for flushing.

('b') Hydraulic machines containing 1000 ppm PCB or greater are no longer regulated as PCB listed hazardous waste provided that all free flowing liquid has been drained from the hydraulic machine, and the drained hydraulic machine is flushed with a solvent in which PCBs are readily soluble. The solvent to be used for flushing must contain less than 50 ppm PCB. The drained liquid and the solvent used for flushing are listed hazardous wastes.

(3) Definitions.

(i) "PCB Article" means any manufactured article, other than a PCB container, that contains PCBs and whose surface(s) has been in direct contact with PCBs. "PCB Article" includes capacitors, transformers, electric motors, circuit breakers, reclosers, voltage regulators, switches (including sectionalizers and motor starters), electromagnets, cable, hydraulic machines, pumps, pipes, and any other manufactured item which is formed to a specific shape or design during manufacture, has end use function(s) dependent in whole or in part upon its shape or design during end use, and has either no change of chemical composition during its end use or only those changes of composition which have no commercial purpose separate from that of the PCB Article.

(ii) "Small Capacitor" means a capacitor which contains less than 1.36 kg (3 lbs.) of dielectric fluid. The following assumptions may be used if the actual weight of the dielectric fluid is unknown. A capacitor whose total volume is less than 1,639 cubic centimeters (100 cubic inches) may be considered to contain less than 1.36 kg (3 lbs.) of dielectric fluid and a capacitor whose total volume is more than 3,278 cubic centimeters (200 cubic inches) must be considered to contain more than 1.36 kg (3 lbs.) of dielectric fluid. A capacitor whose volume is between 1,639 and 3,278 cubic centimeters may be considered to contain less than 1.36 kg (3 lb.) of dielectric fluid if the total weight of the capacitor is less than 4.08 kg (9 lbs.)

(4) Testing Procedures. The procedures in 40 CFR 761.60(g) (see subdivision 370.1(e) of this Part) will be used to determine the concentration of PCBs, unless a petition for equivalent testing or analytical methods is submitted and approved per section 370.3 of this Title.

B. §371.3 - Characteristics of Hazardous Waste

(a) General.

(1) A solid waste, as defined in section 371.1(c) of this Part, which is not excluded from regulation as a hazardous waste under section 371.1(e), is a hazardous waste if it exhibits any of the characteristics identified in this section.

(Note: Section 372.2(a) of this Title sets forth the generator's responsibility to determine whether the waste exhibits one or more of the characteristics identified in this section.)

(2) A hazardous waste which is identified by a characteristic in this section is assigned every EPA Hazardous Waste Number that is applicable as set forth in this section. This number(s) must be used in complying with the notification requirements of section 3010 of RCRA and all applicable recordkeeping and reporting requirements under Part 372 through Subpart 373-3, and Part 376 of this Title.

(3) For purposes of this section, the commissioner will consider a sample obtained using any of the applicable sampling methods specified in Appendix 19, infra, to be a representative sample. A person may employ a sampling method alternative to those listed in Appendix 19 and is not required to demonstrate the equivalency of that method under the procedures set forth in subdivisions 370.3(a) and (b) of this Title.

(b) Characteristic of ignitability.

(1) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(i) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume, and has a flash point less than 60 degrees (140 degrees F). Flash point must be determined by a Pensky-Martens Closed Cup Tester Materials Standard D-93-79 or D-93-80; or a Setaflash Closed Cup Tester, using the method specified in the American Society for Testing Materials (ASTM) and the test method specified in ASTM Standard D-3278-78; or a determined by an equivalent test method approved by the commissioner as set forth in 6NYCRR 370.3(b) (see section 370.1(e) of this Title).

(ii) 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.

(iii) It is an ignitable compressed gas, as defined in 49 CFR 172 (see section 370.1(e) of this Title), and as determined by the test methods described in that regulation or equivalent test methods approved by the commissioner as set forth in section 370.3(b) of this Title.

(iv) It is an oxidizer as defined in 49 CFR 173.127 (see section 370.1(e) of this Title).

(2) A solid waste that exhibits the characteristic of ignitability has the EPA Hazardous Waste Number of D001.

(c) Characteristic of corrosivity.

(1) A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

(i) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using Method 9040 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA publication number SW-846, as incorporated by reference in subdivision 370.1(e) of this Title.

(ii) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55 degrees C (130 degrees F) as determined by the test method specified in the National Association of Corrosion Engineers (NACE) Standard TM-01-69 as standardized in "Test Methods for Evaluating Solid Waste, Physical/Chemical

Methods", EPA Publication SW-846, as incorporated by reference in subdivision 370.1(e) of this Title.

(2) A solid waste that exhibits the characteristics of corrosivity has the EPA Hazardous Waste Number of D002.

(d) Characteristic of reactivity.

(1) A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:

(i) It is normally unstable and readily undergoes violent change without detonating;

(ii) It reacts violently with water;

(iii) It forms potentially explosive mixtures with water;

(iv) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment;

(v) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment;

(vi) It is a capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement;

(vii) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure; and

(viii) It is a forbidden explosive, a Class A explosive or a Class B explosive as defined in 49 CFR 173.51 and 173.53 (see section 370.1(e) of this Title).

(2) A solid waste that exhibits the characteristic of reactivity has the EPA Hazardous Waste Number of D003.

(e) Toxicity characteristic.

(1) A solid waste exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, Test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in subdivision 370.1(e) of this Title, the extract from a representative sample of the waste contains any of the contaminants listed in Table 1 at a concentration equal to or greater than the respective value given in that Table. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Method 1311, is considered to be the extract for the purpose of this subdivision.

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

Contaminant Concentration for Toxicity			
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

FOOTNOTE 1: Hazardous waste number. FOOTNOTE 2: Chemical abstracts service number. FOOTNOTE 3: Quantitation limit is greater than the

calculated regulatory level. The quantitation limit therefore becomes the regulatory level. FOOTNOTE 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.

(2) 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.

ATTACHMENT III

MONROE COUNTY SEWER USE LAW

(EXCERPTS)

Use of Public Sewers

Section 3.1 Limitation of Use:

A. Use of County Sewer System: The use of the County Sewer System and public sewers tributary thereto shall be strictly limited and restricted, except as provided in Subdivision 3.1B hereof, to receive and accept the discharge of sewage and other wastes, including industrial wastes, generated on, or discharged from, real property lying within the bounds of the Monroe County Pure Waters Sewer Districts as established, altered, changed, modified, reduced, enlarged, combined and/or consolidated by action of the Legislature of the County of Monroe.

B. Exception to Limitations: The discharge of sewage, including industrial wastes and other wastes generated on or discharged from real property lying outside the bounds of Monroe County Pure Waters Sewer Districts, into the County Sewer System and public sewers tributary thereto shall be made only with express consent of the Director, the respective District Administrative Boards and/or the Monroe County Legislature and upon the issuance of a permit setting forth the terms and conditions for such discharge.

Section 3.2 Health Regulations: All requirements, directives and orders calling for the mandatory use of the County Sewer System or public sewers tributary thereto for the proper discharge of sewage, including industrial wastes and other wastes, shall be established and given by the local municipality, the Monroe County Department of Health, DEC, EPA or such other State or Federal Agencies which have enforcement powers.

Article IV

Materials and Substances Excluded from Public Sewers

Section 4.1 Exclusion of Unpolluted Waters: No person shall discharge or provide a connection for discharging or draining into any County Sewer System or public sanitary sewer tributary thereto any storm water, surface water, ground water, roof runoff, subsurface drainage, uncontaminated cooling water or unpolluted industrial process water, nor drain any catch basin, lake, swamp, pond or swimming pool, except with the permission of the Director pursuant to a properly issued permit or if such connection or drainage is into a designated "combined sewer" or storm sewer.

Section 4.2 Prohibited Materials, Substances and Wastes: Except hereinafter provided, no person shall discharge or cause to be discharged, or allow to run, leak, or escape into any public sewer, or into any private sewer connected with a public sewer any of the following described materials, substances or wastes, except such small quantities as may be present in normal household wastes or specifically permitted by the Director.

A. Any gasoline, benzene, naptha, fuel oil, alcohols, or other flammable or explosive liquid, solids or gases.

B. Any water or wastes having a pH lower than (5.5) or having a pH higher than (10.0) or having any other corrosive properties capable of causing damage or hazard to the County Sewer System, or personnel employed in its operation and maintenance.

C. Any solids or viscous substances capable of causing obstruction to the flow in sewers or other interference with the proper operation of the sewer system. Examples of prohibited substances are, but not limited to, the following: construction materials, ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastic, wood, paunch manure, coffee grounds, fur, wax, cement, hops, spent grain, whole blood, or filter media.

D. Any waters or wastes containing toxic, poisonous, or hazardous solids, liquids or gases in sufficient quantity, either singly or by interaction with other wastes, to injure or interfere with any sewage treatment process, or to constitute a hazard to humans or animals, or to create a public nuisance, or to create hazardous conditions in the receiving waters. Examples of hazardous substances shall include, but not be limited to: metal plating tank wastes, petroleum tank bottoms, redistilled solvent bottoms, metal sludges or cyanide plating wastes.

Section 4.3 Regulation of Certain Materials, Substances, and Water or Waste Discharges: No materials, substances, waters or wastes including any wastes listed within the Rules and Regulations of the Pure Waters Districts shall be discharged which shall be found to harm the County Sewer System, the sewage treatment process, have an adverse effect on the receiving waters or would endanger life, limb, public property or shall constitute a nuisance.

The criteria used in promulgating Rules and Regulations of the Pure Waters Districts regulating such discharges include such factors as: quantities of said wastes in relation to flows and velocities in the sewers, materials of construction of the sewers, nature of the sewage treatment process, the capacity of the sewage treatment facilities and the likelihood of harm, injury or nuisance. The characteristics of the effluent subject to review will be determined from the sampled wastewater collected at a control manhole prior to entering the County Sewers System. Substances, materials or wastes prohibited in the first instance, but subject to review are:

A. Any liquid or vapor having heat in amounts which will inhibit biological activity in the treatment plant resulting in interference or causing damage, but in no case, heat in such quantities that the temperature exceeds 65 degrees C (150 degrees F) at the discharge point or 40 degrees C (140 degrees F) at the treatment plant, unless alternate temperature limits have been approved.

B. Any water or waste containing fats, wax, grease or oils, whether emulsified or not, in excess of one hundred (100) milligrams per liter, or containing substances which may solidify or become viscous at temperatures between thirty-two (32) degrees and one hundred fifty (150) degrees Fahrenheit (0 and 65 degrees Celsius).

C. Any garbage that has not been properly shredded or triturated.

D. Any waters or wastes containing substances in amounts determined to be potentially objectionable or toxic.

E. Any water or wastes containing phenolic compounds or other objectionable tasting and/or odorous substances, in concentrations exceeding limits which are established in the Rules and Regulations necessary to meet the requirements of the State, Federal or other public agencies having jurisdiction for such discharge to the receiving waters.

F. Any radioactive wastes or isotopes of such half-life or concentration which exceed limits established by the applicable State or Federal Regulations or the Director. See Section 6.2.

G. Materials which contain or cause:

1. Adverse concentrations of inert suspended solids (such as, but not limited to Fuller's earth, lime slurries and lime residues) or dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate).

2. Aesthetically unacceptable discoloration at the treatment plant or in the receiving waters such as, but not limited to, dye wastes and vegetable tanning solutions.

3. Except as provided for under Article X, Biochemical Oxygen Demand (BOD), total suspended solids, total phosphorous or chlorine requirements in such quantities as constitute an unacceptable additional load on the sewage treatment works.

4. Unusual volume of flow or concentration of wastes constituting “slugs” as defined herein.

H. Waters or wastes containing substances in concentrations not amenable, or only partially amenable, to treatment or reduction by the sewage treatment plant processes resulting in treated sewage effluent not meeting requirements of Federal and State agencies having regulatory authority over the discharge of effluent into the receiving waters

Section 4.4 Action by the Pure Waters Districts: Pure Waters Districts, after a Hearing, shall either prevent the discharge of unacceptable water and wastes or issue a permit which is properly conditioned upon findings and the standards of safety prescribed by this law or the Rules and Regulations of the Pure Waters Districts. The Rules and Regulations of the Pure Waters Districts shall include surcharges, pretreatment requirements, control over quantities or rates of discharge, time of discharge and holding facilities, and any measure or combination of measures which are necessary to preserve the County Sewer System, and the health, safety and well being of the employees, the community and the receiving waters.

Section 4.5 Emergency Action by the Director: The Director shall take any action necessary to protect the public health, safety or welfare without a prior Hearing or order of the Administrative Board in the event any discharge which, in the opinion of the Director, will cause serious, imminent harm, injury or adversely effect the County Sewer System, any person, or the receiving waters. A timely review of any emergency action by Administrative Board Hearing shall be accomplished to determine what, if any, permanent action shall be deemed necessary. The Director, or employees under his supervision, acting upon the belief that an emergency exists, shall be indemnified and held harmless against any personal liability which may arise in the performance of his duties to protect the public health, safety, welfare, or property of the County.

Article V

Substances Which May be Conditionally Permitted

Section 5.1 Substances Generally Prohibited: Waters bearing miscellaneous substances in concentrations above the standards set for normal sewage shall not be discharged into the County Sewer System or public sewers tributary thereto, unless the Rules and Regulations of the Pure Waters Districts or upon a finding by the Director and/or the Administrative Board that such concentration will not adversely affect any of the biochemical, chemical or other sewage treatment processes, sewage system or receiving waters. The Director must be contacted immediately to make a determination if any questionable wastes or waste waters are being considered for discharge to the sewer systems. Examples of prohibited substances include, but are not limited to, the following:

A. Antibiotics
B Elemental or ionic Bromine, Iodine, Chlorine, Flourine
C. Creosols or Creosotes
D. Phenol and Phenolic compounds that convert to Phenol in the sewerage system
E. Sulfonamides, toxic dyes (organic or mineral)
F. Metal finishing chemicals, electroplating process chemicals or metal sludges
G. Petroleum tank bottoms or redistilled solvent bottoms
H All strong oxidizing agents such as Chromates, Dichromates, Permanganates, etc.
I. Any reducing agents causing hazardous conditions in the sewerage system
J. Chemical compounds producing toxic, flammable or explosive gases, either upon

acidification

K. Wastes from industrial processes or hospital procedures containing viable pathogenic organisms

MONROE COUNTY PURE WATER DISTRICTS
RULES AND REGULATIONS

Article II, Section 10:

"Normal Sewage" shall mean sewage, industrial wastes or other wastes, which when analyzed, show concentration values with the following characteristics based on daily maximum limits:

a. B.O.D.	300 mg/1
b. Chlorine Demand	25 mg/1
c. C.O.D.	600 mg/1
d. Total Suspended Solids	300 mg/1
e. Total Phosphorus, as P	10 mg/1

Permissible concentrations of toxic substances and/or substances the Department wishes to control:

The concentration in sewage of any of the following toxic substances and/or substances the Department wishes to control shall not exceed the concentration limits specified when discharged into the County Sewer System; metal pollutants are expressed as <u>total</u> metals in mg/1 (ppm): the following pollutant limits are based on daily maximum values:

a. Antimony (Sb)	1.0 mg/1
b. Arsenic (As)	0.5 mg/1
c. Barium (Ba)	2.0 mg/1
d. Beryllium (Be)	5.0 mg/1
e. Cadmium (Cd)	1.0 mg/1
f. Chromium (Cr)	3.0 mg/1
g. Copper (Cu)	3.0 mg/1
h. Cyanide (CN)	1.0 mg/1
i. Iron (FE)	5.0 mg/1
j. Lead (Pb)	1.0 mg/1
k. Manganese (Mn)	5.0 mg/1
l. Mercury (Hg)	0.05 mg/1
m. Nickel (Ni)	3.0 mg/1
n. Selenium (Se)	2.0 mg/1
o. Silver (Ag)	2.0 mg/1
p. Thallium (Tl)	1.0 mg/1
q. Zinc (Zn)	5.0 mg/1