

Prevention of corrosion

Rusting of iron can be prevented by:

- i) painting
- ii) oiling
- iii) greasing
- iv) Galvanising



Galvanisation is a method of protecting steel and iron from rusting by coating them with a thin layer of zinc.

If the zinc coating is broken, the galvanized object remains protected against rusting because zinc is more reactive than iron and hence can be easily oxidised.

Thus when zinc layer breaks down, the zinc continues to react and gets oxidised. Hence iron object is protected.

iv) chrome plating:

It is electroplating a thin layer of chromium onto a metal object.

v) Anodising:

Anodising is a process of forming a thick oxide layer of aluminium on aluminium article to prevent it from corrosion.

During anodising, a clean aluminium article is made the anode and is electrolysed with dilute sulphuric acid. The oxygen gas evolved at the anode reacts with

aluminium to make a thicker protective oxide layer. This oxide layer can be dyed easily to give aluminium articles an attractive finish.

VII) Making alloys

Alloy is a homogeneous mixture of two or more metals or a metal and a non metal

It is prepared by first melting the primary metal and dissolving the other elements in it in definite proportions.

It is then cooled to room temperature. Alloying is a very good method of improving the properties of a metal.

Example:

i) Pure iron is soft and stretches easily when hot. But steel (Iron + 0.05% carbon) is strong and stainless steel (Iron + nickel + chromium) is hard and does not rust.

ii) Pure gold, known as 24 carat gold is very soft. It is therefore not suitable for making jewellery. It is alloyed with either silver or copper to make it hard.

Eg: 22 carat gold means 22 parts of pure gold alloyed with 2 parts of copper or silver.

iii) If one of the metals is mercury, then the alloy is known as amalgam.

iv) The electrical conductivity and melting point of an alloy is less than that of pure metals.

Eg: a) Brass (Cu + Zn)

b) Bronze (Cu + Sn)

are not good conductors of electricity whereas copper is used for making electrical circuits.

c) Solder (Pb+Sn) has low melting point and is used for welding electrical wires together.