Topics: Acids, Bases and Salts
Subtopics:More about Salts

Salts

Salts are obtained by treating an acid with a base. Salts consist of both positive ions or 'cations', and negative ions or 'anions'.

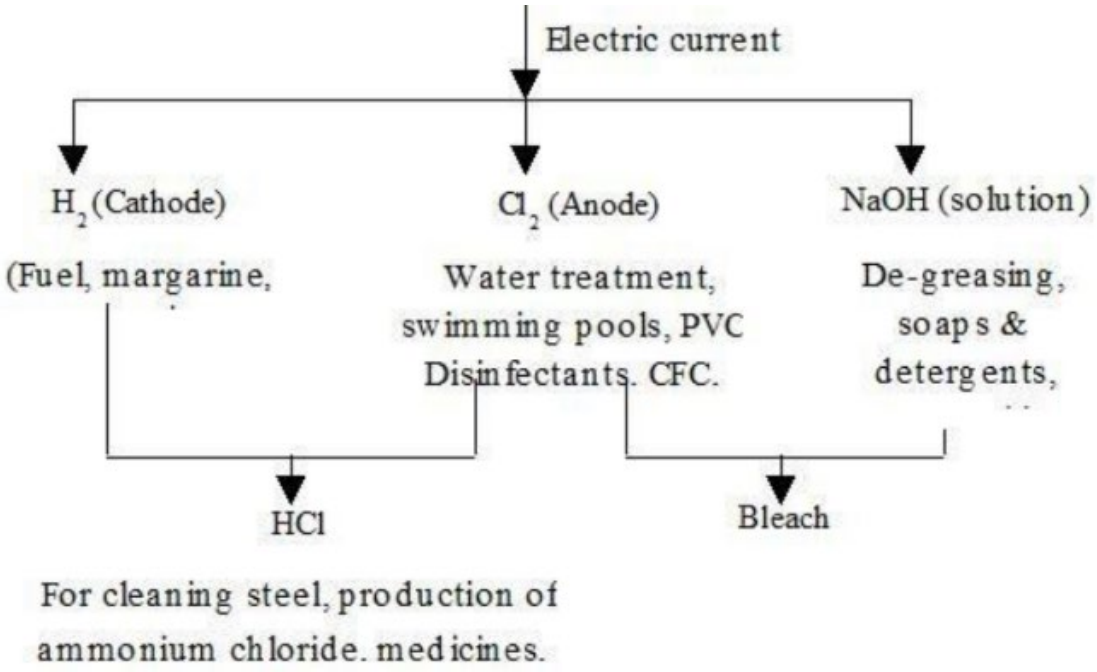
Na^+OH^- (aq) + H^+Cl^- (aq) → NaCl(aq) + H_2O(l)

Sodium hydroxide (Base) + Hydrochloric acid (Acid) → Sodium chloride (Salt) + Water

Sodium Chloride

Sodium chloride is the commonly available salt and so is called common salt.Electrolysis of brine gives the following products:

NaCl



- **Bleaching powder →** $CaOCl_2$
- **Preparation–**

$$Ca(OH)_2 + Cl_2 \rightarrow CaOCl_2 + H_2O$$

- **Use –**

Bleaching of → cotton in textile industry
Bleaching of → wood pulp
Bleaching of → Clothes in laundry

Baking soda – ($NaHCO_3$) Sodium hydrogen carbonate

- **Preparation –**

$$NaCl + H_2O + CO_2 + NH_3 \rightarrow NH_4Cl + NaHCO_3 \text{ (Mild non-corrosive base)}$$

- **Use –**

Making baking powder (Baking soda + Mild acid, like tartaric acid)
Ingredient for antacids
Soda–acid fire extinguisher

Washing soda – $Na_2CO_3.10H_2O$

- **Preparation–**

$$Na_2CO_3 + 10H_2O \rightarrow Na_2CO_3.10H_2O$$

- **Use** –In glass, soap, paper industries

Making sodium compounds such as borax
As domestic cleaning agent

- **Removing permanent hardness of water**

- **Water of crystallisation :** It refers to a fixed number of water molecules present in one formula unit of salt.
- **Example -** In gypsum, the water of crystallisation is 2.

$$CaSO_4.\frac{1}{2}H_2O + 1\frac{1}{2}H_2O \rightarrow CaSO_4.2H_2O \text{ (solid)}$$

(Gypsum)