

SOLID WASTES

- What is Solid Waste?

Solid waste is the unwanted or useless solid materials generated from human activities in residential, industrial or commercial areas.

- Types of Solid Waste

- a. Municipal Solid Waste (MSW)

- b. Hazardous Wastes

- c. Industrial Wastes

- d. Agricultural Wastes

- e. Bio-medical Wastes

a. Municipal Solid Waste (MSW)

- MSW does not include wastes from industrial processes, construction and demolition debris, sewage sludge, mining waste or agricultural wastes. MSW is also called as **trash** or **garbage**.

- MSW contains a wide variety of materials.

Wet garbage → food waste-like vegetable and meat material, leftover food, eggshells etc.

Dry garbage → paper, plastic, tetra-pack, plastic cans, newspaper, glass bottles, cardboard boxes, aluminium foil, meta items, wood pieces, etc.

Domestic wastes and their degeneration time

Type of waste	Degeneration time (approximate)
Organic waste (Fruit, vegetable etc.)	1-2 weeks
Paper	2-4 weeks
Cotton cloth	2-5 months
Wood	10-15 years
Metal items	100-500 years
Plastic bag	1 million years
Glass bottle	undetermined

b. Hazardous Wastes

○ Wastes are classified as hazardous if they exhibit any of four primary characteristics based on physical or chemical properties of toxicity, reactivity, ignitability and corrosivity.

1. Toxic wastes
2. Reactive wastes
3. Ignitable waste
4. Corrosive wastes
5. Infectious wastes

c. Industrial Wastes

- These contain more of toxic and require special treatment.
- Control of Industrial Wastes:
 - i. Waste minimization technologies have to be developed.
 - ii. Source reduction recycling and reuse of materials need to be practiced on a large scale.
 - iii. Hazardous waste should not mix up with general waste.
 - iv. Land filling, incineration and composting technologies to be followed.
 - v. Biogas is obtained from solid waste treatment of industrial waste is done for the recovery of useful products.

d. Agricultural Wastes

- i. Sources of Agricultural Wastes
- ii. Effects of Agricultural Wastes

e. Biomedical Wastes

Biomedical waste means any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or in research activities pertaining there to or in the production or testing of biological.

Treatment Methods for Solid Waste

1. Thermal treatment
2. Pyrolysis and gasification
3. Biological treatment methods
4. Landfills and open dumping

Waste Minimization

Waste production can be minimized by adopting the 3 R's principle:

- a.** Reduce
- b.** Reuse
- c.** Recycle

They can reduce the wastes generated by approximately 50%.

