Punyashlok Ahilyadevi Holkar Solapur University, Solapur

Chemical & Hazardous Waste Disposal Policy

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1. Introduction:

The Punyashlok Ahilyadevi Holkar Solapur University, Solapur emphasized the value of sustainable and systematic hazardous chemical waste management in limiting its ecological footprint and delivering a safe and healthy work environment for faculty, staff, students, and visitors. The University is obligated to ensure that hazardous chemical waste must be disposed of or managed by government-approved, registered waste contractors. The purpose of this policy is to facilitate the execution of the action plan outlined in the "National Environment Policy 2006" regarding the management of hazardous wastes, including their minimization, environmentally responsible management, and active promotion of the transfer and use of cleaner technologies. Hence, a Chemicals Waste Disposal Committee which is properly authorised by the competent authority of the University needs to be constituted. This committee shall conduct meetings once in six months and meetings to be properly minuted. The committee is permitted to take decision/ changes/ suggestions on chemical waste disposal policy related issues.

2. Policy Statement:

PAHSUS Chemical and Hazardous Waste Management and Disposal Policy will adhere to the principles of the 'Best Practicable Environmental Option' involving a two-tier approach to prevention and control of environmental pollution. The Institute will implement a "Waste hierarchical Approach" that prioritises hazardous waste reduction, reuse, recycling, and recovery over chemical waste disposal. The University acknowledges the significance of complying with these legal requirements and managing its hazardous waste responsibly, reducing the amount of chemical waste sent to landfills and maximising reuse and recycling whenever possible.

To ensure compliance with all waste legislations, the University requires all teaching and non-teaching staff, students, guests, and anyone using the premise to adhere to this policy and the associated "University Environmental Guidance". Any hazardous waste generated on campus must be managed and disposed of under the criteria and procedure outlines in the Hazardous Wastes (Management and Handling) Rules, 1989, published under the notification of the Ministry of Environment and Forests, Government of India, under the provisions of the Environment (Protection) Act, 1986. Those who produce, store, or

dispose of any type of hazardous/radioactive/chemical waste are required by law to comply with the applicable national and international environmental protection regulations.

3. Definitions and Scope:

Hazardous material: A material that poses a risk to the physical or mental health of those who are exposed to it. For the purposes of this policy, materials whose only hazard is radioactivity or which are infectious agents are not considered hazardous because they are governed by other policies.

Hazardous Waste: Definition in Rule 3 of Hazardous Waste (Management and Handling) Amendment Rules 2003 coming into force with effect from 20 May 2003 as any waste which by reason of any of its physical, chemical, reactive. Toxic, flammable, explosive, corrosive characteristics causes danger or is like to cause danger to health or environment, whether alone or when in contact with other wastes or substances, and including waste listed in Schedule 1, 2 & 3 of HW (M & H) Rules, 2003.

Material Safety Data Sheet (MSDS): Technical information documents describing the toxicity, physical hazards and methods of safe handling for a chemical product. MSDS sheets are available from the product manufacturer.

Cleaner Production: Defined in UNEP (1990), Cleaner production is the continuous application of an integrated environmental strategy to processes, products and services to increase efficiency and reduce risks to humans and the environment.

Each individual with the authority to procure resources for use by PAHSUS employees and students is responsible for determining the hazards associated with their use before purchase. The individual in charge of these employees or students must then inform them of the potential dangers and proper handling of these substances.

4. Organisation and Management:

The responsibilities and organisational structure for this Hazardous Waste Management Policy are assigned to various personnel within the University. Chairpersons, directors, and teachers of departments are required to formulate appropriate

departmental policies in consultation with the Chemical Waste Disposal Committee and to make provisions for the training of their personnel under this policy and all applicable Safety Policies and Procedures.

The Chemical Waste Disposal Committee shall oversee the implementation of this policy on the PAHSUS Campus. Hazardous waste disposal is the sole responsibility of the Chemical Waste Disposal Committee. The Chemical Waste Disposal Committee shall conduct inspections to determine adherence to this policy and other pertinent safety policies, procedures, and practices. Notification of noncompliance must be referred directly to the Director of concern School or IQAC, Director, as applicable.

All chemicals provided to individuals or departments at PAHSUS as donations, gifts, or in exchange for other considerations must adhere to the same procedures and policies as purchased chemicals.

Departments responsible for hazardous waste disposal are accountable for:

I. Identifying and labelling all waste containers correctly:
II. Schedule periodic waste collection;
III. Managing their inventory and waste to prevent stockpiling:
IV. Properly segregating incompatible wastes; and
V. Disposing of hazardous waste legally and safely.

The Research Safety is charged with:

I. Conducting periodic audits of hazardous waste container labelling and storage in research laboratories; and
II. As part of the decommissioning process for laboratories that are closing or being remodelled, work with the responsible departments to ensure that hazardous waste containers are properly identified and labelled to facilitate their proper disposal.

5. Hazardous Material Disposal:

a. Each individual working with chemicals on the University campus is responsible for knowing how to properly dispose of the residues of those chemicals.

b. The hazardous waste generator is responsible for proper waste labelling, waste segregation, and contacting the Chemical Waste Disposal Committee regarding waste collection.
c. The Chemical Waste Disposal Committee shall collect and dispose of all hazardous waste produced on the University Campus.
d. Each waste container submitted for disposal must bear the following labelling information:

I. Complete and accurate description of the contents of the container using full chemical names and, if known, the proportion of each chemical contributing to the whole;
II. Name and/or department of the person generating the waste;
III. Date the material was discarded; and
IV. Commercial mixtures, trademarked products, and the like shall be accompanied by an MSDS if the chemical constituents are not readily identifiable from the name of the product or the information on the label.

e. To avoid the expense of chemical identification procedures, each department shall make every effort to identify unlabelled or poorly labelled containers before submitting them to the Chemical Waste Disposal Committee.

Waste that has not been specifically listed can still be characteristically hazardous if it exhibits any one of the following characteristics:

Ignitability

- Flammable Liquids Flashpoint <140°F (e.g. alcohols, acetone, ethyl acetate, mineral spirits, gasoline)
- Oxidizers (e.g nitrates, perchlorates, bromates, permanganates, peroxides, iodates)
- Organic Peroxides (e.f. benzoyl peroxide, cumene hydroperoxide, methyl ethyl ketone peroxide)

Corrosivity: Aqueous liquids with a pH < 2 or > 12.5 or other liquids capable of corroding steel at a rate of> 6.35 mm (0.250 inches) per year at a test temperature of 55 °F.

- Inorganic Acids (e.g., hydrochloric acid, sulfuric acid, nitric acid, perchloric acid, phosphoric acid)
- Organic Acids- [e.g., formic acid, lactic acid)
- Bases-(e.g., hydroxide solutions, amines)

Reactivity: Materials which can react violently. or create toxic fumes:

- Sulfides and cyanides
- Peroxide formers (e.g., ethers, potassium amide, sodium amide, vinyl acetate, tetrahydrofuran)
- Water Reactive Materials (e.g., sodium, potassium, lithium, calcium carbide)
- Multi-nitrated Compounds (e.g., picric acid, nitrosoguanidine, trinitroaniline)
- Perchlorate crystal formers (e.g., perchloric acids)
- Compounds that may undergo vigorous polymerization (ee, acrylic acid, viny acetate, methyl acrylate)

Toxicity:

A waste that, when subjected to the toxicity characteristic leaching procedure (TCLP), leaches any number of metallic, organic, or pesticide constituents at concentrations above those specified by regulation. These components include arsenic, barium, cadmium, chloroform; chromium, m-cresol, mercury. selenium, and silver, among others.

Disposal of hazardous materials into sinks, drains, commodes, or other sewage disposal channels is STRICTLY PROHIBITED by PAHSUS. Hazardous waste must be collected, submitted to Chemical Waste Disposal Committee, and shipped to permitted treatment storage, of disposal facility-improperly managed hazardous waste can present a safety hazard to the campus, students, and

employees; create a physical hazard to plumbing and buildings, and create an environmental hazard should release occur to the air ground, or water.

6. **Action Plan:**

It will be necessary for the School Director, Department Head, and project's principal investigator to report any changes or additions to the production of hazardous waste as well as any actions taken to reduce waste production. According to the regulations on hazardous waste, University may store hazardous waste for up to 90 days and must keep a record. The waste could be recycled or reused, disposed of in on-campus private or public treatment, storage, and disposal facilities, or burned as suggested.

Central Waste Accumulation Area:

At a centra adcumulat on iarea, hazardous waste collected from the campus by the Chemical Waste Disposal Committee is stored, consolidated, and packaged for disposal. On-site spill kits are available in the event of a spill or accidental release to facilitate a prompt response and clean-up.

Emergency Response Plan:

The Emergency Response Plan is implemented to formalise the School's response to and mitigation of hazardous material incidents. The plan's objective is to reduce risks to human health, the environment, and property. The plan must be updated annually and includes detailed emergency information.

Training:

Hazardous waste training is provided by the Chemical Waste Disposal Committee for all PAHSUS faculty, staff, and students who may generate waste chemicals. Refresher training is also required annually. Additional training is required for the Chemical Waste Disposal Committee members involved in the packaging and disposal of hazardous wastes.

Waste Minimization Plan:

As a generator of hazardous waste, University strictly adheres to the Hazardous Waste Minimization Plan

and always tries to minimize the amount of waste generated. Two common approaches to minimizing waste include:

1. Waste avoidance or pollution prevention through cleaner production.
2. Recovery, reuse and recycling.

Recordkeeping:

The following records are maintained by the Chemical Waste Disposal Committee: all permits, licenses, inspection logs and training records. These documents are kept on file for a minimum of three years.

Internal Quality Assurance Cell (IQAC)

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