

Art and Theater Hazardous Waste Management Policy and Procedure

Table of Contents

Section I – General Information

A. Background and Purpose

Section II – Generator Responsibilities

- A. Generator Responsibilities
- B. Waste Minimization
- C. Types of Waste
- D. Waste Management
- E. Waste Container Labeling
- F. Unidentified Waste
- G. Satellite Accumulation Area
- H. Request for Removal

Section III – REHS/Environmental Services Responsibilities

- A. Waste Handling & Storage Prior to Shipment
- B. Waste Shipment
- C. Waste Inspections

Appendix 1 – Glossary

Appendix 2 – Request for Hazardous Waste Disposal Form

Art and Theater Hazardous Waste Management Policy and Procedure

Section I - General Information

A. Background and Purpose

Many disciplines within the theater and art departments conduct activities that generate hazardous waste. Some of these activities include: Painting, Printmaking, Photography, Ceramics, Sculpture, and Graphic Design. These hazardous wastes are regulated by the NJ Department of Environmental Protection and the U.S. Environmental Protection Agency, and require special management. The following policy outlines procedures for these types of wastes to ensure compliance with federal, state, and local environmental regulations.

Section II – Generator Responsibilities & Waste Management

A. Generator Responsibilities

It is the responsibility of Art and Theater department personnel to identify, and properly manage hazardous waste according to university, local, state, and federal law. It is also the department's responsibility to minimize the generation of hazardous waste where possible. Rutgers Environmental Health & Safety will provide assistance in order to follow the applicable regulations and university policies.

B. Waste Minimization

It is Rutgers University's policy to minimize the generation of hazardous waste wherever possible below list some examples of waste minimization practices.

- Only purchase the amount of materials needed to complete a project. Often the cost for disposal is more than the purchase price.
- Purchase nontoxic, non-hazardous alternative products. See Table 1 for examples.
- In order to minimize waste, please reuse or recycle materials whenever possible.
- Donate unused and/or unwanted chemicals to the REHS chemicals for reuse inventory.

For more information on ways to minimize waste, please see the Rutgers University Hazardous Waste Disposal Policy and Procedure section on waste minimization. This policy is available on our website <http://rehs.rutgers.edu> and by request by calling REHS at 732.445.2550

Table 1 Examples of Non-Hazardous Material Substitution

<i>Use</i>	<i>Instead of</i>
Strontium Carbonate	Barium Carbonate
Prussian Blue or Mars Yellow	Chromate Pigment Powders
Iron Oxide	Uranium
Lead Free Solder	Traditional Solders
Hot Glue	Solvent Based Adhesives

C. Types of Waste

Below lists the typical wastes generated in theater and art departments. If you have a question regarding a particular waste stream, please contact REHS by phone at 732.445.2550 or via email at hazwaste@rehs.rutgers.edu.

- Unused Materials (e.g. paint, paint thinner, nitric acid, glazes, etc.)

- All unused materials should be disposed of through REHS. Please review the Waste Management section of this policy and the Hazardous Waste Disposal Policy and Procedure in your Chemical Hygiene Guide or on the REHS website <http://rehs.rutgers.edu> for more information on managing your chemical waste.

- If a material is in good condition, and may be used in another department REHS will add it to the chemicals for reuse inventory.

- **Adhesives:** Solvent based adhesives should be collected and disposed of through REHS.

- **Batteries – Rechargeable** (e.g. lithium, NiCad): Collect in SAA, label with universal waste label, and dispose of through REHS.

- **Batteries – Alkaline:** Currently, REHS does not collect alkaline batteries for disposal. These may be disposed of in the general trash.

- **Ceramic Glazes:** Many ceramic glazes contain heavy metals (e.g. barium, chromium) that are regulated as hazardous waste. Any unused materials and drippings should be collected and disposed of through REHS.

- **Corrosive materials** such as **nitric acid** used in etching should be collected and disposed of through REHS, or may be drain disposed if neutralized to a pH between 5 and 9. Neutralization should only be performed with proper training and personal protective equipment.

- **Ink:** Solvent and/or oil-based inks should be collected and disposed of through REHS.

- **Linseed Oil and other Natural Oils:** Collect in a closable container, label as “natural oils” and dispose of through REHS.

- **Oils (petroleum and synthetic):** Collect in a closable container mark with a used oil label, store in SAA, and dispose of through REHS.

- **Oily Rags (petroleum and synthetic):** Collect in a closable container mark with a used oil label. Dispose of through REHS.

- **Paints**

- Latex paints should be stored in the SAA and collected by REHS. If the paint is dry the can may be disposed of in the trash.
- Solvent and/or oil based paints should be collected and disposed of through REHS.

- **Photographic Waste – See Photographic Waste Management Policy.** This policy may be found at <http://rehs.rutgers.edu> or in the Art Safety Manual.

- **Sharps** (razor blades, etc.): Sharp objects such as razorblades, broken glass, and knives should be placed in a puncture proof container such as a jar and disposed of in the trash.

- Solvent contaminated rags: **Rags contaminated with solvents such as mineral spirits or turpentine should be disposed of in the red safety can. This can should be emptied nightly or when full into the 55-gallon drums for solvent rags.** Rags and papers must not be left in these cans overnight.

- **Solvent waste** (mineral spirits, turpentine, paint thinners, etc.): Solvents should be collected and disposed of through REHS.

D. Waste Management

- Waste chemicals must be collected in individual, leak proof, sealed containers. The chemicals must be compatible with container material (e.g. acids must not be placed in a metal container). Glass containers

may be safely used for virtually anything except hydrofluoric acid, acid fluoride salts, and very strong alkalis.

- Waste chemicals must not be placed in an unwashed container, which contains any incompatible residual material, from previous chemical storage.
- Select the smallest container available that will properly hold the material, allowing sufficient headspace above the surface of the liquid to allow room for expansion. This is economical and efficient. Five-gallon carboys, pails, and fifty-five-gallon drums are available from REHS as required. Do not use your own drums or pails without prior approval from REHS; they may not meet US Department of Transportation requirements.
- Any containers holding a hazardous chemical or waste shall be kept securely closed, so there is no escape of hazardous waste or its vapors during storage, except when it is necessary to add or remove chemicals or waste. Ensure that lids, bungs, or rims are tightly in place.

E. Waste Container Labeling

- All containers must be clearly identified and labeled with the chemical name(s) of the substance(s) at the immediate time when the collection starts. Trade names, acronyms, abbreviations, codes, or formulas **are not acceptable**.
- All hazardous waste, which cannot be recycled because it is either spent, past the manufacturer's expiration date, or has been mixed or contaminated with another substance **must be labeled with a Rutgers University black and white HAZARDOUS WASTE LABEL**. This label must be affixed to the container before any waste material is placed into the container. It is also acceptable to write the words "HAZARDOUS WASTE" on the original manufacturer's label. Note the latter is only acceptable if the chemical is in its original container. Hazardous waste labels may be obtained by calling REHS. **Waste Labeling (or writing the words "Hazardous Waste" on the manufacturer's label) must not be completed on unused materials, as these materials may be recycled by redistribution.**
- The concentration of each chemical or mixture component must be identified on the label. The units of concentration must be on the label together with their numerical values. When the solute is either a liquid or gas, the concentrations **may not** be expressed in percentages, but must be stated as either a **weight percent** or a **volume percent**. For containers being filled with varying concentrations of a variety of compatible materials, the chemical concentrations can be added to the label when the container is full.
- The hazardous waste label must have all contact information completed.
- Used Oil should be labeled with either the words "Used Oil," or with a Rutgers University black and white used oil label.
- Batteries must be labeled with a Rutgers University Universal Waste Label.

Please note: Non-RCRA regulated waste that is being collected because drain disposal is not permitted or prior to drain disposal does not need a Hazardous Waste Label. Collection containers should be marked with the contents and concentrations (e.g. Spent Developer, 100%).

F. Unidentified Waste

State and federal transportation regulations for waste haulers prevent REHS from collecting substances that are unidentified (unknown). The responsibility for establishing the identity of an unknown substance rests with the department wishing to dispose of it. Upon request, REHS will furnish the names of state-certified analytical laboratories.

G. Satellite Accumulation Areas

- Hazardous waste must be stored in the Satellite Accumulation Area (SAA), at or near the point of generation and under the control of the operator generating the waste. Typically there is an SAA in each room where waste is generated. REHS will assist with the determination of appropriate locations for satellite accumulation areas.
- Chemical wastes must be segregated by general waste type (*e.g.* flammables, poisons, acids, and alkalis) and arranged so that incompatible substances cannot mix. Incompatibles are those pairs of substances that, when mixed, either react violently or evolve flammable or poisonous gases or vapors. Below are a few general principles that must be followed for safe hazardous waste storage and chemical storage:
 1. Keep acids and bases apart.
 2. Keep acids apart from cyanides or sulfides
 3. Acids should never be put into steel containers.
 4. Water-reactive, strong acids such as organic acid halides, organic acid anhydrides, inorganic acid anhydrides, and strong acidic salts must be kept apart from both alkalis and water.
 5. Oxidizing agents must be kept apart from reducing agents and organic compounds.
 6. Water-reactive agents must be stored apart from water, aqueous solutions, and acids.
 7. Air-reactive materials must be packed in containers that are sealed off from the atmosphere.
 8. Explosive and shock-sensitive materials present special risks that require special handling. Consult with REHS before handling or preparing for disposal.
- Hazardous waste must be stored in secondary containment. Incompatible materials must not be stored in the same secondary containment bin.
- Containers must be arranged so that identification is readily visible.
- State and federal regulations allow up to fifty-five gallons of hazardous waste, or one quart of acutely hazardous waste (for more information on acutely hazardous waste see section II of the Hazardous Waste Disposal Policy and Procedure) in a Satellite Accumulation Area (SAA). Once accumulation limits are met containers must be dated with the start date excess accumulation begins. At the time when the limit is reached, excess waste must be removed from the SAA within three days.
- Spilled material must be properly cleaned immediately. Do not allow spill residues to accumulate in the bottom of SAA containment bins.

H. Request for Waste Removal

Hazardous waste collection is performed by REHS on a routine basis and can be requested by one of two methods; fax or via the REHS web page. With all two methods, a ***Request for Hazardous Waste Disposal*** form must be filled out and submitted to REHS. These forms must include the following information:

- Requester: The name of the person submitting the form. This person should have knowledge of the waste in the event that REHS personnel have questions.
- Telephone #: A contact number for the requester or someone else with knowledge of the waste.
- Substance Location: Include the building name and room number. In addition, if the location of the SAA is not readily apparent, the location of the waste within the lab should also be noted in the event that REHS performs the waste pick-up when no lab personnel are present.
- Chemical Name: Use full chemical names. Do not use formulas or abbreviations. Include all the constituents of each waste container.
- Quantity: Include the number of containers of waste and their volumes.

Example:

Spent Fixer	2 X 5 gallon cans
Spent Mineral Spirits with Paint Sludge	4 X 5 gallons
Nitric acid	1 X 1 gallon

- If REHS supplies you with 5-gallon waste cans or pails, be sure to note how many replacement containers should be left. Also, feel free to note any additional information about the waste that you think may be helpful.
- In the event that waste containers that are to be collected are intermingled in the same SAA bin with containers that you want to keep, it is helpful if you mark the containers that you want taken away with Post-Its or colored lab tape on the caps.
- Remember that REHS cannot accept unknown materials. All waste containers must be labeled and their contents identified.
- All waste containers must have a tightly fitting cap that will not leak during transport. Be sure that you have the correct cap for your container. Improperly capped waste bottles **will** leak.
- **Request for Hazardous Waste Disposal can be sent by one of these two methods** (Blank forms can be obtained from REHS or printed off of the web page)
 - Via Fax to: **732-445-3109**
 - Via Email on Web Page at: **rehs.rutgers.edu**.
 - Click on “**Hazardous Waste Disposal**” under Quick Links.
 - Complete the necessary information
 - Click on “**Submit**” at the bottom of the form
 - For the New Brunswick/Piscataway campuses, expect the pick-up to occur within 5 to 10 working days of the submittal of the request form. REHS schedules routine hazardous waste pick-ups on the Newark and Camden campuses every 30 to 60 days. Manage your waste accordingly. Do not wait to submit a request form until your waste containers are completely full and you are out of space.

Section III – REHS Environmental Services Responsibilities

A. Waste Handling & Storage Prior to Shipment

Waste Handling

- When hazardous waste is picked up by REHS each container will be checked to ensure it is properly labeled and sealed.
- During each pick-up an inspection of hazardous waste management will be written up a copy of the inspection will be electronically mailed to the person responsible for the area.
- All waste containers are either shipped from the location for disposal or brought back to the Environmental Storage Building (ESB) on Busch Campus.

Waste Storage:

- The waste, which is brought to the ESB, is logged in the written Hazardous Waste operating record. This record is then inputted into the computerized Operating Record.
- The flammable solvents are consolidated “bulked” into 55-gallon drums. These drums are stored in the flammable cell.
- The other “lab Pack” waste is segregated by waste type and stored in the cell storage Section of the ESB.
- The lab pack items are segregated according to their classification until a sufficient amount is available for packing. Prior to shipping, compatible Lab Pack items are packed into a drum or other container and prepared for shipment.

B. Waste Shipment

- The REHS Environmental Services Group will make all arrangements for proper disposal of the waste.
- All drums require the proper hazardous waste (RCRA) and DOT labeling.
- A **Hazardous Waste Manifest Form** is utilized for each shipment and returned copies are retained in the files located in the REHS Environmental Services Group
- The waste vendor or REHS completes the Hazardous Waste Manifest Form and packing slips.

C. Waste inspections

Weekly Storage Location Inspections

- The ESB / Reactives Shed is inspected on a weekly basis
- The Cook/Douglas 90 day Storage Shed is inspected on a weekly basis
- The Camden 90 Day Storage area is inspected on a weekly basis
- The Newark 90 Day Storage area is inspected on a weekly basis
- The Manager of Environmental Operations is responsible for scheduling an alternate inspector in the event that the primary inspector is unable to conduct the weekly inspection (i.e. sickness, vacation). If the Supervisor is unable to locate an alternate inspector, the Supervisor will perform the inspection.
- The records of these inspections will be maintained at each location and annually placed in the REHS Files.

Appendix 1 Glossary

Bulking: the consolidation of compatible wastes into a single container for storage or shipment.

Lab Pack: the consolidation of containers of small quantities of waste into a single container for storage or shipment.

EPA: Environmental Protection Agency

ESB: Environmental Services Group

P-Listed Waste: Specific chemicals that the EPA deemed acutely hazardous wastes when discarded, and listed as hazardous wastes from commercial chemical products, intermediates, and residues. These substances have a “P” code, and are subject to more rigorous management requirements. The empty containers for P-listed waste are to be managed as hazardous waste.

RCRA: Resource Conservation and Recovery Act

REHS: Rutgers Environmental Health & Safety

SAA: Satellite Accumulation Area, A location within a studio, darkroom, maintenance area, laboratory, or room where hazardous waste is stored. These regulations specify for this area to be located “at or near the point of generation” and to be “under control of the operator” generating the waste.

Hazardous Waste: Hazardous waste is a waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment. Discarded materials will be deemed a hazardous waste if it exhibits any of the four hazardous waste characteristics, or if it is listed by the EPA. The United States Environmental Protection Agency (EPA) classifies hazardous waste into four types of “characteristic waste” and also has four separate types of “listed waste”.

Appendix 2

REQUEST FOR HAZARDOUS WASTE DISPOSAL

REQUEST FOR HAZARDOUS WASTE DISPOSAL

Instructions for Completing

- I. The requester is the person who is responsible for the generation of the waste.
- II. This request form is to be completed by the requester.
- III.
 - ⇒ The “**Name of Chemical**” names should be written on the form and the waste labels to identify the material. Chemical formulas, acronyms and trade names are not acceptable; i.e. Methylene Chloride, not CH_2Cl_2 .
 - ⇒ For mixtures of liquids, all constituents must be listed on the form as well as the waste label and add up to 100%. Solutions of solids or gases in liquids must be expressed in concentrations of either weight percent, molarity (moles per liter), or normality (equivalents/liter).
 - ⇒ List the “**Number of Containers**” for each line item
 - ⇒ Fill in the “**Container Volume**” for substance listed: ml, liter, quart, gallon.
 - ⇒ Include any “**Other Information**” in the last column

PLEASE XEROX THIS FORM FUTURE USE

Options to submit your request:

- Please fax the completed form to **fax number (732) 445-3109**
- If a fax machine is not available please submit a web based request on our web site **<http://rehs.rutgers.edu>**
- If you do not have access to a fax machine or the internet this completed form can be mailed to the address below:

**RUTGERS, THE STATE UNIVERSITY
RUTGERS ENVIRONMENTAL HEALTH & SAFETY
24 STREET 1603
BLDG 4127 LIVINGSTON CAMPUS**

When a supply of labels is needed or when questions arise, call (732) 445-2550.