

UNIT I

GENERATION OF WASTES AND CONSEQUENCES OF SOIL POLLUTION

1.2 Sources, production and classification of waste

Sources, production of wastes

Classification of Waste



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Sources, production of wastes

When speaking about waste, they are classified based on the sources they have generated. Wastes are produced from different sources such as household garbage, hospitals, agricultural waste, industrial wastes, mining operations, public places, and so on. The wastes that we produce are hazardous in nature and the cause of many diseases.

Medical or Clinical Sources

Medical wastes include surgical items, blood, body parts, pharmaceuticals, wound dressing materials, syringes, and needles. This type of waste is generated in hospitals, clinics, veterinary hospitals, and labs. This type of waste can often lead to contamination and infection.

Agricultural Sources

This type of waste is generated by agricultural activities such as farming, livestock breeding, and market gardens. The most common types of agricultural waste are pesticide containers, out of date medicines and wormers, surplus milk, corn husks, etc.

Industrial Sources

Industry sources produce different kinds of waste products. The sources of industrial wastes are manufacturing and processing industries like cement factories, chemical plants, power plants, petroleum industries, textile industries, and food processing industries. These industries produce a huge amount of wastes, which is harmful to nature.

Construction Sources

Wastes like package boxes, concrete debris, plastics, and wood from construction and the building materials comprise waste, which is yielded as a result of the development of roads and buildings. Also, the demolition of structures, constructions, and old buildings generate wastes, which is called demolition waste.

Commercial Sources

The commercial source is a result of the modernization of industries and automobiles. These can include food items, textiles, disposable medical items, and several others.

Mining Sources

The mining wastes include the mine tailings, overburden material, harmful gases released by blasting, etc. Mining waste poses a significant hazard to the environment and surroundings.

Radioactive Sources

Radioactive wastes generate different radiation types like gamma rays, alpha particles, beta particles, and neutron radiation. Radioactive waste is generated from nuclear reactors or atomic explosions and is extremely dangerous for humans. Different types of radioactive waste are high-level waste, low-level waste, and transuranic waste.

Electronic Sources of Waste

Electronic sources of waste comprise discarded old electronic items like Television, Microwave, Vacuum cleaner, Music players, etc. It is also known as e-scrap, or waste electrical and equipment. These wastes contain cadmium, lead, and mercury, which are harmful to both humans and the environment.

Classification of Waste

After urbanization, we generate a large number of wastes in our day to day life. Waste is unwanted materials and objects that are discarded after use, or in other words, there's no further use of the merchandise such as food packages, broken plastic utensils, paper bags, etc. By recognizing the types of wastes, the various sources of wastes can easily be identified. All these things contribute to the generation of waste in our society.

The three categories of waste are: -

- **Liquid Wastes** – Wastes that are generated in the liquid form from industrial manufacturing, washing, flushing, or other processes of industries are called liquid wastes.
- **Gaseous Wastes** – Sources like automobiles, factories, or the burning of fossil fuels like petroleum releases gases, these wastes are called gaseous wastes. They tend to get mixed within other gases and lead to smog and acid precipitation.

- **Solid Wastes** – The major part of the waste which is generated by human society is in the form of solid wastes. The types of solid waste can be classified into betting on their source or types, such as agricultural wastes, urban wastes, radioactive wastes, industrial wastes, and biomedical wastes.



Solid wastes are further classified as,

