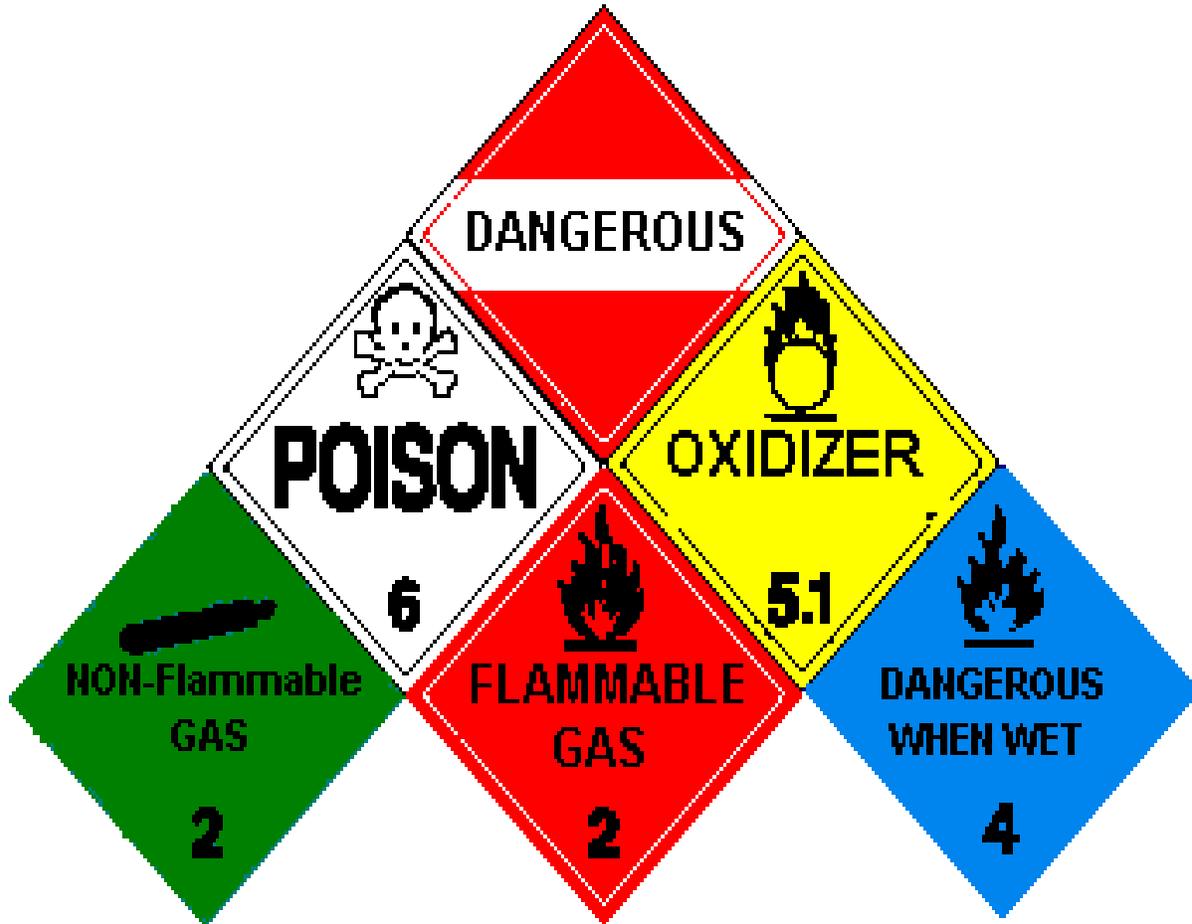


**University of Hawaii, Community College**



**Hazardous Material and Hazardous Waste  
Management Program**

**September 2000**  
Revised August 2019

## Dear Colleagues

The University of Hawaii Community Colleges and University of Hawaii of Hawaii College has a fundamental obligation to safeguard the health, safety, and welfare of our students, personnel, and the visiting public whenever they participate in an official College activity. It is the responsibility of the College to provide for and maintain, through implementation of environmental, health and safety programs, conditions and practices that provide safe and healthful campus environment. In keeping with this commitment, the Hazardous Material and Hazardous Waste Management Program was developed.

This revised 2019 Hazardous Material and Hazardous Waste Management Program (HMMP) is designed to ensure the protection of College personnel and the environment from potential hazards associated with hazardous materials and hazardous waste. It will also assist the college in achieving compliance with applicable federal, state and county regulations. The HMMP is for your reference in managing hazardous materials and hazardous waste on the campuses.

It is our responsibility as members of the University of Hawaii community to be committed to ensure the environmental, health and safety of our campus. We are committed to follow and comply with the Hazardous Material and Hazardous Waste Management Program. This HMMP will be effective immediately.

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Environmental Health and Safety  
University of Hawaii, Community College  
January 2019

## **Purpose**

This program outlines requirements for the management of hazardous materials and the disposal of hazardous waste at University of Hawaii, Community Colleges. These requirements are based on federal, state and county regulations. Adherence to this program will ensure the proper management of hazardous materials and hazardous wastes, reduce overall costs (by reducing disposal cost and minimizing the use of hazardous materials), and avoid potential civil and/or criminal liabilities. This plan is applicable to both University of Hawaii CC and UH Maui College. Failure to comply with these requirements may subject University of Hawaii CC and/or individuals to fines and civil or criminal prosecution. Additionally, proper management of hazardous materials reduces disposal costs.

## **Applicability**

This program applies to all personnel that purchase, store, transport, manage, use, and dispose of hazardous materials and/or hazardous wastes.

## **Responsibilities**

All applicable personnel must become familiar with the hazardous materials in their area and with the UHCC Hazardous Materials and Hazardous Waste Management Program. They will contact the UHCC Environmental Safety Specialist, Ph: 808-956-9464, if in doubt about the requirements of this program or about how to properly dispose of waste.

Individual investigators, supervisors, workers, students, laboratory staff, visitors, etc. are considered the actual originators (generators) of these regulated materials. Therefore, it is the responsibility of each generator to identify any and all hazardous wastes that he or she might be producing, and to assure the waste is handled in a manner consistent with the requirements listed in this document.

### **I. RESPONSIBLE PERSONNEL**

#### **A. All personnel must**

- Become familiar with the hazardous materials in their area and with this UHCC hazardous material and hazardous waste management program.
- Use authorization to purchase form (Attachment 1) to obtain approval for the purchase of hazardous material.
- Submit an authorization to use hazardous material form (Attachment 2) for grant approval
- Provide a semi-annual inventory of hazardous materials (Attachment 3) and an annual inventory of hazardous wastes (Attachment 4).

- Store and label waste properly.
- Properly identify and make waste determination according to federal and state regulations.

**B. Designated program coordinators**

The Chancellor or their designee, is responsible for overall coordination of the Hazardous Material and Hazardous Waste Management Program. The Chancellor or their designee shall ensure that the Program Coordinators listed below have current training.

The following personnel are designated as responsible for the implementation of this program in their respected areas of responsibility (**or any operation that uses hazardous materials with the potential of creating hazardous waste**):

|                                  |                                  |
|----------------------------------|----------------------------------|
| Chemistry Lab                    | Chemistry Instructor             |
| Biology Lab                      | Biology Instructor               |
| Automotive Technology (AMT) Shop | AMT Instructor                   |
| Autobody Shop                    | Autobody Instructor              |
| Art Department                   | Art Instructor                   |
| Photography Lab                  | Photography Instructor           |
| Operations and Maintenance Shop  | O&M Supervisor                   |
| Agriculture Department           | Agriculture Instructor           |
| Student Health Center            | Health Center Nurse Practitioner |
| Nursing Classroom/labs           | Nursing Division Chair           |
| Ceramics                         | Ceramics Instructor              |
| UH CC, Coordinator               | Chancellor or their designee     |

All above personnel are required to attend the initial Hazardous Waste Generator training and the annual refresher Hazardous Waste Generator training. EHS will provide the training and upon satisfactory completion of the training will issue training certificates.

This Hazardous Material Management Program is subject for review annually to maintain current practices, methods, and regulatory requirements. Revisions to this program require EHS approval.

## II. HAZARDOUS MATERIAL MANAGEMENT

- A. **Training certificates.** UHCC program coordinators must submit copies of their training certificates to the VCAS prior to purchasing or disposing of hazardous chemicals.
- B. **Authorization to purchase hazardous materials.** The VCAS approval is required for the purchase or requisition of all hazardous materials. The Authorization to Purchase Hazardous Materials Form (Attachment 1), must be complete and submitted to VCAS at the time any purchase order for hazardous materials is initiated. If approved, a copy of the form will be provided to you for attachment to your purchase order or requisition. The purpose of the VCAS approval is to ensuring the safe storage, handling and eventual disposal of the material while minimizing the cost to UHCC. All requests should be submitted for approval for purchase two weeks prior to purchasing chemicals.
- C. **Approval to use extremely hazardous materials.** As part of the grant approval process (ORS Form 5, item 4 under PI certification) a specific form for the use of certain hazardous materials has been developed (Attachment 2). This form is similar to those already in place for the use of radioactive and biohazard materials.
- D. **Inventory Control Procedures**
  - 1. **Semi-Annual Inventory of Hazardous Materials.** The UHCC programs that uses and store hazardous materials are required to submit semi-annual inventories to the VCAS. The semi-annual inventory form, Attachment 3, will help UHCC manage existing hazardous materials, monitor on-going usage, and prevent unnecessary accumulation. Inventories are due October 1 and May 1 or each year. As part of the inventory procedure, UHCC programs are required to inspect the condition of all hazardous material containers to ensure that hazardous materials are stored in containers which are in good condition and which are properly labeled.
  - 2. **Annual Inventory of Hazardous Wastes.** UHCC programs that generate hazardous wastes are required to submit annual waste inventories to the VCAS. Waste inventory forms (Attachment 4) shall be submitted to the VCAS on May 1. The VCAS will submit a copy of the inventory form to the UHCC Environmental Safety Specialist to evaluate waste inventory. To prepare the inventory to be submitted for quote for EPA licensed vendors for packaging, transportation and disposal of the hazardous waste. As part of the inventory procedure, UHCC programs are required to inspect the condition of all hazardous material containers to ensure that hazardous materials are stored in containers which are in good condition and which are properly labeled.

**3. Inventory of Special Wastes.** While certain wastes are not hazardous, they also cannot be disposed of in a sanitary landfill or down the drain, and may necessitate special disposal procedures. These non-hazardous wastes should be included in Waste Inventory Form for proper disposal.

**E. Audit Program.** The audit program will assist in maintaining a safe working and academic environment. VCAS and/or the Environmental Health and Safety Specialist will conduct periodic audits of the campus to review the current operations with respect to all applicable safety, health and environmental policies and regulations. The following issues will be reviewed: hazardous material storage, hazardous and acutely hazardous waste accumulation, Safety Data Sheet availability, hazardous waste accumulation areas, and emergency plans. A report indicating any corrective actions that are necessary and suggesting any improvements will be provided by the VCAS.

**F. Storage of Safety Data Sheets (SDS).** All chemical manufacturers and suppliers of hazardous chemicals must furnish an SDS with each initial shipment and furnish new SDS information upon request. SDSs generally contain information such as the following:

- Chemical composition
- Physical characteristics and chemical properties
- Fire, explosion and reactivity hazards
- Health hazard information and symptoms of overexposure
- Protective equipment recommendations
- Handling and storage precautions
- Cleanup and disposal procedures
- Emergency first aid procedures

Federal and state law requires that written SDSs must be kept in proximity to the area where products are stored and must be **readily available** to all employees at any time. SDSs must also be available for emergency personnel or any state or federal agency that requests them. It is the responsibility of the supervisor in each area to ensure that all SDSs are kept in an accessible storage area and are updated. If an SDS is missing or incomplete, it is likely that you can obtain a copy from the Internet or from the manufacturer. Requests for missing SDSs should be made in writing and sent by fax, and a copy of the request should be kept in your file.

As required by UHCC Chemical Safety Plan and UHCC Hazard Communication Program.

### **III. HAZARDOUS WASTE MANAGEMENT**

- A. Campuses that create EPA regulated hazardous waste are regulated by their “generator status”. The status is the Hazardous waste program which is divided into three possible categories. Each category is regulated by standards which relate to the total volume of EPA regulated waste generated at the campus each calendar month, as well as the total amount of hazardous waste in storage. Requirement for management of hazardous waste can vary greatly depending on the campus generator status, which can legally change on a month-by-month basis for the campus.**

The EPA and HI DOH regulates facilities generating hazardous waste in one of the three following categories of generator status: Very Small Quantity Generator, Small Quantity Generator, and Large Quantity Generator.

#### **1. Very Small Quantity Generator**

By regulations, UHCC campuses that are categorized as Very Small Quantity Generators (VSQC) if:

- Generate less than 100 kilograms (220 pounds) of EPA regulated waste in any given month.
- No more than 2,200 pounds of EPA regulated waste 9or 2.2 pounds of acutely hazardous waste, P-listed), may be on site at any one time.

VSQG hazardous waste is exempt from most RCRA regulations. However, these facilities:

- Must identify all hazardous waste they generate.
- May send wastes to a facility that:
  - Beneficially uses or reuses, or legitimately recycles or reclaim waste.
  - Is permitted by EPA or the state to treat waste prior to beneficial use or reuse, or legitimately recycling or reclamation.

#### **2. Small Quantity Generator.**

By regulations, UHCC campuses that are categorized as Small Quantity Generators (SQG) if:

- Generate  $\leq$  100 kilograms and no more than 1,000 kilograms (2,200 pounds) of EPA regulated hazardous waste in any calendar month.
- Onsite accumulation time does not exceed 180 days.
- No more than 1 kilogram (2.2 pounds) per month of acute hazardous waste is generated.
- Total onsite accumulation cannot exceed more than 6,000 kilograms (13,200 pounds).

- B. Waste Determination.** It is the responsibility of the generators to make the waste determination for their waste. The responsibility is to determine whether the waste is a hazardous waste (RCRA hazard waste or non-RCRA hazardous waste) or a non-hazardous waste. All waste determinations must be made according to the specific federal and state definitions summarized in Attachment 5. The UHCC Environmental Safety Specialist (808-956-9464) can and will assist you in making a waste determination. (see ATTACHMENT 5)

A waste determination must be done as soon as waste is collected into a waste container. The waste determination will be documented on the Hazardous (Chemical) Waste Tag. Most facilities produce wastes consistent in character. Therefore, what is often the most confusing aspect of the regulations – characterization and classification – becomes a periodic verification function.

Materials are classified as hazardous waste based on the manner in which they are disposed and the hazards their disposal will present to human health and safety, as well as potential environmental damage. For a chemical to become a hazardous waste, it must first meet the regulatory definition of “Solid Waste”.

**1. What is a waste?** A waste is:

- A useless by-product of an operation
- A material which is to be disposed
- Any material which can no longer be used
- A manufacturing or process by-product

**2. How do I determine if a waste is hazardous?**

**a. Contact the Environmental Health and Safety.** Environmental Safety Specialist for the Community Colleges (808-956-9464) will assist you in making the determination of whether a waste is RCRA regulated waste, Non RCRA hazardous waste or a non-hazardous waste.

**b. Review the Safety Data Sheets.** SDSs may provide information that will assist you and the EHSO office in making a proper hazardous waste determination.

**C. Accumulation of Wastes.**

- 1. Limits on Waste Generation.** To maintain the status of conditionally exempt small quantity generator, UHCC **may not** generate more than 100 kilograms (approximately one half of a 55-gallon drum, 27 gallons, or 220 pounds) of hazardous waste. UNIVERSITY OF HAWAII CC also may not generate more than 1 kilogram (2.2 pounds) of acute hazardous waste in one month.

2. **Limits on Waste Accumulation.** To maintain the status of conditionally exempt small quantity generator, UHCC **may not** have more than 1000 kilograms (approximately five 55-gallon drums, or 275 gallons, or 2200 pounds) of total accumulated hazardous waste and no more than 1 kilogram (2.2 pounds) of accumulated acute hazardous waste at any time.
3. **Designation of Waste Management Area.** UHCC programs generating hazardous waste should establish a safe area near the point of generation for the temporary storage of that waste before disposal by a licensed contractor. The area should be neat and orderly, containers should not be stacked upon one another or containers of liquid should not be stored on their side. The VCAS will hire a licensed hazardous waste contractor to transport the waste to an EPA permitted hazardous waste treatment, storage and disposal facility.

#### D. Storage of Hazardous Waste

##### 1. Waste Containers

- a. **Labeling.** All hazardous waste containers must be labeled with the Chemical Waste Tags (Attachment 6). The Chemical Waste Tag must be filled out as soon as waste is collected into a waste container.
  - Please fill out tags completely. All information requested on the tag is necessary to assist in the proper labeling of the waste container. Any incomplete tags are just as dangerous as no tags at all.
  - Chemical constituents are required with the estimated.
  - Please provide pH for all liquids.
  - Hazardous waste determination. Please check the appropriate items on the tag to accurately describe the waste characteristic.
- b. **Closed Containers.** All hazardous waste containers must remain closed except when waste is being added to them.
- c. **Containers in Good Condition.** Containers used for wastes must be in good condition (i.e. no rusting, cracks or structural defects).

Use of original chemical product container for hazardous waste storage is a good management practice. UHCC does not allow hazardous waste to be stored in containers that previously held household products such as bleach, detergents, or any food products. It is not permitted to put the following type of solid

materials into containers of liquid hazardous waste: pipettes, magnetic stirrers, vials, test tubes, filters, pH paper.

If a container is broken or begins to leak, the material must be transferred to a container in good condition. The material composition must be compatible with the material to be stored and incompatible materials must not be stored in proximity to one another. Package materials in sturdy cardboard boxes or plastic waste containers. Cushion the material in the containers to prevent breakage. If cardboard boxes are used which originally held other chemicals, the name of the chemical must be covered over or defaced. Failure to do so constitutes improper marking as to contents and is an EPA and OSHA regulation violation.

**Secondary Containment.** Secondary containment are required for containers of liquid waste under the following circumstances:

1. When waste is stored in 55-gallon drums
2. When the waste is stored on the floor.
3. When the waste is stored in a fume hoods that have a drain.
4. When the waste is stored within four (4) feet of sink
5. When necessary to separate incompatibles or high hazard wastes.

Plastic tubs can be used as secondary containments. Consult with the UHCC Environmental Safety Specialist (808-956-9464) regarding appropriate containment when a 55-gallon drum is used to collect waste.

- d. Separate Incompatible Materials/Waste.** Incompatible materials shall be segregated by HAZARD CLASS, i.e. Toxic-Reactive-Ignitable-Corrosive-Oxidizers. Examples of incompatible materials are: acids/bases, organics/oxidizers, and flammable liquids/oxidizers. Unknowns and high hazard materials such as cyanides, organic peroxides, pyrophorics, water reactives and explosives shall be packaged separately regardless of quantity. Training will be provided to assist in segregation of incompatible materials. If there are any questions, please call the UHCC Environmental Safety Specialist (808-956-9464) for assistance.

**E. Hazardous Waste Disposal.** The disposal of hazardous waste requires that a licensed hazardous waste contractor be hired to dispose of the waste. Please submit the Annual Hazardous Waste Inventory form to the VCAS. All waste that you wish to have disposed must be listed on the form.

**1.** Drain disposal prohibited. No hazardous materials/waste may be disposed of down the drain. All liquid prior to drain disposal (except known clean water) shall be reviewed prior to any drain disposal. In addition, City and County Ordinances prohibit disposal of the following additional items down the drain:

- Fats and greases, if their concentration and physical dispersion results in separation and adherence to sewer structures.
- Storm water, surface water, groundwater, roof runoff, subsurface drainage, cooling water, swimming pool water or other unpolluted drainage.
- Liquid or vapor having a temperature of >150 degrees Fahrenheit.
- Any water or waste containing >100 ppm, by weight, of fat, oil or grease.
- Gasoline, benzene, naphtha, fuel oil, or other flammable or explosive liquid, solid or gas.
- Garbage that has not been properly shredded. Garbage from commercial food establishments is prohibited.
- Ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch manure or any other solid or viscous substance capable of causing obstruction to the flow in sewers.
- Water or wastes having a pH lower than 5.5 or higher than 9.5 having any other corrosive property capable of causing damage to the sewage works or its personnel.
- Water or wastes containing a toxic or poisonous substance of sufficient quantity to injure or interfere with any sewage treatment process or cause a hazard to humans or animals.
- Noxious or malodorous gas or explosive liquids or substance capable of endangering public property and safety, or creating a public nuisance.

#### **IV. EMERGENCY SPILL PROCEDURES**

You must have a specific spill emergency plan and provide information and training to individuals working in your area regarding the plan. It is a good idea to post the emergency procedures and emergency phone numbers in the work area. Personnel working with hazardous chemicals should be able to answer the question: "What would I do if this material spilled?"

Spill kits with instructions, absorbents, reactants, and protective equipment should be available to clean up minor spills. A **minor spill** is one that does not spread rapidly, does not

endanger people or property except by direct contact, does not endanger the environment, and the workers in the area are capable of handling safely without the assistance of safety and emergency personnel. **All other chemical spills are considered major.**

The following are general procedures for the handling of spills.

1. In the event of a spill, attend to anyone who may have been contaminated or hurt, if it can be done without endangering yourself.
2. Turn on the fume hood(s) and open windows where this can be done without endangering yourself.
3. If flammable materials are spilled, de-energize electrical devices if it can be done without endangering yourself.

#### **A. Minor Spills**

- If you have any questions regarding spill clean up requirements, please contact the Vice Chancellor of Administrative Service, Community College Environmental Safety Specialist (808-956-9464).
- Ensure protective apparel is resistant to the spilled material. Neutralize acids and bases, if possible using neutralizing agents such as sodium carbonate or sodium bisulfate.
- Control the spread of liquids by containing the spill. Absorb liquids by adding appropriate absorbent materials, such as vermiculite or sand, from the spill's outer edges toward the center. Paper towels and sponges may also be used as absorbent material, but this should be done cautiously considering the character of the spilled material.
- Collect and contain the cleanup residue and any materials used to clean up the spill by scooping them into a plastic bucket or other appropriate container and properly disposing of the waste as hazardous waste.
- Decontaminate the area and affected equipment. Ventilating the spill area may be necessary.
- Document what happened, why, what was done, and what was learned. Such documentation can be used to avoid similar instances in the future. Major incidents are almost always preceded by numerous near misses.

#### **B. Major Spills**

- If the spill is major, evacuate and secure the area from all personnel.
- If flammable liquid is spill, secure all ignition sources.
- If the spill is major contact the Fire Department (911), Vice Chancellor of Administrative Service (984-3253), UHCC Environmental Safety Specialist (808-956-9464) Environmental Health and Safety Office at the UH Manoa Campus (808-956-8660).

## C. Reporting Requirements

- After the initial spill response, contact the Vice Chancellor of Administrative Service, UHCC Environmental Safety Specialist (808-956-9464), Environmental Health and Safety Office at the UH Manoa campus (808-956-8660) to determine whether there are any federal or state reporting requirements. Some reporting obligations are immediate, and must be made within 24 hours.

## V. SPECIFIC INFORMATION ON THE DISPOSAL OF VARIOUS MATERIALS/WASTE

The individual possessing or generating the material/waste retains the primary responsibility for the material/waste. The Vice Chancellor of Administrative Service, UHCC Environmental Safety Specialist at (808-956-6494) and the Environmental Health and Safety Office at the UH Manoa campus (808-956-8660) provides information on requirements and assistance in handling the materials. Specific information on various types of materials is given below.

**BATTERIES:** Lithium, nickel/cadmium or mercury batteries shall be stored at the hazardous waste accumulation site for contract disposal. Vehicle batteries are recyclable and arrangements with local vendors can be made. Operations and Maintenance handle disposal of batteries from State vehicles.

**BIOLOGICAL MATERIALS:** For biohazardous wastes, refer to the published University biohazardous waste disposal guidelines or contact the EHSO Biological Safety Officer (808-956-3197) for information concerning the handling and disposal of biological materials. Remains from dissections shall be properly disposed of.

**COMPRESSED GASES:** Compressed gas cylinders should be returned to the vendor. A return agreement with the vendor should be included in the contract. Without such an agreement the return or disposal of the cylinders is difficult and very costly, contact the UHCC Environmental Safety Specialist (808-956-9464) for assistance.

**CONTROLLED SUBSTANCES:** The handling and disposal of controlled substances (i.e. drugs and other substances listed in 21 CFR 1308) are the responsibility of the permit holder.

**FLUORESCENT LIGHT BALLASTS:** The UHCC Auxiliary Services Department (984-3232) removes non-leaking ballast. Ballast which may contain PCBs, contact the UHCC Environmental Safety Specialist (808-956-9464), Environmental Health and Safety Office at the UH Manoa campus (808-956-8660) for assistance concerning leaking ballast or any ballast known to contain PCBs.

**FLUORESCENT LIGHT TUBES:** The UHCC Auxiliary Services Department (984-3232) removes and disposes of fluorescent light tubes.

**HAZARDOUS CHEMICALS AND HAZARDOUS WASTE:** The “College” will hire a contractor to dispose of hazardous wastes. Efforts should be made to determine if others could use excess hazardous chemicals in the department or facility prior to submitting for contract disposal. Chemicals considered non-hazardous waste (see "Non-hazardous Waste" below) could be disposed of in the municipal sanitary landfill or sanitary sewer.

**MERCURY:** Items containing functional mercury (e.g. light switches, barometers and thermometers) shall be stored at a hazardous waste accumulation site for contract disposal.

**MIXED WASTE:** Mixed waste is defined as materials that possess a radioactive or biological hazard as well as an unrelated chemical hazard (e.g. potassium dichromate solution contaminated with Carbon-14). Contact the Environmental Health and Safety Office at the UH Manoa campus Radiation Safety (808-956-6475) as applicable for assistance in the proper disposal of these materials.

**NON-HAZARDOUS WASTE:** Listed below in Table 1 are typical laboratory chemicals that are not considered hazardous wastes by the U.S. Environmental Protection Agency. If the facility refuses contract permits the disposal of the solid chemicals in Table 1, then they can be disposed of as ordinary trash. The containers should be labeled and marked “non-hazardous” to mitigate any concern by the refuse collectors. Alternatively, the materials can be collected for disposal as non-hazardous waste in the periodic waste disposal shipments. Liquid chemicals or chemical solutions can be disposed of to the sanitary sewer, if the requirements of the applicable county ordinances or the facility industrial waste water discharge permit are met. Alternatively, the materials can be collected for disposal as non-hazardous waste in the periodic waste disposal shipments.

**TABLE 1: NON-HAZARDOUS WASTE**

|   |   |
|---|---|
| Sugars<br>(e.g., sucrose, glucose, mannose)   | Silica Gel  |
| Starch  | Alumina (aluminum oxide)  |
| Naturally occurring Amino Acids   | Calcium Fluoride  |
| Citric Acid and its Sodium,<br>Potassium, Magnesium, Calcium<br>and Ammonium Salts. | Lactic Acid and its Sodium,<br>Potassium, Magnesium, Calcium and<br>Ammonium, Salts |
| Sodium, Potassium, Calcium,<br>Strontium, and Ammonium Sulfates                     | Sodium, Potassium, Calcium,<br>Magnesium, Strontium and<br>Ammonium Phosphates      |
| Sodium, Potassium, Magnesium<br>and Ammonium Chlorides                              | Sodium, Potassium, Magnesium, and<br>Calcium Borates                                |
| Silicon Dioxide   | Sodium, Potassium, Ammonium<br>Acetates   |
| Boron, Magnesium, Copper Oxides   | Sodium, Potassium, Magnesium,<br>Calcium, and Ammonium Carbonates                   |

**OILS AND TRANSFORMER FLUID:** The VCAS will assist with disposal of used pump oil. Used motor oil is recyclable through local vendors. Operations and Maintenance handle used motor oil from University vehicles.

Transformer fluid will be handled on a case-by-case basis, contact the Environmental Health and Safety Office at the UH Manoa campus (808-956-8660) for assistance. The following requirements apply to used oil:

- Used oil may only be stored in containers that are in good condition and not leaking.
- Containers, aboveground storage tanks, and fill pipes must be labeled or marked clearly with the words “**Used Oil.**”
- Upon detection of a release of used oil, a generator must stop the release, contain the used oil, clean up and manage properly the used oil and other materials, and if necessary, repair or replace any leaking used oil storage containers. If a release of used oil occurs, contact the Vice Chancellor for Administrative Services (984-3253), Environmental Safety Specialist (808-956-9464), Environmental Health and Safety Office at the UH Manoa campus (808-956-8660) for information regarding cleanup, and special regulatory reporting requirements which may apply.

**PAINT WASTE (Auto body):** Excess paint or waste paint containing cadmium, chromium, lead or mercury will not be recycled but will be disposed of as hazardous waste. Other paint waste generated by the Auto body Program will be stored in a marked container labeled, "Paint Waste for Recycling". On a regular basis, the paint waste will be processed through the paint solvent recycler. After recycling, the remaining sludge will be checked for ignitibility. If the sludge is ignitable, it will be disposed of as hazardous waste. If it is not ignitable, it will be disposed in the municipal sanitary landfill. Thinner solvent extract can be used as product.

**PHOTOGRAPHIC CHEMICALS:** Photographic fixer will must be stored in capped container and labeled, "Fixer for Recycling". Photographic fixer solution may contain silver salts after use. Silver is an EPA toxic characteristic waste and must be recycled or disposed of as a hazardous waste. If your facility has a silver recovery unit, it should be used to process the used fixer in accordance with the manufacturing instructions. This would include ensuring that the effluent from the unit meets the requirements for safe drain disposal and that the unit filter, when full, is sent for recycling. If your facility does not have a silver recovery unit, there are contractors who will furnish one for a fee or for the value of the silver recovered. Alternatively, the used fixer solution can be handled and disposed of as a hazardous waste.

**RADIOACTIVE MATERIALS:** Refer to the University Radiation Safety Manual or contact the UH Manoa campus (808-956-8660) for information concerning the proper handling and disposal of radioactive material.

**SHARPS AND GLASSWARE:** Glassware not contaminated with radiological, biological or hazardous chemical material shall be placed in a puncture resistant container labeled "glass" or "broken glass". It will be picked up by the Auxiliary Services staff and disposed of. Refer to the published University biohazardous waste disposal guidelines or contact the Environmental Safety Specialist (808-956-9464) for information on the handling and disposal of sharps or glassware contaminated with biological or infectious material. Refer to the University Radiation Safety Manual or contact the Environmental Health and Safety Office at the UH Manoa campus (808-956-8660) for information on the proper handling and disposal of sharps or glassware contaminated with radioactive material. Glassware or sharps contaminated with hazardous chemicals should be rinsed to decontaminate them and then disposed of as non-contaminated glassware or sharps (i.e. placed in a sharps container). Broken glassware contaminated with hazardous chemicals should be placed in a puncture resistant container (e.g. bottle, plastic container or can over-pack), labeled with the name of the chemical and disposed of as hazardous chemical waste.

## **VI. HAZARDOUS WASTE MINIMIZATION**

### **A. Buying Chemicals in Smaller Amounts.**

The "large economy size" may cost less to buy, but disposal costs, in most cases, are several times the initial cost of the material. Many of the bottles of excess or waste chemicals sent for disposal are full or 3/4 full. Everyone needs to try to accurately estimate the amount of a chemical they expect to use.

## **B. Recycling and Redistribution**

Efforts should be made to find someone in the laboratory or department who can use the hazardous material before it is submitted to the VCAS as waste for contract disposal.

## **C. Use of Less Hazardous or Non-hazardous Materials**

The following provides some examples of the use of less hazardous or non-hazardous materials; everyone is encouraged to think of some others that may be applicable to their research or instructional materials.

**Cleaning Solutions:** Chromerge, chromic acid and dichromate cleaning solutions are not desirable from a waste disposal prospective, as they cannot be made non-hazardous and are expensive to dispose of. There are many non-toxic biodegradable cleaning solutions that can be used instead of chromic acid. For extremely dirty glassware a product called Nochromix, which uses sulfuric acid and an organic oxidizer in place of chromium can be used. While this requires neutralization of the acid for ordinary disposal, it is far less costly to dispose of than chromium solutions. A number of alternative cleaning solutions are listed below. These are all available from Fisher Scientific, who has the University contract for laboratory supplies. NoChromix, Alconox, Liquinox liquid detergent, Citranox, Fisherbrand sparkleen, and FL-70 Concentrate.

**Drying Agents:** The safest common drying agents are calcium chloride, silica gel, molecular sieves and calcium sulfate (Drierite). These are recommended because of their low toxicity and stability. Drying agents that pose varying degrees of hazard and disposal problems include:

Phosphorus pentoxide which generates highly corrosive phosphoric acid and heat on contact with water. This material also has to be disposed of as a hazardous.

Magnesium perchlorate (Dehydrite) which is a strong oxidizer and may cause fires or explosions on contact with organic materials. This material has to be disposed of as a hazardous waste.

**Thermometers:** Mercury thermometers should be replaced with non-mercury thermometers whenever possible. Broken mercury thermometers create spills that are a potential health hazard, time consuming to clean up, and are one of the most expensive hazardous wastes to dispose of. Non-mercury thermometers with equivalent accuracy are available for temperature ranges of -20 to 250 degrees Centigrade. Check your laboratory supply catalog for more information. If mercury containing equipment is used, then a mercury spill kit and personnel knowledgeable in its use is required in the laboratory or facility.

**UNIVERSITY OF HAWAII OF HAWAII COMMUNITY COLLEGE - UNIVERSITY OF  
HAWAII  
PROCUREMENT AUTHORIZATION FOR HAZARDOUS MATERIALS**

An approved (signed) copy of this form must accompany any *request*, purchase order or requisition for the procurement of all hazardous materials.



**NAME:** \_\_\_\_\_  
(Instructor/Program Coordinator)

**DEPARTMENT:** \_\_\_\_\_ **PHONE NO., EXT.:** \_\_\_\_\_  
**LOCATION:** \_\_\_\_\_ **PURCHASE ORDER NO.:** \_\_\_\_\_

| Chemical Name | Solid/Liquid/Gas | Amount<br>(gallon, lbs) | Usage Plan | Estimated Usage<br>Period |
|---------------|------------------|-------------------------|------------|---------------------------|
|               |                  |                         |            |                           |
|               |                  |                         |            |                           |
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**Instructor/Program Coordinator** \_\_\_\_\_ **DATE:** \_\_\_\_\_  
(Signature)

**Dean/Vice Chancellor** \_\_\_\_\_  
**DATE:** \_\_\_\_\_  
(Signature)

**PLEASE SEND THE COMPLETED FORM TO:** Vice Chancellor for Administrative Services (VCAS).

**FOR VCAS USE ONLY**

**VCAS APPROVAL:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**APPROVAL NO.:** \_\_\_\_\_

**ATTACHMENT 1**

**UNIVERSITY OF HAWAI'I AT MANOA  
ENVIRONMENTAL HEALTH & SAFETY OFFICE  
HAZARDOUS MATERIAL MANAGEMENT PROGRAM  
APPROVAL FOR THE USE OF HAZARDOUS MATERIAL  
For Research Grants**

1. **Principal Investigator:** \_\_\_\_\_
2. **Project Title:** \_\_\_\_\_
3. If your project will involve any of the types of hazardous materials listed below, please provide a list of the chemical name(s) and approximate amounts of the materials to be used, information on how the material will be used and stored, also information on any special safety measures that will be taken. The information is needed to ensure the materials are stored, used and disposed of in accordance with the applicable Federal and State regulations.
  - a) **Explosive materials** (e.g., ammonium perchlorate, picric acid or picrates, azides, acetylides or fulminates of heavy metals, aromatic di or tri nitro compounds such as dinitrophenol or trinitrotoluene, nitroglycerine, RDX and tetrazene).
  - b) **Water reactive chemicals** (e.g., alkali metals such as sodium, potassium or lithium; metal hydrides such as lithium aluminum hydride, sodium borohydride or lithium hydride; calcium carbide, ethyldichlorosilane and phosphides).
  - c) **Flammable or poison gases** (e.g. methane, ethylene, chlorine, phosgene and hydrogen sulfide).
  - d) **Organic peroxides** (e.g., methyl ethyl ketone peroxide or peracetic acid).
  - e) **Highly toxic materials** (e.g., cyanides, osmium tetroxide, phosphorus, strychnine, pentaborane, or any material with a LD<sub>50</sub> [oral rat] of 50mg/kg or less).
  - f) **Flammable liquids** (i.e., materials with a flash point of 140 degrees Fahrenheit or less) in quantities of 60 gallons or more at any one time.

**ATTACHMENT 2**

4. If your project will involve the use of controlled substances (i.e., materials listed in 21 CFR 1308 by the U.S. Drug Enforcement Agency such as cocaine, chloral hydrate, morphine, and sodium barbital), provide the number of the required Federal or State permit for possession and use of these materials.
  
5. I agree to: (1) comply with the University of Hawaii at Manoa Hazardous Material Management Program (HMMP) requirements and any additional requirements provided by the Environmental Health and Safety Office that are necessary to ensure compliance with Federal and State regulations, (2) inform the Environmental Health and Safety Office if there are any amendments to the project which affect the types of hazardous material listed above, and (3) transfer or properly dispose of all my hazardous material as specified in the HMMP prior to leaving the University or transferring to a different laboratory. I believe the above information is accurate and complete.

-----  
**PRINCIPAL INVESTIGATOR** **DATE**

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**DEAN/VICE CHANCELLOR** **DATE**

**PLEASE SEND THE COMPLETED FORM TO: HSO 2040 East-West Road Attention: Hazardous Material Management Officer. The Hazardous Material Management Officer may be contacted at 956-3198 or Fax 956-3205, if you have questions.**

6. The use of the hazardous materials listed above is approved subject to the special requirements listed below.

-----  
**HAZARDOUS MATERIAL MANAGEMENT OFFICER** **DATE**

**SPECIAL REQUIREMENTS:**

College \_\_\_\_\_

**UNIVERSITY OF HAWAI'I  
Community College  
HAZARDOUS CHEMICAL INVENTORY FORM (SEMI - ANNUAL)**

This form assists University of Hawaii with proper management of our hazardous material and hazardous waste and to ensure that materials are safely stored and handled. You should provide a complete inventory of all stored hazardous materials. If additional space is needed, you may use an attached sheet using the same format. If at a later date you obtain materials not previously listed, please submit an amended form.

| <b>I. PRODUCT NAME</b> | <b>II. CHEMICAL NAME</b> | <b>Primary Hazard Warning</b> | <b>Physical State</b><br>(solid, liquid or solution) | <b>Container Size</b> | <b>Amount</b><br>(gal, lb)s | <b>Qty</b> |
|------------------------|--------------------------|-------------------------------|--|-----------------------|-----------------------------|------------|
|                        |                          |                               |  |                       |                             |            |
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**INSTRUCTOR/PROGRAM COORDINATOR:**

\_\_\_\_\_  
(Printed Name)      **PHONE NO.:** \_\_\_\_\_      **LOCATION:** \_\_\_\_\_

\_\_\_\_\_  
(Signature)      **Date:** \_\_\_\_\_

**PLEASE SEND THE COMPLETED FORM TO:** Vice Chancellor for Administrative Services. The VCAS may be contacted, if you have any questions.

**ATTACHMENT 3**

College \_\_\_\_\_

**SAMPLE  
UNIVERSITY OF HAWAI'I  
Community College  
HAZARDOUS CHEMICAL INVENTORY FORM (SEMI - ANNUAL)**

This form assists University of Hawaii with proper management of our hazardous material and hazardous waste and to ensure that materials are safely stored and handled. You should provide a complete inventory of all stored hazardous materials. If additional space is needed, you may use an attached sheet using the same format. If at a later date you obtain materials not previously listed, please submit an amended form.

| III. PRODUCT NAME      | IV. CHEMICAL NAME               | Primary Hazard Warning | Physical State (solid, liquid or solution) | Container Size | Amount (gal, lb)s | Qty |
|------------------------|---------------------------------|------------------------|--|----------------|-------------------|-----|
| Acetic Acid, Glacial   |                                 | Flammable              | Liquid                                     | 1 gal          | 1 gal             | 5   |
| Enamel Paint           | Naphtha ether, mineral spirit   | Flammable              | Liquid                                     | 1 gal          | 1 gal             | 10  |
| Carter's Rubber Cement | Naphtha, Hexane, Propyl alcohol | Flammable              | Liquid                                     | 4 oz           | 4 oz              | 48  |
|                        |                                 |                        |  |                |                   |     |
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**INSTRUCTOR/PROGRAM COORDINATOR:**

Dr. George Bush PHONE NO.: x7777 LOCATION: Science Bldg, Rm 205  
(Printed Name)

\_\_\_\_\_  
(Signature) Date: \_\_\_\_\_

**PLEASE SEND THE COMPLETED FORM TO:** Vice Chancellor for Administrative Services. The VCAS may be contacted, if you have any questions.

**ATTACHMENT 3**

College \_\_\_\_\_

**UNIVERSITY OF HAWAI'I  
Community College  
HAZARDOUS WASTE INVENTORY FORM (ANNUAL)**

This form assists University of Hawaii of Hawaii Community College with proper management of our hazardous waste. If you have any hazardous or non-hazardous waste being stored for disposal, please provide the information requested. If additional space is needed, you may use an attached sheet using the same format. If at a later date you generate wastes not previously listed, please submit an amended form. **EHSO will complete columns 8 and 9, DOT Class and EPA Waste Code.**

| <b>Chemical Name/Product<br/>(Chemical constituents)</b> | <b>Physical State<br/>(solid, liquid<br/>or solution)</b> | <b>Amount<br/>(gal, lbs)</b> | <b>Container<br/>Size</b> | <b>Container<br/>Type</b> | <b>Hazard<br/>Category</b> | <b>pH)</b> | <b>DOT Class<br/>(EHSO only)</b> | <b>EPA Waste Code<br/>(EHSO only)</b> |
|--|---|------------------------------|---------------------------|---------------------------|----------------------------|------------|----------------------------------|---------------------------------------|
|  |   |                              |                           |                           |                            |            |                                  |                                       |
|  |   |                              |                           |                           |                            |            |                                  |                                       |
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**INSTUCTOR/PROGRAM COORDINATOR:**

\_\_\_\_\_ **PHONE NO.:** \_\_\_\_\_ **LOCATION:** \_\_\_\_\_  
(Printed Name)

\_\_\_\_\_ **Date:** \_\_\_\_\_  
(Signature)

**PLEASE SEND THE COMPLETED FORM TO:** Vice Chancellor for Administrative Services. The VCAS may be contacted, if you have any questions.

**ATTACHMENT 4**

College \_\_\_\_\_

**SAMPLE  
UNIVERSITY OF HAWAI'I  
Community College  
HAZARDOUS WASTE INVENTORY FORM (ANNUAL)**

This form assists University of Hawaii of Hawaii Community College with proper management of our hazardous waste. If you have any hazardous or non-hazardous waste being stored for disposal, please provide the information requested. If additional space is needed, you may use an attached sheet using the same format. If at a later date you generate wastes not previously listed, please submit an amended form. **EHSO will complete columns 8 and 9, DOT Class and EPA Waste Code.**

| Chemical Name/Product<br>(Chemical constituents)                       | Physical State<br>(solid, liquid or solution) | Amount<br>(gal, lbs) | Container<br>Size | Container<br>Type | Hazard<br>Category | pH) | DOT Class<br>(EHSO<br>only) | EPA Waste Code<br>(EHSO only) |
|--|---|----------------------|-------------------|-------------------|--------------------|-----|-----------------------------|-------------------------------|
| Solvent waste—Acetone 5%, methanol 20%, mineral spirits 50%, water 20% | Liquid  | 55 gal               | 55 gal            | Drum metal        | flam               | N/A |                             |                               |
| Spray paint—mineral spirit   | Liquid under pressure                         | 8 oz                 | 16 oz             | Metal             | Flam               | N/A |                             |                               |
| Acid solution—hydrochloric acid 45%, sulfuric acid                     | Liquid  | 4 liter              | 4 liter           | Glass             | corr               | 1   |                             |                               |
|  |   |                      |                   |                   |                    |     |                             |                               |
|  |   |                      |                   |                   |                    |     |                             |                               |
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**INSTUCTOR/PROGRAM COORDINATOR:**

Dr. George Bush                      **PHONE NO.:** x7555                      **LOCATION:** Science bldg rm 205  
 \_\_\_\_\_  
 (Printed Name)

\_\_\_\_\_ **Date:** \_\_\_\_\_  
 \_\_\_\_\_  
 (Signature)

**PLEASE SEND THE COMPLETED FORM TO:** Vice Chancellor for Administrative Services. The VCAS may be contacted, if you have any questions.

**ATTACHMENT 4**

## **Procedure for Making Hazardous Waste Determinations**

All wastes must be screened to determine whether they are hazardous, whether it is a RCRA regulated or a non-RCRA regulated hazardous waste. A hazardous waste is one which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. The EPA has determined that the following meet the definition of a hazardous waste:

- a) A waste which is listed as hazardous in the regulations (40 CFR 261)\*
- b) A mixture that includes a listed hazardous waste; or
- c) A waste which exhibits any of the four following characteristics; ignitability, corrosivity, reactivity, or toxicity.

\*Note: The complete text of the hazardous waste regulations is available online at [www.epa.gov/epahome/cfr40.htm](http://www.epa.gov/epahome/cfr40.htm).

The following procedures must be used to determine if a waste is hazardous. If it is, the procedures will identify the appropriate EPA hazardous waste number for each waste, which will in turn determine disposal requirements:

- (i.) Determine the proper name of the waste and its specific source.
- (ii.) Check the EPA's hazardous waste lists in the following order:
  - (a.) "U" list of toxic wastes (40 CFR 261.33f).
  - (b.) "P" List of acutely hazardous waste (40 CFR 261.33e). See Attachment 6.
  - (c.) "K" List of hazardous wastes from specific sources (40 CFR 261.32).
  - (d.) "F" List (40 CFR 261.31) for a non-specific source of waste.
- (iii.) If the waste is not one the "U" List, the "P" List, the "K" List or the "F" List, you must determine whether the waste exhibits any of following four characteristics:
  - (a.) **Ignitability.** A waste that exhibits the characteristic of ignitability has the EPA hazardous waste number of D001. See 40 CFR §261.20.
  - (b.) **Corrosivity.** A waste that exhibits the characteristic of corrosivity has the EPA hazardous waste number of D002. See 40 CFR §261.22.
  - (c.) **Reactivity.** A waste that exhibits the characteristic of reactivity has the EPA hazardous waste number of D003. See 40 CFR §261.23.
  - (d.) **Toxicity.** A waste that exhibits the characteristic of reactivity will have and the EPA hazardous waste number of D004 through D043. See 40 CFR §261.24.

### **ATTACHMENT 5**

## LIST OF ACUTELY HAZARDOUS WASTE (P-CODED WASTE)

The following materials are hazardous wastes if and when they are intended to be discarded (40 CFR 261.33):

1. Any commercial chemical products, or manufacturing chemical intermediate having the generic name listed below.
2. Any specification commercial chemical or product or chemical intermediate having the generic name listed below.
3. Any residue remaining in a container that is not empty. P-coded containers must have their contents removed and be triple rinsed with an appropriate solvent before they are legally empty and no longer regulated.
4. Any residue resulting from the clean-up of a spill of a P-coded waste.
5. The phrase “commercial chemical product or manufacturing chemical intermediate having a generic name listed below” refers to a chemical substances 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.

| Hazardous Waste No. | Chemical Abstracts No. | Chemical Name                            |
|---------------------|------------------------|--|
| 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                       |
| P007                | 2763-96-4              | 5-(Aminomethyl)-3-isoxazolol             |
| P008                | 504-24-5               | 4-Aminopyridine                          |
| P009                | 131-74-8               | Ammonium Picrate                         |
| P119                | 7803-55-6              | Ammonium Vanadate                        |
| P099                | 506-61-6               | Argintate (1-), bis(cyano-C-), potassium |

|      |            |  |
|------|------------|--|
| P010 | 7778-39-4  | Arsenic acid (H3AsO4)  |
| P012 | 1327-53-3  | Arsenic oxide (As2O3)  |
| P011 | 1303-28-2  | Arsenic oxide (As2O5)  |
| P011 | 1303-28-2  | Arsenic pentoxide  |
| P012 | 1327-53-3  | Arsenic trioxide   |
| P038 | 692-42-2   | Arsine, diethyl-   |
| P036 | 696-28-8   | Arsenous 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]-   |
| 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, with (3aS-cis)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo [2,3-b]indol-5-yl methylcarbamate ester (1:1) |
| P001 | 81-81-2    | 2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, & salts, when present at concentrations greater than 0.3%.                        |
| P028 | 100-44-7   | Benzyl chloride  |
| P015 | 7740-47-7  | 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  |
| 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-[(diethylamino) 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 (202CuCN)  |
| 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 (CNCl)  |
| 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-hexachloro-1,4,4a,5,8,8a,-hexahydro-(1alpha,4alpha,4beta,5alpha,8alpha,8beta)-  |
| P060 | 465-73-6   | 1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4beta,5beta,8beta,8beta)-   |
| P037 | 60-57-1    | 2,7:3,6-Dimethanonaphth [2,3-b] oxirene,3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-(1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha)-                   |
| P051 | 72-20-8    | 2,7:3,6-Dimethanonaphth [2,3,-b] oxirene,3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2abeta,3alpha,6alpha,6abeta,7beta,7aalpha)-, & metabolites |
| P044 | 60-51-5    | Dimethoate  |
| P046 | 122-09-8   | alpha,alpha-Dimethylphenethylamine  |
| P191 | 644-64-4   | Dimetilan   |
| P047 | 534-52-1   | 4,6,Dinitro-o-cresol, & salts   |
| P048 | 51-28-5    | 2,4,-Dinitrophenol  |
| P020 | 88-85-7    | Dinoseb   |
| P085 | 152-16-9   | Diphosphoramidate, octamethyl-  |
| P111 | 107-49-3   | Diphosphoric acid, tetraethyl ester   |
| P039 | 298-0404   | 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, & metabolites   |

|      |            |  |
|------|------------|--|
| P042 | 51-43-4    | Epinephrine  |
| P031 | 460-19-5   | Ethanedinitrile  |
| P194 | 23135-22-0 | Ethanimidothioc acid, 2-(dimethylamino)-N-<br>{[(methylamino) carbonyl] oxy}-2-oxo-, methyl ester    |
| P066 | 16752-77-5 | Ethanimidothioic acid, N-<br>{[(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, mercuric salt   |
| P059 | 76-44-8    | Heptachlor   |
| P062 | 757-58-4   | Hexaethyl tetraphosphate   |
| P116 | 79-19-6    | Hydrazinecarbothioamide  |
| P068 | 60-34-4    | Hydrazine, methyl-   |
| P063 | 74-90-8    | Hydrocyanic acid   |
| P063 | 74-90-8    | Hydrogen cyanide   |
| P096 | 7803-51-2  | Hydrogen phosphide   |
| P060 | 465-73-6   | Isodrin  |
| P192 | 119-38-0   | Isolan   |
| P202 | 64-00-6    | 3-Isopropylphenyl N-methylcarbamate  |
| P007 | 2763-96-4  | 3(2H)-Isoxazolone, 5-(aminomethyl)-  |
| P196 | 15339-36-3 | Manganese, bis(dimethylcarbamo-dithioato-S,S')   |
| P196 | 15339-36-3 | Manganese dimethyldithiocarbamate  |
| P092 | 62-38-4    | Mercury, (acetato-O) phenyl-   |
| P065 | 628-86-4   | Mercury fulminate  |
| 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-   |
| P118 | 75-70-7    | Methanethiol, trichloro-   |
| P198 | 23422-53-9 | Methanimidamide, N,N-dimethyl-N'-<br>{3-[[[(methylamino) carbonyl]oxy]-phenyl]}-, monohydrochloride  |
| P197 | 17702-57-7 | Methanimidamide, N,N-dimethyl-N'-<br>{2-methyl-4-[[[(methylamino) carbonyl]oxy]phenyl]}-             |
| P050 | 115-29-7   | 6,9,-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-<br>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-<br>3a,4,7,7a-tetrahydro-                          |

|      |            |  |
|------|------------|--|
| P199 | 2032-65-7  | Methiocarb   |
| P066 | 16752-77-5 | Methomyl   |
| P068 | 60-34-4    | Methyl hydrazine   |
| P064 | 624-83-9   | Methyl isocyanate  |
| P069 | 75-86-5    | 2-Methylactonitrile  |
| P071 | 298-00-0   | Methyl parathion   |
| P190 | 1129-41-5  | Metolcarb  |
| P128 | 315-08-4   | Mexacarbate  |
| P072 | 86-88-4    | alpha-Naphthylthiourea   |
| P073 | 13463-39-3 | Nickel carbonyl (NiCO)   |
| P074 | 557-19-7   | Nickel cyanide (NiCN)  |
| P075 | 54-11-5    | Nicotine & salts   |
| P076 | 10102-43-9 | Nitric oxide   |
| P077 | 100-01-6   | p-Nitroaniline   |
| P078 | 10102-44-0 | Nitrogen dioxide   |
| P076 | 10102-43-9 | Nitrogen oxide (NO)  |
| P078 | 10102-44-0 | Nitrogen oxide (NO <sub>2</sub> )                                |
| P081 | 55-63-0    | Nitroglycerine   |
| P082 | 62-75-9    | N-Nitrosodimethylamine   |
| P084 | 4549-40-0  | N-Nitrosomethylvinylamine  |
| P085 | 152-16-9   | Octamethylpyrophosphoramidate                                    |
| P087 | 20816-12-0 | Osmium Tetroxide (OsO <sub>4</sub> )                             |
| P088 | 145-73-3   | 7-Oxabicyclo (2.2.1) heptane-2,3-dicarboxylic acid               |
| P194 | 23135-22-0 | Oxamyl   |
| P089 | 56-38-2    | Parathion  |
| P034 | 131-89-5   | Phenol, 2-cyclohexyl-4,6-dinitro-                                |
| P048 | 51-28-5    | Phenol, 2,4-dinitro  |
| P047 | 534-52-1   | Phenol, 2-methyl-4,6-dinitro- & salts                            |
| P020 | 88-85-7    | Phenol, 2-(1-methylpropyl)-4,6-dinitro-                          |
| P009 | 131-74-8   | Phenol, 2,4,6-trinitro-, ammonium salt                           |
| 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)-, methylcarbamate                      |
| P201 | 2631-37-0  | Phenol, 3-methyl-5-(1-methylethyl)-, methylcarbamate             |
| 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 (KCN)   |
| 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   |
| 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 | 54-11-5    | Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-, & salts   |
| P204 | 57-47-6    | Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, methylcarbamate (ester, (3aS-cis)- |
| P114 | 12039-52-0 | Selenious acid, dithallium (thallous) salt  |
| P103 | 630-10-4   | Selenourea  |
| P104 | 506-64-9   | Silver cyanide (AgCN)   |
| P105 | 26628-22-8 | Sodium azide  |
| P106 | 143-33-9   | Sodium cyanide (NaCN)   |
| P108 | 57-24-9    | Strychnidin-10-one, & salts   |
| P018 | 357-57-3   | Strychnidin-10-one, 2,3-dimethoxy-  |
| P108 | 57-24-5    | Strychnine & salts  |
| P115 | 7446-18-6  | Sulfuric acid, dithallium (thallous) salt   |

|      |            |  |
|------|------------|--|
| P109 | 3689-24-5  | Tetraethyldithiopyrophosphate  |
| P110 | 78-00-2    | Tetraethyl lead  |
| P111 | 107-49-3   | Tetraethyl pyrophosphate   |
| P112 | 509-14-8   | Tetranitromethane  |
| P062 | 757-58-4   | Tetraphosphoric acid, hexaethyl ester  |
| P113 | 1314-32-5  | Thallic oxide  |
| P113 | 1314-32-5  | Thallium oxide (Tl <sub>2</sub> O <sub>3</sub> )   |
| P114 | 12039-52-0 | Thallium (I) selenite (thallous selenite)  |
| P115 | 7446-18-6  | Thallium (I) sulfate (thallous sulfate)  |
| P109 | 3689-24-5  | Thiodiphosphoric acid, tetraethyl ester  |
| P045 | 39196-18-4 | Thiofanox  |
| P049 | 541-53-7   | Thioimidodicarbonic diamide (H <sub>2</sub> NCS) <sub>2</sub> NH                         |
| P014 | 108-98-5   | Thiophenol   |
| P116 | 79-19-6    | Thiosemicarbazide  |
| P026 | 5344-82-1  | Thiourea, (2-chlorophenyl)-  |
| P072 | 86-88-4    | Thiourea, 1-naphthalenyl-  |
| P093 | 103-85-5   | Thiourea, phenyl-  |
| P185 | 26419-73-8 | Tirpate  |
| P123 | 8001-35-2  | Toxaphene  |
| P118 | 75-70-7    | Trichloromethanethiol  |
| P119 | 7803-55-6  | Vanadic acid, ammonium salt  |
| P120 | 1314-62-1  | Vanadium Oxide (V <sub>2</sub> O <sub>5</sub> ) vanadium pentoxide                       |
| P084 | 4549-40-0  | Vinylamine, N-methyl-N-nitroso-  |
| P001 | 81-81-2    | Warfarin, & salts, when present at concentrations greater than 0.3%                      |
| P205 | 137-30-4   | Zinc, bis(dimethylcarbamo-dithioato-S,S')-,  |
| P121 | 557-21-1   | Zinc cyanide [Zn (CN) <sub>2</sub> ]   |
| P122 | 1314-84-7  | Zinc phosphide (Zn <sub>3</sub> P <sub>2</sub> ) when in concentrations greater than 10% |
| P205 | 137-30-4   | Ziram  |



# Instructions for Completing the Chemical Waste Tag (cont')

All waste containers must be tagged

**Hazard Class:** Is this waste EPA regulated hazardous waste or is it not EPA regulated hazardous waste. Call UHCC ESS for assistance.

**EPA regulated hazard codes.** Please mark accordingly for your waste stream. If any of these items are in your waste stream or exhibit these characteristics, please mark the appropriate item.

**Hawaii Community College**  
120 W. Kawili Street, Hilo, Hawaii 96720  
(808) 974-7656

| <b>Hazard Class</b>                 | <b>__RCRA</b>           | <b>__NonRCRA</b>                     |
|-------------------------------------|-------------------------|--------------------------------------|
| <b>__ Flammable D001</b>            | <b>__ Oxidizer D001</b> | <b>__ Corrosive D002</b>             |
| <b>__ Reactive D003</b>             | <b>__ Toxic:....</b>    |                                      |
| <b>__ Arsenic.D004</b>              |                         | <b>__ Hexachlorobenzene.D032</b>     |
| <b>__ Barium D005</b>               |                         | <b>__ Hexachlorobutadiene.D033</b>   |
| <b>__ Benzene.D018</b>              |                         | <b>__ Hexachloroethane.D034</b>      |
| <b>__ Cadmium.D006</b>              |                         | <b>__ Lead.D008</b>                  |
| <b>__ Carbon Tetrachloride.D019</b> |                         | <b>__ Lindane.D013</b>               |
| <b>__ Chlordane.D020</b>            |                         | <b>__ Mercury.D009</b>               |
| <b>__ Chlorobenzene.D021</b>        |                         | <b>__ Methoxychlor.D014</b>          |
| <b>__ Chloroform.D022</b>           |                         | <b>__ Methyl ethyl ketone.D035</b>   |
| <b>__ Chromium.D007</b>             |                         | <b>__ Nitrobenzene.D036</b>          |
| <b>__ o-Cresol.D023</b>             |                         | <b>__ Pentachlorophenol.D037</b>     |
| <b>__ n-Cresol.D024</b>             |                         | <b>__ Pyridine.D038</b>              |
| <b>__ p-Cresol.D025</b>             |                         | <b>__ Selenium.D010</b>              |
| <b>__ Cresol.D026</b>               |                         | <b>__ Silver.D011</b>                |
| <b>__ 2,4-D.D016</b>                |                         | <b>__ Tetrachloroethylene.D039</b>   |
| <b>__ 1,4-Dichlorobenzene.D027</b>  |                         | <b>__ Toxaphene.D015</b>             |
| <b>__ 1,2-Dichloroethane.D028</b>   |                         | <b>__ Trichloroethylene.D040</b>     |
| <b>__ 1,1-Dichloroethylene.D029</b> |                         | <b>__ 2,4,5-Trichlorophenol.D041</b> |
| <b>__ 2,4-Dinitrotoluene.D030</b>   |                         | <b>__ 2,4,6-Trichlorophenol.D042</b> |
| <b>__ Endrin.D012</b>               |                         | <b>__ 2,4,5-TP (Silvex).D017</b>     |
| <b>__ Heplachlor.D031</b>           |                         | <b>__ Vinyl Chloride.D043</b>        |

**All waste containers must be segregated by hazard class.**



# Instructions for Completing the Chemical Waste Tag (cont')

All waste containers must be tagged

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| <b>Hazard Class</b>                 | <b>__RCRA</b>           | <b>__NonRCRA</b>                     |
|-------------------------------------|-------------------------|--------------------------------------|
| <b>__ Flammable D001</b>            | <b>__ Oxidizer D001</b> | <b>__ Corrosive D002</b>             |
| <b>__ Reactive D003</b>             | <b>__ Toxic:....</b>    |                                      |
| <b>__ Arsenic.D004</b>              |                         | <b>__ Hexachlorobenzene.D032</b>     |
| <b>__ Barium D005</b>               |                         | <b>__ Hexachlorobutadiene.D033</b>   |
| <b>__ Benzene.D018</b>              |                         | <b>__ Hexachloroethane.D034</b>      |
| <b>__ Cadmium.D006</b>              |                         | <b>__ Lead.D008</b>                  |
| <b>__ Carbon Tetrachloride.D019</b> |                         | <b>__ Lindane.D013</b>               |
| <b>__ Chlordane.D020</b>            |                         | <b>__ Mercury.D009</b>               |
| <b>__ Chlorobenzene.D021</b>        |                         | <b>__ Methoxychlor.D014</b>          |
| <b>__ Chloroform.D022</b>           |                         | <b>__ Methyl ethyl ketone.D035</b>   |
| <b>__ Chromium.D007</b>             |                         | <b>__ Nitrobenzene.D036</b>          |
| <b>__ o-Cresol.D023</b>             |                         | <b>__ Pentachlorophenol.D037</b>     |
| <b>__ n-Cresol.D024</b>             |                         | <b>__ Pyridine.D038</b>              |
| <b>__ p-Cresol.D025</b>             |                         | <b>__ Selenium.D010</b>              |
| <b>__ Cresol.D026</b>               |                         | <b>__ Silver.D011</b>                |
| <b>__ 2,4-D.D016</b>                |                         | <b>__ Tetrachloroethylene.D039</b>   |
| <b>__ 1,4-Dichlorobenzene.D027</b>  |                         | <b>__ Toxaphene.D015</b>             |
| <b>__ 1,2-Dichloroethane.D028</b>   |                         | <b>__ Trichloroethylene.D040</b>     |
| <b>__ 1,1-Dichloroethylene.D029</b> |                         | <b>__ 2,4,5-Trichlorophenol.D041</b> |
| <b>__ 2,4-Dinitrotoluene.D030</b>   |                         | <b>__ 2,4,6-Trichlorophenol.D042</b> |
| <b>__ Endrin.D012</b>               |                         | <b>__ 2,4,5-TP (Silvex).D017</b>     |
| <b>__ Heplachlor.D031</b>           |                         | <b>__ Vinyl Chloride.D043</b>        |

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