

Chemical Waste Disposal Procedure

Amrita Vishwa Vidyapeetham — Policy & Procedure (Version: 2024)

Last Updated: December 12th 2024



1. Purpose:

To ensure safe, compliant and auditable management of laboratory and other chemical wastes generated across Amrita campuses, preventing harm to people and the environment and meeting applicable Indian laws and regulatory requirements.

2. Legal basis (short)

Amrita's chemical waste management is governed by the Environment (Protection) Act, 1986 and subordinate rules and guidance including the Hazardous & Other Wastes (Management & Transboundary Movement) Rules (2016 and subsequent modifications), the Manufacture, Storage and Import of Hazardous Chemical Rules (MSIHC) 1989 (as applicable), and the Bio-Medical Waste Management Rules, 2016 for biomedical waste streams. These statutes require segregation, safe storage, authorized transport and use of authorised disposal facilities, record keeping and incident notification.

3. Scope & applicability

This Procedure applies to all staff, students, visitors, contractors and affiliates who store, use, generate, handle or manage chemical wastes at any Amrita campus (including research labs, teaching labs, workshops, kitchens and maintenance yards). It covers generation → segregation → interim storage → transport → final treatment/disposal.

4. Key responsibilities

- **Generator (Lab PI / Course Coordinator / Unit Head / Staff / Student):** segregate waste at source, label containers, complete manifests, arrange collection via Chemical Waste Contact, follow SDS instructions, and immediately report spills/incidents.
- **Chemical Waste Contact / Local EHS Officer:** review manifests, maintain manifest/collection schedules, coordinate with authorised transporters/TSDFs, ensure compliant storage and secondary containment, maintain local records and training.
- **Central EHS & Sustainability Office:** maintain overall policy, maintain TSDF/contractor list, approve on-site neutralisation procedures, arrange emergency response support, submit statutory returns and audits.

- **Contractors / Transporters / TSDFs:** must be authorised by the relevant State Pollution Control Board and comply with manifest, packaging, TREM card and transport requirements.

5. Waste classification & segregation (at source)

1. **Identify** chemical waste using the Safety Data Sheet (SDS) and classify as: flammable, corrosive (acid/alkali), oxidiser, toxic, reactive, heavy-metal containing, infectious/biomedical, solvent, pesticide, etc. (use Hazardous Waste schedule codes where applicable).
2. **Segregate** into compatible groups at the point of generation (lab bench / fume hood). Never mix unknowns or incompatible classes (e.g., acids with cyanides/oxidisers or organics with oxidising acids).
3. **Use approved containers** only (DG-grade plastic drums for corrosives/solvents, sealed glass Winchester bottles for small volumes if compatible). Provide headspace for volatile wastes. Seal and cap containers; use secondary containment trays or bunds.
4. **Label** containers clearly with: chemical name(s), concentration, generator unit, date, hazard category, volume, and “Chemical Waste — For Disposal (Amrita)”. Follow MSIHC / ADG labelling where applicable.

6. On-site disposal pathways (permitted, limited, or prohibited)

All on-site disposal must follow SDS instructions and local wastewater/STP admission standards. Where doubt exists, contact Central EHS for approval.

A. Disposal to sanitary sewer/laboratory sink (STRICT CONTROLS)

- Permitted **only** for a small set of water-miscible, low-toxicity materials and neutralised acids/bases after verification against applicable local wastewater admission/discharge standards and the campus STP capacity/acceptance criteria (CPCB / local municipal STP standards). Always confirm with Central EHS and the STP operator before sewer disposal. A flush of water after discharge is required to reduce vapour ingress; carry out sink discharge within a fume hood when feasible. Neutralisation (see below) must be conducted only by trained personnel with PPE and documented pH testing (target pH 6–10) prior to discharge

B. Holding tanks/site collection sums

- Where local drains or units have dedicated holding tanks (e.g., certain anatomy or bioscience blocks), these may be used provided they are approved, monitored (BMS or manual), and emptied by authorised waste contractors. Central EHS must be notified of tank levels and scheduled pump-outs.

C. Evaporation to the atmosphere (very limited)

- Evaporation/venting through a fume hood is allowed only for **non-toxic, non-flammable, non-dangerous** solvents in **very small** quantities, and only where SDS and EHS approve. Never use open-air evaporation

D. Inactivation / chemical neutralisation

- Neutralisation/inactivation may be used for acids/bases and specific reactive wastes **only** under approved SOPs, after a risk assessment, and by trained staff. pH must be confirmed with calibrated instruments/strips. Disposal of neutralised effluent to sewer remains conditional on meeting local STP/admission standards. Documentation of the neutralisation step (who, how, pH result) is mandatory.

E. Off-site disposal via authorised commercial contractor / TSDF

- All wastes that cannot be lawfully and safely discharged on-site (including most organic solvents, halogenated organics, heavy-metal wastes, concentrated acids/alkalis above threshold, reactive wastes, expired reagents) must be segregated, packaged, labeled, and stored for collection by an authorised hazardous waste contractor or Common Hazardous Waste Treatment, Storage & Disposal Facility (TSDF). The generator must arrange collection only with authorised entities and complete the required manifests and TREM cards. The transporter and TSDF must hold valid SPCB/TSPCB authorisations.

7. Storage & containment (interim)

- Storage areas must be designated, secured (restricted access), ventilated, and have secondary containment (bunds, trays) sized for 110% of the largest container or 25% total volume—whichever is greater. Storage must be away from drains, ignition sources, and protected from the weather. Flammable wastes require flame-proof storage as per MSIHC/Fire norms. Segregation by compatibility and clear labelling is mandatory. Periodic inspections of storage must be recorded (log card).

8. Labelling, manifesting & documentation

- **Labels:** Use the Amrita chemical-waste label template (chemical name, hazard class, generator, date, volume). For transport, comply with ADG/MSIHC/Hazardous Waste labelling rules.
- **Manifest (Form 10):** All off-site movements of hazardous/other wastes must be accompanied by the statutory manifest (generally Form 10 or the State e-manifest equivalent). The generator prepares and retains copies, the transporter signs, and the TSDF signs on receipt. Multiple copies are retained by the generator, transporter, and facility as required.
- **Transport Emergency (TREM) Card (Form 11):** For each consignment, a TREM card describing hazards, first-aid, and spill actions must be provided to the transporter and carried in the vehicle during transport.

- **Records & retention:** Maintain waste manifests, storage logs, disposal receipts, SDSs, and incident records. For biomedical waste streams, retain records for **5 years** as required by Bio-Medical Waste Rules, 2016; for other hazardous wastes, retain records and annual returns as required by Hazardous & Other Wastes Rules and the State Pollution Control Board (recommendation: retain manifests & receipts for at least 5 years to ensure auditability).

9. Transport & off-site transfer

- Only authorised transporters (with SPCB authorization and valid vehicle documentation) may transport hazardous waste. The transporter must carry the TREM card and the required PPE/containment equipment. Prior intimation to SPCBs may be required for interstate/transit movements; the responsibility for safe transport rests with the party that arranges transport (sender or receiver) and must be indicated on the manifest. On collection day, a Chemical Waste Contact must be present to handover and receive the contractor's Service Advice and Waste Transport Certificate.

10. Emergency, spill response & incident notification

- **Immediate actions:** Evacuate/cordon area, contain spill with absorbents/sand if safe, stop source, if possible, avoid flaring or water runoff into drains. Use PPE and follow the SDS first-aid measures.
- **Notify:** Inform Local EHS Officer and Central EHS immediately. If a spill threatens public health, waterways, or exceeds regulatory thresholds, notify the relevant State Pollution Control Board and local emergency services immediately as required by law. All incidents must be recorded and investigated; corrective actions documented. State rules require immediate reporting of accidents involving hazardous waste.

11. Training, audits & compliance

- All generators, technical staff and designated waste handlers must receive annual training covering segregation, labelling, neutralisation SOPs, spill response, manifest completion and incident reporting.
- Central EHS will audit laboratory and storage compliance at regular intervals and maintain a corrective action register.

12. Roles for approvals & unusual disposals

- **Central EHS** must approve: any new on-site neutralisation activity, large volume sink discharges, experimental treatment techniques, or any planned export of hazardous wastes. Any plan to treat wastes on-site (beyond basic neutralisation) requires a documented risk assessment, SOP and EHS approval and may require SPCB permit.

13. Annual reporting & statutory returns

- Central EHS will prepare and submit annual returns and records to the relevant State Pollution Control Board and/or CPCB as required under Hazardous & Other Wastes

Rules. Departments must provide waste generation details, manifests and disposal receipts in time to meet statutory schedules.

14. Practical lab checklist (quick)

1. Keep SDS for every chemical.
2. Segregate incompatible wastes at source.
3. Label container (name, hazard, date, volume).
4. Use secondary containment and cap containers.
5. Record waste in local log; notify Chemical Waste Contact when container is $\geq 75\%$ full.
6. For sink disposal, check SDS + Central EHS + STP acceptance in writing before discharge.
7. For off-site disposal, complete Form 10 manifest and provide TREM card to transporter.
8. Retain copies of manifests & TSDF receipts for at least 5 years.

15. References & key legal sources

- The Environment (Protection) Act, 1986. [Central Pollution Control Board](#)
- Hazardous & Other Wastes (Management & Transboundary Movement) Rules, 2016 (and subsequent amendments / state implementations). hspcb.org.in+1
- Manufacture, Storage & Import of Hazardous Chemical Rules, 1989 (MSIHC). [Nagarik Mancha](#)
- Bio-Medical Waste Management Rules, 2016 (records retention & BMW handling). [Central Pollution Control Board](#)
- CPCB / State Pollution Control Board guidance on wastewater discharge standards and hazardous waste manifest/TREM (Form 10 / Form 11).

Implementation note

This Procedure is an Amrita internal regulation and minimum standard. Where State Pollution Control Board (SPCB) or municipal rules are stricter, the stricter standard applies. Central EHS will update the Procedure in response to regulatory changes—consult Central EHS or the Amrita EHS intranet for the latest appendices, authorised contractor list, and electronic manifest procedures.



AMRITA

VISHWA VIDYAPEETHAM

DEEMED TO BE UNIVERSITY UNDER SECTION 3 OF UGC ACT, 1956