Ateneo De Manila University

School of Science and Engineering Laboratory Safety Manual

Office of the Dean
School of Science and Engineering
2021 Edition

Written and Compiled By:
Mr. Miguel Antonio M. Brion
Ms. Maria Katrina C. Constantino

Edited and Approved By:
Dr. Raphael A. Guerrero

3. Materials Waste Management

The waste produced by any laboratory is the responsibility of the department. Laboratory waste management and disposal are jointly managed by the department involved, the SOSE Laboratory Safety and Regulatory Compliance Officer, Central Mobility and Security Office, and The Office of Facilities and Sustainability. Thus, it is advisable that all departments comply with the waste management and disposal protocol of the university as well as with national regulations.

3.1. Waste Responsibilities

Within SOSE departments, the Department Laboratory Safety Officer, Department Biosafety Officer, Laboratory Technicians, and Department Chairpersons are responsible for ensuring proper waste labelling, storage, and coordination with the Office of Facilities and Sustainability and the Campus Safety and Mobility Office (CSMO) with regard to final waste disposal. Also, SOSE departments are advised to comply with the Ateneo De Manila University Hazardous Waste Management Program.

3.2. Waste Storage

Waste contains hazards. That is why proper storage of waste is important in minimizing these hazards.

- The storage space must be accessible during emergencies and for the purpose of inspection and monitoring.
- The facility should be enclosed but adequately ventilated.
- The facility should be separated from the laboratory technician's room, materials storage room, and laboratories.
- The floors should be impermeable to liquids and resistant to attack by chemicals, not slippery, and should have a spill containment basin.
- The facility should be properly secured and not easily accessed by unauthorized personnel.
- Drums should preferably be stored upright and stacked not more than four (4) drums high.
- Drums should be raised in pallets or similar structures to allow passage of water and circulation of air.
- All containers should be checked regularly for leaks.
- There should be segregation of waste based on the type and hazards dictated by the Hazardous Waste Procedural Manual III (DAO-92-29) or the DENR Classification of Hazardous Wastes (**See Appendix Table 5**). In case the material is not considered hazardous, it should still be properly stored in the waste storage facility and separated from hazardous waste.
- The facility should be equipped with an automatic fire suppression system, or the walls of the storage facility should be able to contain the fire within the area for approximately 90-120 minutes.
- The container material must be compatible with the waste.

3.3. Waste Labelling

Each container must be labeled with the following information:

- Amount: The amount of waste, giving the container size and indicating whether it is full, ¾ full, etc. Liquid waste is to be given in gallons or liters, and solid waste in pounds or kilograms.
- Principal Constituents: Each compound in the waste containers must be listed by its complete chemical name, and the approximate percentage of each compound. Do not use abbreviations.
- Waste Characteristics: All hazardous characteristics of waste should be identified. The terms most appropriately describing the waste should be included. If the waste is an acid or a base, the approximate pH of the waste should be indicated beside “Corrosive” on the label. Carcinogenicity, mutagenicity, or teratogenicity should be specified beside “Toxic”.
- Special Handling Considerations: Any toxic or reactive hazards, to caution the handler, should be noted. Substances or conditions which could result in an explosion, fire, heat generation, or flammable gas generation should be explained.

3.4. Waste Inventory

SOSE departments generating hazardous waste should prepare a quarterly inventory report to be submitted to the Pollution Control Officer for reporting to DENR. A copy should also be submitted to the SOSE Laboratory Safety and Regulatory Compliance Officer.

If a department does not produce any hazardous waste but operates laboratories and produces non-hazardous wastes, a similar report can be made following the same schedule and format and must be submitted to the SOSE Laboratory Safety and Regulatory Compliance Officer.

The report should contain the following information:

- characteristic
- classification
- nature
- quantity (kgs)

The inventory should be done quarterly covering the following months:

- 1st Quarter: January – March
- 2nd Quarter: April – June
- 3rd Quarter: July –September
- 4th Quarter: October – December

3.5. Waste Disposal

Waste disposal should be done by an accredited DENR service provider and in accordance with DENR Hazardous Waste Procedural Manual III.

3.5.1. Chemical Waste

3.5.1.1. Chemical Waste Characteristics

Hazardous wastes are classified according to the following:

- **Ignitability:** Liquids with a flashpoint less than 60°C; oxidizers, solids capable of burning vigorously and persistently after ignition through friction, absorption of moisture, or spontaneous chemical changes at standard temperature and pressure.
- **Corrosivity:** Aqueous solutions with a pH less than or equal to 2, or greater than or equal to 12.5; liquids which corrode steel at a rate greater than 6.35 mm per year at 55°C.
- **Reactivity:** Normally unstable and undergoes violent changes; reacts violently with water; forms potentially explosive mixtures with water of pH conditions between 2 and 12.5; capable of detonation or explosive reaction.
- **Toxicity:** Fatal to humans in low doses; less than oral LD50 of 50 mg/kg (rats), inhalation LC50 of 2 mg/L (rats), or dermal LD50 of 200 mg/kg (rabbit); toxic, carcinogenic, or suspected carcinogenic, mutagenic, teratogenic.

3.5.1.2. Disposal of Chemical Wastes

3.5.1.2.1. Individual Waste Streams

A waste stream generated from a laboratory procedure should not be combined with other chemical wastes. The fewer the number of chemicals associated with a waste, the more economical the disposal method for that waste. If this is not practical, there must be careful consideration about which wastes can be combined.

3.5.1.2.2. Non-Halogenated Flammable Solvents

Non-halogenated flammable solvents may be sent to the incinerator and must be free of heavy metals, and reactive materials, e.g. sodium metal.

3.5.1.2.3. Halogenated Solvents

Halogenated solvents must not be combined with flammable nonhalogenated solvents. Examples of halogenated solvents include methylene chloride, chloroform, and carbon tetrachloride.

3.5.1.2.4. Heavy Metals

These should be converted to sulfide, which is less soluble, before final disposal.

3.5.1.2.5. Non-Hazardous Wastes

These may be disposed of as ordinary trash. To avoid suspicions, they must however be labeled and marked as “NON-HAZARDOUS”. Non-hazardous wastes in liquid form may be disposed of down the drain.

- Agarose
- Alumina/aluminum oxide
- Ammonium phosphate
- Calcium carbonate
- Calcium oxide
- Calcium phosphate
- Calcium sulfate
- Citric acid
- Dextrin
- Glycine
- Magnesium carbonate
- Magnesium chloride
- Magnesium sulfate
- Potassium carbonate
- Potassium chloride
- Potassium sulfate
- Sephadex
- Silica gel
- Sodium chloride
- Sodium citrate
- Sodium phosphate
- Sodium sulfate
- Stannous oxide
- Starch
- Sugars
- Titanium oxide

In general, the following materials may be placed in ordinary trash bins for disposal provided they are not contaminated with hazardous wastes:

Materials listed below in quantities up to about 100 g or 100 mL at a time are suitable for disposal down the drain while flushing with excess water:

Organic Chemicals

- Alkanols with fewer than 4 carbons
- Aliphatic aldehydes with fewer than 5 carbons
- Amides with fewer than 5 carbons
- Aliphatic amines with fewer than 7 carbons
- Carboxylic acids with fewer than 6 carbons
- Esters with fewer than 5 carbons
- Proteins, nucleic acids, carbohydrates, soluble fats and their precursors

Inorganic Chemicals

- Sulfates of Na+, K+, Mg2+, Ca2+, Sr2+, NH4+
- Carbonates of Na+, K+, Mg2+, Ca2+, Sr2+, NH4+
- Oxides of Mg2+, Ca2+, Sr2+, Al3+, Si4+, Ti2+, Mn2+, Fe2+, Fe3+, Co2+, Co3+, Cu2+, Cu+
- Chlorides of Ca, Na+, K+, Mg2+, NH4+
- Borates of Na+, K+, Mg2+, Ca2+

3.5.1.2.6. Hazardous Chemical Wastes

Hazardous chemical wastes should be placed and segregated into leak-proof barcoded waste bottles following the classification of the DENR-EMB (See Appendix Table 5). These wastes will be hauled by DENR-accredited transporters for treatment and disposal.

3.5.2. Sharps, and Glass Wastes

Sharps, including but not limited to syringes, razor blades, Pasteur pipettes, capillary tubes, and scalpels should be placed in puncture-resistant waste collection containers prior to disposal.

3.5.3. Biological Waste

Biological Waste generated at SOSE laboratories may be classified as:

- Microbiological waste from bacterial or eukaryotic cell culture:
  All microbiological waste (cultures, stocks) should be decontaminated through autoclaving and immediately discarded. Liquid cultures may be discarded down the sink; solid media should be discarded with the regular waste. Note that only risk group 1 and 2 organisms are allowed at SOSE.
- Untreated animal carcasses used for physiological experiments or dissection:
  Animal carcasses, organs or parts obtained from markets which are not subjected to any chemical treatment can be disposed of with the regular garbage.
- Animal carcasses treated with chemicals (i.e. formalin):
  Animal carcasses treated with preservation fluids should be gathered in an appropriate container and returned to the same Bureau of Animal Industry accredited supplier for hauling and disposal.

3.5.4. Radioactive Waste

Proper handling and disposal of radioactive waste must be followed based on DENR Administrative Order No. 29 Series 1992 entitled “Implementing Rules and Regulations of Republic Act 6969” also known as the “Toxic Substances and Hazardous and Nuclear Waste Control Act of 1990”. The law also provides that the regulation, control and management of radioactive materials and nuclear/radioactive wastes generated throughout the country shall be regulated by the Philippine Nuclear Research Institute (PNRI)

Some basic protocols that must be observed when handling radioactive waste are the following:

- Minimize the time spent near any radioactive material.

- Increase the distance between the radioactive material and the human body. Use shielding between the radioactive source and your body.
- Separate radioactive wastes from nonradioactive ones
- Protective clothing and attire (lab coats, disposable gloves, etc.) shall be worn when handling radioactive waste.
- Areas with radioactive materials must be locked when unattended to prevent unauthorized access to radioactive materials. It should have proper waste containers that are shielded, cannot be opened easily and are leak-proof.
- Label all containers of radioactive materials or items used with radioactive material with labels bearing the words "CAUTION: RADIOACTIVE MATERIALS" and the radiation symbol. Labels should also include date, nuclide, and quantity of the radioactive material.

3.6. Discharges to the Sanitary Sewer

Disposal of non-halogenated solvents to the sanitary sewer is limited to low-toxicity solvents, miscible in water, diluted to non-flammable concentrations. Small volumes of acids and bases can be diluted and discharged in the sanitary sewer if followed by flushing with copious volumes of water. Acids and bases containing heavy metals must not be disposed of through the sewer system. Only trace quantities of oils associated with cleaning and washing operations should be released to the sanitary sewer.

Avoid discharges to the sanitary sewer of the following:

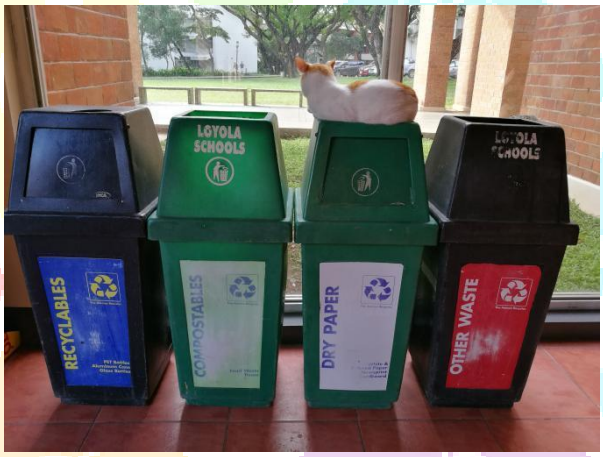
- Materials that may create a fire or explosive hazard such as gasoline, benzene, fuel oil, used oil or any flammable or explosive solid, liquid or gas.
- Water or waste materials with pH level lower than 5 or higher than 11 which has corrosive property.
- Solid or viscous materials in amounts that may obstruct flow or interfere with operations such as fats, grease, etc.
- Discharges of any toxic material in volume or strength that may cause interference with waste treatment processes, or contamination of sludge of effluent from the wastewater treatment.
- Heat discharges which will inhibit biological activities or increase the temperature of wastewater treatment effluent by about 40°C.

3.7. Hazardous Waste Minimization

Minimizing waste generation also minimizes hazards and probability of accidents brought by the waste. Laboratories are encouraged to consider ways of reducing the volume of waste or preserving the reuse of the materials through redesigning of experiments. But in cases where it is more detrimental to reuse a certain material than to dispose of it, it is advisable to dispose of the waste. Recyclable materials should be kept separate from other waste. Efforts should be made to decontaminate, detoxify, neutralize, or otherwise render the waste non-hazardous. Different waste materials should be segregated whenever possible.

3.8. Solid Waste and Recycling

All solid wastes produced by the laboratories which are safe for trash bin disposal must comply with DENR Administrative Order No. 2001-34 entitled “Implementing Rules and Regulations of Republic Act 9003” also known as the “Philippine Ecological Solid Waste Management Act of 2000”, and the ecological solid waste management program of the Ateneo De Manila University. The ecological solid waste management of the university starts from waste reduction, segregation at source, to waste diversion at unit-based Materials Recovery Facilities. Solid waste must be segregated into five categories namely recyclables, dry paper, electronic waste, compostable, and other waste. If possible, wastes that can be recycled, repurposed, or reused prior to bin disposal are encouraged to minimize unnecessary solid waste collected by the university from laboratories. But if the solid waste is a hindrance to the normal functions of laboratory facilities and personnel, or is a source of other laboratory hazards, disposal is highly recommended.



3.9. Decontamination of Work Areas

Work surfaces should be protected from contamination by using disposable plastic-backed absorbent paper or stainless-steel trays. Other items and equipment which become contaminated during experimental activity should be decontaminated with the appropriate solvent.
The most common method for decontaminating laboratory surfaces is by liquid decontamination. A 70% ethanol or 5 – 10 % bleach solution is sufficient for general decontamination of surfaces such as lab benches.

3.10. Decontamination of Materials for Disposal

Contaminated materials must either be decontaminated by procedures that decompose the chemical component or be removed for subsequent disposal. Chemical components which have spilled out of a primary container to constitute a hazard must be inactivated in situ or should be absorbed by appropriate means for subsequent disposal. A means for assuring adequacy of clean-up should be provided.

Decontamination of wastes and their ultimate disposal are closely linked. All infectious material should be decontaminated, autoclaved, or incinerated within the laboratory.

Autoclaving is the preferred method for decontamination. Materials for decontamination and disposal should be placed in appropriate containers for reuse or disposal after sterilization. Categories for separation of various types of waste may include:

- Non-contaminated, non-infectious waste that can be reused or recycled or disposed as general waste;
- Contaminated (Infectious) sharps;
- Contaminated material for decontamination by autoclaving and thereafter washing for reuse/recycling;
- Contaminated material for autoclaving and disposal.

6. Emergency Procedures

6.2. Response to Specific Incidents/Accidents

6.2.1. Chemical Spills

Laboratory users should clean up spilled chemicals immediately to reduce exposure of other lab users.

Immediate Action

- When the toxicity of the spilled material is unknown, treat the spill like a potential health hazard by avoiding exposure and seeking assistance from trained personnel.
- Everyone should leave the affected area, closing the door and warning others not to enter the contaminated area.
- Notify the faculty or lab technician in charge of the class or experiment.
- Avoid skin contact and minimize inhalation.
- Any contaminated clothing should be removed and containerized. These should be laundered separately from other clothing before reuse.
- Use, as appropriate, a safety shower or eye wash fountain.
- Exposed skin should be thoroughly washed with soap and water. Continue flushing with water for 15 minutes or more.
- For chemical splashes on the eyes, a minimum of 20-minute flushing with copious amounts of water is recommended. Check for and remove contact lenses. Rotate the eyeballs so that all surfaces are rinsed. Forcibly hold the eyelids open as necessary.
- Seek medical attention (Health Service, local 5110).

Spill Clean-up

- If the material is not particularly volatile, has a low order of toxicity, not highly corrosive, and there is no fire hazard, proceed with clean-up operations.
- Wear appropriate personal protective equipment: goggles, gloves, and respiratory protection, especially for volatile and toxic spills.
- Use sand/soil to contain liquid spills, and if applicable, use an absorbent material that will contain the liquids.
- For small liquid spills (<100 mL), paper towels, sand, or an absorbent can be used to contain the spill. However, paper towels are not suitable for cleaning up flammable spills.
- Do not brush up solid spills since this may produce airborne dust. Add sand to contain the solid spill. If the material is not reactive to water, you can add water to the spill-sand mixture to act as dust-suppressant. Use paper towels and a dustpan to collect the spill residue. Place in a labeled plastic bucket or container.
- If a volatile, flammable, or toxic material is spilled, warn everyone immediately to extinguish flames, and turn off spark-producing equipment. Shut down all

equipment and vacate the area until it is decontaminated. Report the incident to a faculty member or lab technician.

- Do not leave paper towels or other materials used to clean up a spill in open trashcans in the work area. Dispose of them properly.
- Ventilate the spill area by opening windows or use a fan.

6.2.2. Spills of Specific Types of Chemicals

6.2.2.1 Acids and Bases

- Avoid contact with skin. Neutralize acids and bases with solid sodium bicarbonate and citric acid, respectively. A quantity of solid not much greater than the volume of the liquid spilled should be sufficient, even for concentrated reagents.
- Mix neutralizing chemicals into the spill, adding some water to provide solvent for the neutralizing reaction. Use pH paper to determine whether the acid or base has been neutralized.
- After neutralizing, mopping should follow. Final rinse should be with clean water. Rinse mop and bucket.
- WARNING: Do not clean-up hydrogen fluoride (hydrofluoric acid, HF) with silica-containing materials such as sand or vermiculite.

6.2.2.2 Mercury

- Because of the high toxicity of mercury vapor, spilled mercury should be cleaned-up immediately and thoroughly using an aspirator or vacuum device. Domestic vacuum cleaners must not be used.
- Mercury spilled into floor cracks can be made non-volatile by amalgamation with zinc dust or by adding a mixture of finely powdered sodium thiosulfate (85 g) and powdered EDTA (15 g).
- Do not use sulfur to cover mercury since this will just complicate disposal.
- Contaminated materials used to clean up the spill should also be placed in properly labeled containers.

6.2.3. Biological Spills

Immediate Action

When a spill of biohazardous material occurs, clean-up should begin immediately to minimize exposing lab users to potentially infectious material. For BSL 1 level spills, the following measures should be taken:

- Notify others in the area to prevent contamination of additional personnel and the environment.
- Remove any contaminated clothing and wash exposed skin with disinfectant.
- Wear gloves and protective clothing, including face and eye protection if indicated.
- Cover the spill with cloth or paper towels to contain it.

- Pour an appropriate disinfectant over the paper towels and the immediately surrounding area (generally, 5% - 10% bleach solutions are appropriate).
- Apply disinfectant concentrically beginning at the outer margin of the spill area, working toward the center.
- After the appropriate amount of contact time (e.g. 30 min), clear away the materials. If there is broken glass or other sharps involved, use a dustpan or a piece of stiff cardboard to collect the material and deposit it into a puncture-resistant container for disposal.
- Clean and disinfect the area of the spillage (if necessary, repeat steps 2–5).
- Place contaminated materials within a leak-proof, puncture-resistant waste disposal container.
- Wash hands with soap and hand-washing disinfectant.
- After successful disinfection, inform the laboratory supervisor or Laboratory Technician that the site has now been decontaminated

6.2.4. Escape of Noxious Gases

Immediate Action

- Place the source of gas in a hood (and make sure to turn the exhaust fan on), open windows, and close off the room from the rest of the building.
- In any event, evacuate personnel.
- Heavy vapors (MW >>29) will lie along the floor. Much lighter vapors will rise. Leave the room in either an upright or crawling position, accordingly.
- WARNING: A mask may protect the wearer against inhalation of noxious gases, but be warned against absorption through the skin of such substances

6.2.5. Fires

Immediate Action

- Without entering a hazardous situation or area and without compromising your own safety, remove all individuals from the area.
- Alert others in the area of the fire.
- Immediately inform the Building Emergency Assistance Team head of the building or the Fire Marshall at the OFS. Identify yourself and the details of the fire.
- Confine the affected area by closing all doors, windows, and access.
- If the fire is small and confined, use the available fire extinguisher ONLY IF you have been trained to operate the fire extinguisher.
- Evacuate the building.
- Meet the emergency responders outside the building to provide information on the fire and any specific hazards in the laboratory.
- When alerted of a fire in the building, follow the campus emergency management plans.
- Do not re-enter the building unless permission is granted by the emergency responders

9. Appendices

***Table 5*. DENR classification of hazardous wastes.**

Wastes are considered hazardous if they are listed under the Classification of Prescribed Hazardous Wastes (HW) under the DENR Procedural Manual or they exhibit any of the four characteristics, namely: ignitable, corrosive, reactive or toxic based on Toxicity Characteristics Leaching Procedure (TCLP).

5.1 Hazardous Wastes

Class	Description	Waste Number
A. Wastes with Cyanide		
Wastes with cyanide	Waste containing cyanide with a concentration >200 ppm in liquid waste	A101
B. Acid Wastes		
Sulfuric acid	Sulfuric acid with pH = 2.0	B201
Hydrochloric acid	Hydrochloric acid with pH = 2.0	B202
Nitric acid	Nitirc acid with pH = 2.0	B203
Phosphoric Acid	Phosphoric acid with pH = 2.0	B204
Hydrofluoric acid	Hydrofluoric acid with pH = 2.0	B205
Mixture of sulfuric and hydrochloric	Mixture of sulfuric and hydrochloric acid with pH = 2.0	B206
Other inorganic acid	Other inorganic acid with pH = 2.0	B207
Organic acid	Organic acid with pH= 2.	B208
Other acid wastes	Acid wastes other than B201 to B208	B299
C. Alkali wastes		
Caustic soda	Caustic soda with pH = 12.5	C301
Potash	Potash with pH = 12.5	C302
Alkaline cleaners	Alkaline cleaners with pH = 12.5	C303
Ammonium hydroxide	Ammonium hydroxide with pH = 12.5	C304
Lime Slurries	Lime slurries with pH = 12.5	C305
Other alkali wastes	Alkali wastes other than C301 to C305	C399
D. Wastes with Inorganic Chemicals		
Selenium and its compounds	Includes all wastes with a total Se concentration > 1.0 mg/L based on analysis of an extract	D401
Arsenic and its compounds	Includes all wastes with a total As concentration > 5.0 mg/L based on analysis of an extract	D402
Barium and its compounds	Includes all wastes with a total Ba concentration > 100.0 mg/L based on analysis of an extract	D403
Cadmium and its compounds	Includes all wastes with a total Cd concentration > 5.0 mg/L based on analysis of an extract	D404
Chromium compounds	Includes all wastes with a total Cr concentration > 5.0 mg/L based on analysis of an extract	D405
Lead compounds	Includes all wastes with a total Pb concentration > 5.0 mg/L based on analysis of an extract	D406
Mercury and mercury compounds	Includes all wastes with a total Se concentration > 0.2 mg/L based on analysis of an extract. Refer to CCO	D407

Other wastes with inorganic chemicals	Wastes containing the following chemicals: - antimony and its compounds; - beryllium and its compounds; - metal carbonyls; - copper compounds; - zinc compounds; - tellurium and its compounds; - thallium and its compounds; - inorganic fluorine compounds excluding calcium fluoride	D499
E. Reactive Chemical Wastes		
Oxidizing agents	Includes all wastes that are known to contain oxidizing or reducing agents in concentration that cause the waste to exhibit any of the following properties: 1. It is normally unstable and readily undergoes violent change without detonating; 2. It reacts violently with water; 3. It forms potentially explosive mixtures with water; 4. When mixed with eater, it generates toxic gases, vapor or fumes in a quantity sufficient to present a danger to human health; It is a cyanide (CN) or sulfide (S) bearing wastes, which when exposed to pH conditions between 2 and 12.5 can generate toxic gases, vapors and fumes in a quantity that poses a danger to human health	E501
Reducing agents	Includes all wastes that are known to contain oxidizing or reducing agents in concentration that cause the waste to exhibit any of the following properties: 1. It is normally unstable and readily undergoes violent change without detonating; 2. It reacts violently with water; 3. It forms potentially explosive mixtures with water; 4. When mixed with eater, it generates toxic gases, vapor or fumes in a quantity sufficient to present a danger to human health; It is a cyanide (CN) or sulfide (S) bearing wastes, which when exposed to pH conditions between 2 and 12.5 can generate toxic gases, vapors and fumes in a quantity that poses a danger to human health	E502
Explosive and unstable chemicals	Includes all wastes that are – capable of detonation or explosive reaction when subject to a strong initiating source or when heated under confinement, or – capable of detonation or explosive decomposition at a temperature of 20°C and Pressure of 1 atm.	E503

Highly reactive chemicals	Includes all other wastes that exhibit any of the properties described for D501, D502, and D503.	E599
F. Inks/Dyes/Pigments/Paint/Latex/Adhesives/Organic sludge		
Aqueous based	Includes all aqueous based wastes that also meet one or more of the subcategories	F601
Solvent based	Includes all solvent based wastes that also meet one or more of the subcategories	F602
Inorganic pigments	Includes all wastewater treatment sludge from the production of inorganic pigments	F603
Ink formulation	sludge, caustic washings and sludge or wastewater and sludge from cleaning of tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing Chromium and Lead.	F610
Other mixed	Includes all aqueous-based wastes that also meet one or more of the subcategories.	F699
G. Waste organic solvent		
Halogenated organic solvents	Includes the ff. spent halogenated solvents: Tetrachloroethylene, tricholorethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, chlorobenzene, 1,2,2-Trichloroethane, chlorinated flouro-carbons if they contain a total of 10% or more (by volume) of one or more of the above before use; it also includes all still bottoms from recovery of these solvents and solvent mixtures.	G703
Non-halogenated organic solvents	Includes the ff. non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclo-hexanol, methanol, cresole, cresylic acid, nitrobenzene, toluene, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxy ethanol and 2 nitropropane and other non-halogenated organic solvents if they contain a total of 10% or more (by volume) of one or more of these solvents before use; it also includes all still bottoms from recovery of these solvents and solvent mixtures.	G704
H. Putrescible/Organic Wastes		
Animal/abattoir waste	Includes all wastes from animal feed lots containing an average of 100 or more animals; All wastes from commercial slaughter houses that slaughter an average of 500 or more animals per year; all waste from poultry farms with an average of 5,000 fowls or more;	H801

	all waste from facilities that process an average of 2500 fowls or more.	
Grease trap wastes from industrial or commercial premises	Includes all establishments that generate an average of 50 kg per day	H802
I. Oil		
Waste oils	Includes all wastes from establishments that generate, transport or treat more than 200 L of waste oil per day except vegetable oil and waste tallow	I101
J. Containers		
Containers previously containing toxic chemical substances	toxic chemical substances listed in Classes A, D, E, and L, sub-categories M504 and M505, and the chemicals listed in the Priority Chemical List. Containers that used to contain Polychlorinated biphenyl (PCB) are categorized as L406 and excluded from this sub-category.	J201
K. Immobilized Wastes		
Solidified wastes and polymerized wastes	Wastes whose hazardous substances are physically immobilized by consolidation to reduce the surface area of the wastes in order to meet the waste acceptance criteria	K301
Chemically fixed wastes	Wastes whose hazardous substances are chemically immobilized through chemical bonds to an immobile matrix or chemical conversion to meet the waste acceptance criteria	K302
Encapsulated wastes	Wastes whose hazardous substances are physically immobilized by enveloping the waste in a non-porous, impermeable material in order to store hazardous wastes until such time that a proper disposal facility is available.	K303
L. Organic Chemicals		
Wastes with specific nonhalogenated toxic organic chemicals	Non-liquid waste containing the following: – Tri-butylin – 1,2-diphenylhydrazine benzene	L401
Ozone depleting substances	Waste chlorofluorocarbons (CFCs) and halons. Recovered coolant containing chlorofluorocarbons (CFCs) or halons	L402
PCB wastes	Wastes contaminated with PCB and waste products containing PCB. Refer to CCO.	L406
M. Miscellaneous Wastes		
Pathogenic or infectious wastes	Includes pathological wastes (tissues, organs, fetuses, bloods and body fluids), infectious wastes and sharps	M501

Friable asbestos wastes	Wastes containing friable asbestos. Waste blue and brown asbestos fibers. Refer to CCO.	M502
Pharmaceuticals and drugs	Expired pharmaceuticals and drugs stocked at producers and retailers' facilities.	M503
Pesticides	Waste pesticides other than M505. Includes all wastewater sludge from production of pesticides other than those listed in M505.	M504
POPs (Persistent Organic Pollutants) pesticides	Waste pesticides listed in the Stockholm Convention (POPs Convention) such as aldrin, chlordane, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, toxaphene, and DDT.	M505

5.2 Exempted Wastes

Description
Garbage from domestic premises and households
Industrial and commercial wastewaters which are disposed of on-site through the sewerage system
Industrial and commercial solid wastes which do not contain hazardous wastes as identified in Table 4.1
Materials from building demolition except asbestos
Septic tank effluents and associated sullage wastewaters
Untreated spoils from mining, quarrying and excavation works but not materials in the nature of tailings,
commercially treated materials and mine facility consumables

5.3 Sample DENR format for waste bottle labels

Waste Information **Bottle no** (refer to inventory sheet)	HW Class	**Please refer to DENR HW Classification below**
	HW Description	**Please refer to DENR HW Classification below**
	HW Number	**Please refer to DENR HW Classification below**
	Characteristic	**Indicate if chemical waste is explosive, flammable, reactive/oxdizing, toxic, corrosive, infectious or radioactive**
	Form	**Indicate if chemical waste is in liquid or solid form or has both solid and liquid components**
	Volume	**Volume of hazardous waste contained in the bottle**
	Packaging date	**Date the container was first filled, created or recorded into the inventory**
	Shipping date	**Date on which the hazardous waste will be removed from the storage area (Note: this can be left blank for the meantime)**

	Waste transport record number	**Number in the Manifest form assigned by DENR (Note: this can be left blank for the meantime)**
Container Information	Capacity	**Maximum capacity of container**
	Material	**Material the container is made of (e.g. glass, PET etc.)**
Generator Information	ID Number	
	Name	Ateneo de Manila University
	Address	Katipunan Ave., Loyola Heights, Quezon City
	Telephone #	(02) 8426 6001 loc 4282, 4284
	Fax #	
	Name of HWMS	**Name of hazardous waste management supervisor**