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Prepared by	Approved By	Issue Date

1. OBJECTIVE

This standard operating procedure outlines the process in which chemical waste generated in the research laboratories of Department of Medicine located at MD1, MD6 and NUH are to be disposed of in a safe and environmentally sound manner.

2. SCOPE

This chemical waste disposal procedure is applicable to all staff and students and details how the chemical waste are to be transported from the laboratory to the cargo/service lift.

3. RESPONSIBILITY AND ACCOUNTABILITY

3.1 The principal investigator is to provide on-the-job training for all laboratory staff and students for the safe disposal of chemical waste and ensure that they abide by the guidelines established in accordance to the applicable local legislations. The principal investigator shall also ensure that all waste chemical containers are properly labelled, wastes are segregated and stored at the designated storage areas by consulting relevant sections of Safety Data Sheets and maintain good housekeeping for all chemical wastes stored in the common area under his/her jurisdiction.

3.2 Staff and students working with hazardous chemical waste must be aware of potential hazards by referring to Safety Data Sheets, obtain proper training on chemical waste disposal and knowledgeable of this SOP.

3.3 YLLSOM Research Facilities Management (RFM) team is responsible for liaising with the NEA-licensed chemical waste contractor, on the relevant waste disposal requirements for MD1 and MD6 building.

4. CHEMICALS FOR DISPOSAL

These may include accumulated generated wastes; unused, unopened or unknown chemicals; obsolete or expired chemicals or substances; empty chemical containers (including those used to contain hazardous chemicals) or spill residues.

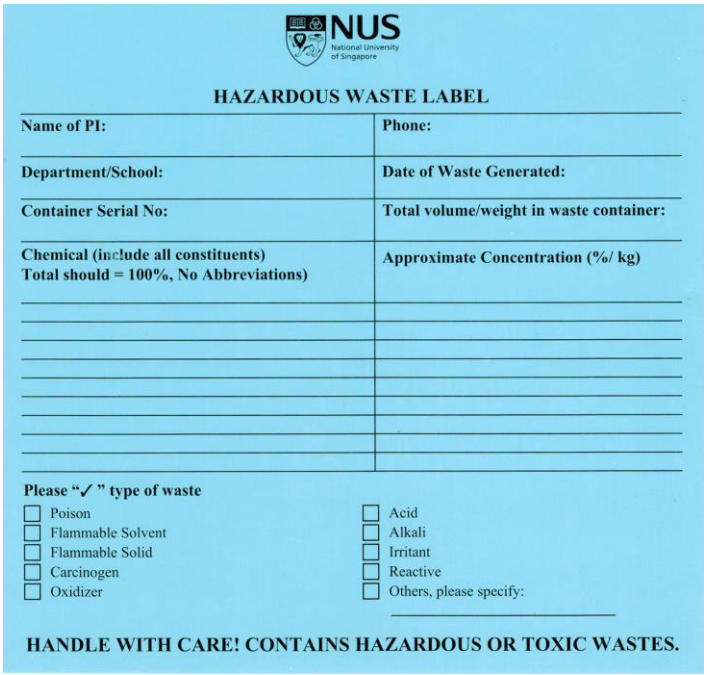
5. CHEMICAL SAFETY TRAINING

All individuals who handle chemical waste are required to complete Chemical Safety Training via IVLE @ https://ivle.nus.edu.sg/.

6. PROCEDURE

6.1 Waste Labeling and Marking

a. Waste container must be compatible with their contents. Do not pour chemical waste that is incompatible with previous chemical that has been contained in that bottle even if the bottle had been rinsed.
b. Always refer to EPA's Chemical Compatibility Chart for determining the compatibility of chemical mixtures. https://share.nus.edu.sg/corporate/procedures/safety_and_health/Chemical-Safety-Procedures/EPAChemicalCompatibilityChart.pdf
c. A NUS Hazardous Waste Label (obtainable from the OSHE Safety & Health Manager) must be properly and clearly filled and pasted on the container. Labels must not be defaced.



NUS National University of Singapore

HAZARDOUS WASTE LABEL

Name of PI:	**Phone:**
Department/School:	**Date of Waste Generated:**
Container Serial No:	**Total volume/weight in waste container:**
Chemical (include all constituents) Total should = 100%, No Abbreviations)	**Approximate Concentration (%/ kg)**

Please "✓" type of waste

- ☐ Poison
- ☐ Flammable Solvent
- ☐ Flammable Solid
- ☐ Carcinogen
- ☐ Oxidizer
- ☐ Acid
- ☐ Alkali
- ☐ Irritant
- ☐ Reactive
- ☐ Others, please specify: _____

HANDLE WITH CARE! CONTAINS HAZARDOUS OR TOXIC WASTES.

6.2 Segregation and Storage

a. Ensure all wastes are segregated and stored at the designated storage areas.
b. The areas where chemical wastes are accumulated must have sufficient secondary containment to collect any minor spills from container failure. The secondary container should be made of chemical resistant plastic or metal.
c. Except when adding or removing waste, the container must be kept closed. It must also be kept clean with no visible contamination on the outside.
d. Do not overfill waste containers. Leave a 10% head space to allow for expansion.
e. It is good practice to dispose chemical waste within 90 days from date of generation.
f. Handle all waste containers with appropriate personal protective equipment (long sleeve lab coat, covered-toe shoes, nitrile gloves and safety goggles).

6.3 Waste Disposal

a. The chemical waste disposal exercise in MD1 and MD6 laboratories are conducted by the YLLSOM Research Facilities Management (RFM) team. The RFM team will arrange for NEA-licensed chemical waste contractor to collect hazardous waste.
b. Once the vendor has been selected, an email notification from the RFM will be sent to the safety leads to confirm the actual date for chemical disposal. Laboratories that wish to participate in this exercise are required to submit the chemical waste disposal list before the disposal for consolidation and verification.
c. The laboratory shall send a representative to transfer the chemical waste to the designated collection point during the disposal exercise at the assigned time slot.
d. Laboratory personnel handling the chemical waste shall don the appropriate PPE (long sleeve laboratory coat, covered-toe shoes, nitrile gloves and safety goggles).
e. Use the ChemSafe Transporter Trolley to transport the chemical waste or secondary containers to waste collection point. Make sure the trolley doors are closed.
f. The segregated chemical wastes are transported down by the unmanned service lift by representatives from YLLSOM Research Facilities Management (RFM) team.
g. In NUH labs, the lab arranges for NEA-licensed waste collector. To source: http://www.nea.gov.sg/docs/default-source/anti-pollution-radiation-protection/chemical-pollution/Toxic-Industrial-Waste/list-of-tiw-collectors.pdf
A consignment note shall be completed for all hazardous waste collected.

7. ACCIDENT AND INCIDENT REPORTING

Accidents resulting in injuries or spill incidents must be reported to the PI and/or laboratory safety lead immediately after first aid is applied.
Seek medical attention when necessary at the University Health Centre or proceed to the Accident & Emergency units of National University Hospital after office hours.
All incidents or accidents have to be notified to OSHE within 24 hours via the online NUS Accident and Incident Management System (AIMS) @https://inetapps.nus.edu.sg/osh/portal/eServices/ehs360_aims.html. The AIMS report can be submitted by the injured staff/student, safety leads, his or her supervisor/representative if the staff or student is unfit/unable to do the initial report.

8. REFERENCES

NUS Laboratory Chemical Safety Manual (NUS/OSHE/M/02)
https://share.nus.edu.sg/corporate/procedures/safety_and_health/Chemical-Safety-Manuals/Manual-chemical-safety.pdf

9. REVISION HISTORY

Date Revised	Version No.	Author	Summary of Revisions
16-03-2016	001	Yeo Soh Bee	
01-10-2016	002	Yeo Soh Bee	Section 7: Revised Accident and Incident Reporting System (AIRS) to Accident and Incident Management System (AIMS)