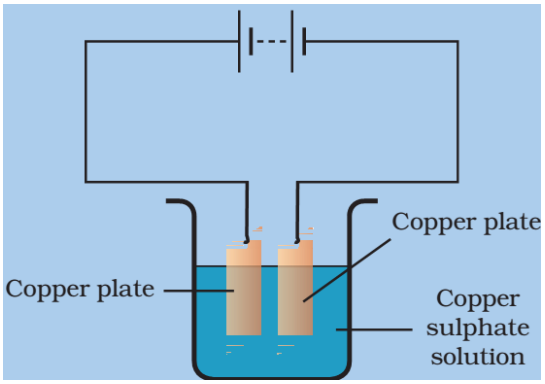
Electroplating

- When electric current is passed through the copper sulphate solution, copper sulphate dissociates into copper & sulphate.



- The free copper gets drawn to the electrode connected to the negative terminal of the battery & gets deposited on it. But what about the loss of copper from the solution?
- From the other electrode, a copper plate, an equal amount of copper gets dissolved in the solution.
- Thus, the loss of copper from the solution is restored & the process keeps going.
- This means that copper gets transferred from one electrode to the other.
- The process of **depositing a layer of any desired metal on another material by means of electricity is called electroplating**. It is one of the most common applications of chemical effects of electric current.

Examples of electroplating

- Chromium plating is done on many objects such as bath taps, wheel rims & many others.
- **Chromium has a shiny appearance. It does not corrode. It resists scratches**.
- However, chromium is expensive, & it may not be economical to make the whole object out of chromium.
- So, the object is made from a cheaper metal & only a coating of chromium over it is deposited.
- Jewellery makers electroplate silver & gold on less expensive metals.
- **Tin cans, used for storing food**, are made by electroplating tin onto iron. **Tin is less reactive than iron**.
- Thus, food does not come into contact with iron & is protected from getting spoilt.
- Iron is used in bridges & automobiles to provide strength. However, iron tends to corrode & rust.
- So, a **coating of zinc** is deposited on **iron** to **protect it from corrosion & formation of rust**.
- In the electroplating factories the disposal of the used conducting solution is a major concern.
- It is a polluting waste & there are specific disposal guidelines to protect the environment.