MAHESH PUBLIC SCHOOL, JODHPUR

Class: 08
Revision Notes
Chapter – 3
Synthetic Fibres and Plastics

- All synthetic fibres are man-made fibres that are prepared by a number of processes using raw material of petroleum origin, called petrochemicals. Synthetic fibres consists of many small units or monomers combine to form a larger unit called a polymer.
- While natural fibres are obtained from plants and animals, synthetic fibres are obtained by chemical processing of petrochemicals. Like natural fibres, these fibres can also be woven into fabrics.
- Synthetic fibres find uses ranging from many household articles like ropes, buckets, furniture, containers, etc. to highly specialized uses in aircrafts, ships, spacecrafts, healthcare, etc.
- Depending upon the types of chemicals used for manufacturing synthetic fibres, they are named as Rayon, Nylon, Polyester and Acrylic.
- The different types of fibres differ from one another in their strength, water absorbing capacity, nature of burning, cost, durability, etc.

Types of Synthetic Fibres:
(i) **Rayon:** It is made from cellulose obtained from wood pulp. It is used to make containers, car upholstery, etc.

(ii) **Nylon:** A polyamide made from petroleum. It is lightweight, strong and durable. The fabric allows easy evaporation and dries quickly. It is used in parachutes, flak vest, combat uniforms, tires, etc.

(iii) **Polyester:** A versatile and important man-made fabric. It has an outstanding characteristic of resisting wrinkle and springing back into its crisp, smooth shape. It is strong and soft. It is used in dresses, suits, rainwear, etc.

(iv) **Acrylic:** A fibre similar to that of wool and is used to make sweater, blankets, shawls, etc. It is lightweight, soft and warm. Also it is cheaper than natural wool. It is resistant to chemicals, moths and sunlight. Therefore, they are widely in use nowadays

Plastics: Like synthetic fibres, plastic is also a polymer. Some plastics have a linear arrangement of the units and some have a cross-linked arrangement of the units. Examples: Polythene. Today, life without plastics cannot be imagined. Be it home, or outside, plastic is everywhere.

Characteristics of Plastics:

(i) **Non-reactive:** Not affected by air, water, soil, etc.

(ii) **Light, strong and durable:** Light, strong and durable and can be moulded into different shapes and sizes.

(iii) **Poor Conductors:** Do not allow heat and electricity to flow through them.

· The waste created by plastics is not environment friendly. On burning plastics release poisonous gases. On dumping in the ground they may take years to degenerate. This is because of their non-biodegradable nature. We need to use synthetic fibres and plastics in such a manner that we can enjoy their good qualities and at the same time minimise the environmental hazards for the living communities.

· **Effect of Plastics on Environment**: Natural materials like wood and paper are biodegradable (bio = living; degradable = able to broken down). In contrast, most plastics do not decay, therefore, they are non-biodegradable. The lightweight nature of plastics can also be a problem. Burning of plastics also release poisonous fumes into the atmosphere. These way plastics pollute the environment.

Worksheet-03
Class–VIII Science (Synthetic fibres and plastics)

1. Polyester is a long chain polymer of a chemical substance called: -
    a. aldehyde
    b. ester
    c. alcohol
    d. ethene
2. Which of the following represent the smallest units of a polymer: -

    a. tetramer
    b. dimer
    c. monomer
    d. octamer
3. A regenerated synthetic fibre is -

    a. rayon
    b. nylon
    c. terylene
    d. polyethene
4. The first fully synthetic fibre is -

    a. rayon
    b. nylon
    c. Acrylic
    d. Polyester
5. Match the column: -

Fibre&	**Articles made**
a. Jute	i) bristles for brushes
b. Polyester	ii) surgical dressings
c. Rayon	iii) bags
d. Acrylic	iv) sails for boat
e. Nylon	v) sweaters

6. Fill in the blanks :-

    a. Rayon is prepared from _____ .
    b. Polythene is prepared from_____ .
    c. Nylon is prepared from simple chemicals obtained from _____ .
    d. Polyester is made from _____ products.
    e. _____ is called a regenerated fibre.
7.

    a. Define polymerisation?
    b. For making synthetic polymers where from we get small molecules?
8. What are plant and animal fibres?
9. Pick the odd word out of the following:-Terene, Terylene, Acrylic, Decron, Terycot.

10. Which synthetic fibre is the following cloth made up of:-

Class: 08
Revision Notes
Chapter – 4
Materials: Metals and Non-Metals

- Metals are strong and durable. Thus metals are used so widely for making almost everything
  Example: Metals are used in making machinery, automobiles, aeroplanes, buildings, trains, satellites, gadgets, cooking utensils, water boilers...etc.

Physical Properties of Metals

- The metal base in an electric iron is for conducting heat, not electricity.
- Metals are very good conductors of heat. Cooking utensils, irons, heaters, etc. are all made of metals which are good conductors of heat.
- Metals can be easily shaped into wires. This property of metals is called ductility.
- Metals can be easily shaped into thin flat sheets. This characteristic of metals is called malleability.
- Metals make a sound when struck with hard objects. Metals can be polished to a shiny appearance.

Chemical Properties of Metals

- Metals react with oxygen to produce metal oxides which are basic in nature. Non-metals react with oxygen to produce non- metallic oxides which are acidic in nature.
- Some metals react with water to produce metal hydroxides and hydrogen gas. Generally, non- metals do not react with water.
- Metals react with acids and produce metal salts and hydrogen gas. Generally, non-metals do not react with acids.
- Some metals react with bases to produce hydrogen gas.
- More reactive metals displace less reactive metals from their compounds in aqueous solutions

Physical Properties of Non-metals

- Non-metals are non-lustrous, non-malleable and not ductile, except for carbon fibres, which are ductile.
- Non-metals are not sonorous. They do not produce any sound when hit.
- Non-metals do not conduct heat and electricity except for graphite

.**Chemical Properties of Non-metals**·

- Non-metals react with oxygen to form their oxides. Non-metal oxides are acidic or neutral in nature.
- In general non-metals do not react with water though they may be very reactive in air.
- Non-metals do not react with acids

Metals and non-metals are used widely in everyday life.

Worksheet-04
Class–VIII Science (Metals and Non Metals)

1. Which of the following is/are metalloid?
    a. Silicon
    b. Iodine
    c. Both (a) & (b)
    d. Gallium
2. Which of the following is/are noble gas?

    a. Hydrogen
    b. Argon
    c. Neon
    d. Both (b) &(c)
3. Chile saltpetre contains: -

    a. Hydrogen
    b. Carbon
    c. Nitrogen
    d. Chlorine
4. A metal with low melting and boiling point is :-

    a. Al
    b. K
    c. B
    d. Mg
5. Match the column: -

Metal	**Uses**
a. Copper	i)construction purposes
b. Iron	ii) automobile batteries
c. Aluminium	iii) cables & wires
d. Lead	iv) photography
e. Silver	v) metallic paints

6. Fill in the blanks: -

    a. A pencil lead is made up of a non-metal called _____.
    b. Non metals do not make a _____ sound when struck hard.
    c. Non metals are _____ conductors of electricity.
    d. Non metals are not good conductors of heat hence they are also called as _____.
    e. Bromine is the only non-metal which is _____ at room temperature.
7. Cooking utensils are made of metals but their handles are made of wood or plastic. Why?

8. Why is it advised not to store pickles and curd in metallic utensils?
9. Name the non-metal shown in the following picture.

10. Write the correct words: -

    a. Metals: shiny:: non metals: ?
    b. Gold: noble metal: helium:?