Is Matter Around Us Pure
Metals

❖ Introduction of Metals

A metal is an element that is melleable and ductile, and conducts electricity. Examples of metals are: Iron, Copper, Aluminium, Zinc, Silver, Gold. All the metals are solids except one metal mercury, which is a liquid.

❖ Properties of Metals

1. Metals are Melleable. This means that metals can be beaten into thin sheets with a hammer (without breaking). For example, silver metal can be hammered into thin silver foils because of its high malleability.

2. Metals are ductile. This means that metals can be drawn (or stretched) into thin wires. All the metals are not equally ductile. Some are more ductile than the other. For example, just 100milligrams of a highly ductile metal like silver can be drawn into a thin wire about 200 meters long.

3. Metals are good conductors of heat and electricity. This means that metals allow heat and electricity to pass through them easily. Silver metal is the best conductor of heat. It has the highest thermal conductivity. Silver metal is the best conductor of heat. The cooking utensils and water boilers, etc., are usually made of copper or aluminium metals because they are very good conductors of heat. Silver metal is the best conductor of electricity. The electric wires are made of copper and aluminium metals because they are very good conductors of electricity.

4. Metals are lustrous (or shiny), and can be polished. The property of a metal of having a shining surface is called metallic lustre (chamak). The shiny appearance of metals makes them useful in making jewellery and decoration pieces For example, gold and silver are used for making jewellery because they are bright and shiny. The shiny surface of metals makes them good reflectors of light. Silver metal is an excellent reflector of light.

5. Metals are generally hard Most of the metals are hard. But all the metals are not equally hard. The hardness varies from metal to metal they cannot cut with a knife. (except sodium and potassium which are soft metals) (except sodium and potassium which are soft metals).

6. Metals are usually strong. This means that metals can hold large weights without breaking. They have high tensile strength. For example, iron metal (in the form of steel) having a high tensile strength. Due to this iron metal is used in the construction.

7. Metals are solids at the room temperature (except mercury which is a liquid metal). All the metals like iron, copper, aluminum, silver and gold, etc., are

solids at the room temperature. Only one metal, mercury, is in liquid state at the room temperature.

8. Metals generally have high melting points and boiling points. This means that most of the metals melt and vaporise at high temperatures. Some exceptions, Sodium and potassium metals have low melting points.

9. Metals have high densities. This means that metals are heavy substances. For example, the density of iron metal is 7.8 g/cm3 which is quite high. Some exceptions. Sodium and potassium metals have low densities.

10.Metals are sonorous. This means that metals make a ringing sound when we strike them. For example, Plate type musical instruments like cymbals (manjira), and wires (or strings) for stringed musical instruments such as violin, guitar, sitar and tanpoora, etc