



Standard Operating Procedure

Chemical Waste Disposal Procedures

I. POLICY: The Puerto Rico Clinical and Translational Research Consortium (PRCTRC) ensure the safety and well-being of participants and employees in research studies performed in its facilities.

II. PURPOSE: The purpose of this Standard Operating Procedure (SOP) is to define chemical waste and to provide information on the handling and disposal of this waste stream. These guidelines are intended to ensure the proper and safe management of chemical waste at the PRCTRC, and is based on the Medical Sciences Campus guidelines contained in the Institutional Chemical Hygiene Plan.

III. Area(s) of Responsibility: This policy applies to:

Principal Investigators:

- Ensure all lab staff/students have received proper training to deal with chemical waste;
- Communicate these guidelines to key personnel;
- Ensure labs are equipped with the proper containers, and that they are ideally located.

Users (students, laboratory or clinic personnel):

- Practice due diligence at all times when handling chemical waste (i.e. wear protective equipment);
- Ensure familiarity with the handling, treatment and disposal procedures of the waste generated.

Laboratory Chemical Waste Representative (lab manager):

- Arrange for pick-up of waste with users;
- Transport or assist in transport of waste to designated satellite storage area (“Área Satélite de Acumulación”- “ASA”);
- Log waste information in the appropriate log;
- Identify and label the waste;
- Weekly inspect the “ASA”;
- Contact to arrange for pick-up of containers and for re-supply (where applicable).

“Oficina de Seguridad en Laboratorios de Investigación” (OSLI):

- Pick up all chemical waste from designated satellite storage areas and arrange for off-site disposal;
- Maintain records regarding the amount of waste generated;
- Ensure Principal Investigators, users, and representatives are complying with guidelines;
- Provide guidance regarding the handling treatment or disposal of chemical waste.

IV. Definitions:

- **Chemical waste:** is a waste that is made from harmful chemicals. Chemical waste may fall under regulations such as the Clean Water Act and Resource Conservation and Recovery Act in the United States. In the U.S., the Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA), as well as state and local regulations also regulate chemical use and disposal. Chemical waste may or may not be classed as hazardous waste.
- **Hazardous waste:** any unwanted waste product that poses a hazard or potential hazard to human health, which may be generated by a manufacturing process (for example: radioactive gas cylinders, chemicals, pesticides, acids, and liquid) or by a health care facility, including regulated biohazardous waste.
- **Personal Protective Equipment:** refers to protective clothing, helmets, goggles, or other garments or equipment designed to protect the wearer's body from injury or infection. The hazards addressed by protective equipment include physical, electrical, heat, chemicals, biohazards, and airborne particulate matter. Protective equipment must be worn for job-related occupational safety and health. "Protective clothing" is applied to traditional categories of clothing (for example, laboratory coats), and "protective gear" applies to items such as pads, guards, shields, masks, face shields, gloves, and others. The purpose of personal protective equipment is to reduce employee exposure to hazards. PPE is needed when there are hazards present.
- **Satellite accumulation area:** is a designated area within the laboratory or point of generation of the hazardous waste which will store the waste until it is sent out for processing. This area can be a bench top, small section of the hood, a combination of the both or even a previously empty cabinet. A key staff person must be designated to be responsible for the process resulting in the generation of these wastes. The area must be inspected to make sure it is up to compliance standards and answer any questions that may arise. In order for a hazardous material to be in compliance within the satellite area it must be in a capped compatible container that is tightly sealed and properly labelled.

V. Procedures: General Guidelines:

1. Segregation

- Chemical waste must be stored in a secure environment at all times;
- Chemical waste must not be mixed with radioactive or other laboratory trash. This may be unavoidable (i.e. radioactive carcasses) and in such instances special handling may be required.
- The various types of chemical waste should be segregated from each other, identified and labeled;
- Fluid waste should be contained from solid waste.

2. Containment & Labeling

Containers for chemical waste must be appropriate for its contents. There are several different kinds of containers and bags available for the containment and disposal of chemical waste. Containers and bags are available through your faculty/service stores, and /or your hazardous waste representative. The various types of packaging and associated labeling used for different types of chemical waste are outlined below.

- All containers for chemical waste must display the words “Hazardous Waste” in a color contrasting the container;
- The container must be rigid, leak proof, puncture resistant, sealable and in good conditions;
- The container and its contents must be compatible;
- Incompatible substances must not be placed in the same container;
- The containers should be on a flat surface.

The following are some guidelines to remember when packaging waste:

- Primary and secondary containers are necessary to prevent leaks;
- Add absorbent material if the possibility of large volumes of liquid exists;
- Ensure the containers are well sealed with their lids;
- Do not overfill the containers;
- Secondary container should also be labeled with the words “Hazardous Waste”.

3. Storage

Although chemical waste should be disposed as promptly as possible it can be held temporarily. Treatable waste should not be allowed to accumulate. Waste that is to be disposed off-site should be stored in designated satellite areas that are secure and access is limited to delegated individuals. The amount of 55 gallons must not be exceeded. Once the waste is removed from our laboratory "ASA", the Institution has a maximum of 270 for the final disposition by a specialized company that will be responsible for its management. A weekly inspection of the "ASA" and a monthly inventory must be completed by the laboratory supervisor.

4. Disposal

The laboratory personnel will contact OSLI to arrange for a waste pick-up from the satellite storage area. Any further preparation for transport (i.e. labeling, monitoring, and paper work) will be conducted by OSLI.

5. Records

As chemical waste is potentially hazardous, it is important to document the nature of the waste. Labels attached to waste bags and/or containers should detail the contents. While OSLI maintains records of the type of waste, etc., the following forms are used for tracking chemical waste at the UPR-MSU:

- a. "Inventario Diario: Uso de Sustancias Químicas Peligrosas y Generación de Desperdicios"
- b. "Inventario del ASA: de la Cantidad Total de Desperdicios Peligrosos Acumulados al Final del Mes"
- c. "Inventario de Desperdicios Químicos Almacenados"

6. Reference

- "Manual de Plan de Higiene Química"-MSU