

SRM Institute of Science and Technology



SRM

INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University u/s 3 of UGC Act, 1956)

Chemical and Hazardous Waste Disposal Policy

A handwritten signature in blue ink, appearing to be "S. S. Srinivasan", is written over a horizontal line.

Registrar

SRM Institute of Science and Technology
SRM Nagar, Kattankulathur - 603 203
Chengalpattu Dist. Tamilnadu, India.



Chemical and Hazardous Waste Disposal Policy

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1. Introduction

The SRM Institute of Science and Technology (SRMIST) 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 Institute 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 Chemical Waste Disposal Committee which is properly authorised by the competent authority of the Institute 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

SRMIST 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 Institute 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 Institute requires all teaching and non-teaching staff, students, guests, and anyone using the premises to adhere to this Policy and the associated "Institute Environmental Guidance". Any hazardous waste generated on campus must be managed and disposed of under the criteria and procedure outlined in the



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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: Defined in Rule 3 of Hazardous Wastes (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 likely 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 SRMIST 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.



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4. Organisation and Management

The responsibilities and organisational structure for this Hazardous Waste Management Policy are assigned to various personnel within the Institute. Chairpersons, directors, and managers 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 SRMIST 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 sent to the relevant department head and Dean. Continued non-compliance must be referred directly to the Dean or Director for Business & Administration, as applicable.

All chemicals provided to individuals or departments at SRMIST 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 SRMIST 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 SRMIST Campus.
- D. Each waste container submitted for disposal must bear the following labelling information:
 - a. 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;
 - b. Name and/or department of the person generating the waste;
 - c. Date the material was discarded; and
 - d. 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.
- F. Generally, there are no disposal fees for properly labelled and packaged hazardous wastes. However, fees will be assessed for the identification of unlabelled containers, the disposal of compressed gas cylinders, and the disposal of an atypically large amount of hazardous waste.

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.g., 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 (e.g., acrylic acid, vinyl 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 SRMIST. Hazardous waste must be collected, submitted to Chemical Waste Disposal Committee, and shipped to a permitted treatment, storage, or 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 department head, project's principal investigator, and animal house manager to report any changes or additions to the production of hazardous waste as well as any actions taken to reduce waste production per unit of production. According to the regulations on hazardous waste, Institute may store hazardous waste for up to 90 days and must keep a record of all sales, transfers, storage, recycling, and reprocessing of such wastes unless the State Pollution Control Board in question has extended the allotted time. The waste could be recycled or reused, disposed of in on-campus private or public treatment, storage, and disposal facilities, or burned as suggested. Additionally, inventories of "end-of-life" consumer goods like e-waste must be made.

Satellite accumulation areas

Satellite accumulation areas are areas designated for the collection and temporary storage of hazardous waste close to the source of generation. Once containers are full, the Chemical Waste Disposal Committee collects them and transports them to a Central Waste Accumulation Area.

Central Waste Accumulation Area

At a central accumulation area, hazardous waste collected from the campus by the Chemical Waste Disposal Committee is stored, consolidated, and packaged for disposal. This building is a secure, hazard-marked area that is inspected every week. 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 Institute'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. The Chemical Waste Disposal Committee has copies of the plan available.

Training



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Hazardous waste training is provided by the Chemical Waste Disposal Committee for all SRMIST 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, SRMIST 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:

- i. Waste avoidance or pollution prevention through cleaner production
- ii. Recovery, reuse and recycling

Recordkeeping

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



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