Solid Waste Management

Liquid Waste Management

E-waste Management:

Waste recycling system:

CHEMICAL WASTE MANAGEMENT

Chemical waste management is a critical aspect of laboratory operations, ensuring environmental sustainability and compliance with regulatory standards. This report outlines the methods employed in our laboratory for the effective handling and disposal of chemical waste.

Objectives:

- Ensure adherence to regulations for legal compliance.
- Implement safety protocols for personnel and environmental protection.
- Optimize waste handling methods for efficiency.
- Reduce chemical waste generation through recycling and reuse.
- Educate personnel for responsible waste management.
- Monitor and adapt practises continuously for improving ongoing enhancement.
- Assess and mitigate ecological footprint.

Methods Used:

1. Segregation method:

   Chemical waste is systematically segregated based on its properties and potential hazards using color coded containers and clean labeling.

2] Storage procedures:

Detailed storage protocols are in place to prevent cross - contamination and ensure the safe storage of chemicals including proper ventilation and temperature control.

2. Waste minimization strategies:

Efforts to minimize waste generation include the promotion of recycling, the identification of opportunities for chemical reuse and the exploration of environmentally friendly alternatives. The following are the methods used in laboratory for recycling and reuse of chemicals.

a. Distillation:

Distillation is a separation process that utilizes the differences in boiling points of components in a liquid mixture which is heated in a container called distillation flask and with the lower boiling point will vaporise first. The vapor rises through a column and enters a condenser where it is cooled. The condensed liquid is collected in a separate container called the receiving flask. Distillation is commonly used for purifying liquids, separating components from a mixture to obtain a high purity in laboratories.

b. Neutralization method:

This is a process used to treat acidic or basic waste in a laboratory to bring the pH to a neutral level. Firstly, identify the waste whether it is acidic or basic. For acid waste add neutralizing agent like NaOH to get less hazardous waste and for basic waste add neutralizing agent like H_2SO_4. After adding neutralizing agent, check the pH level in the pH meter to get the less hazardous chemical waste which is recycled and reused again in the laboratories