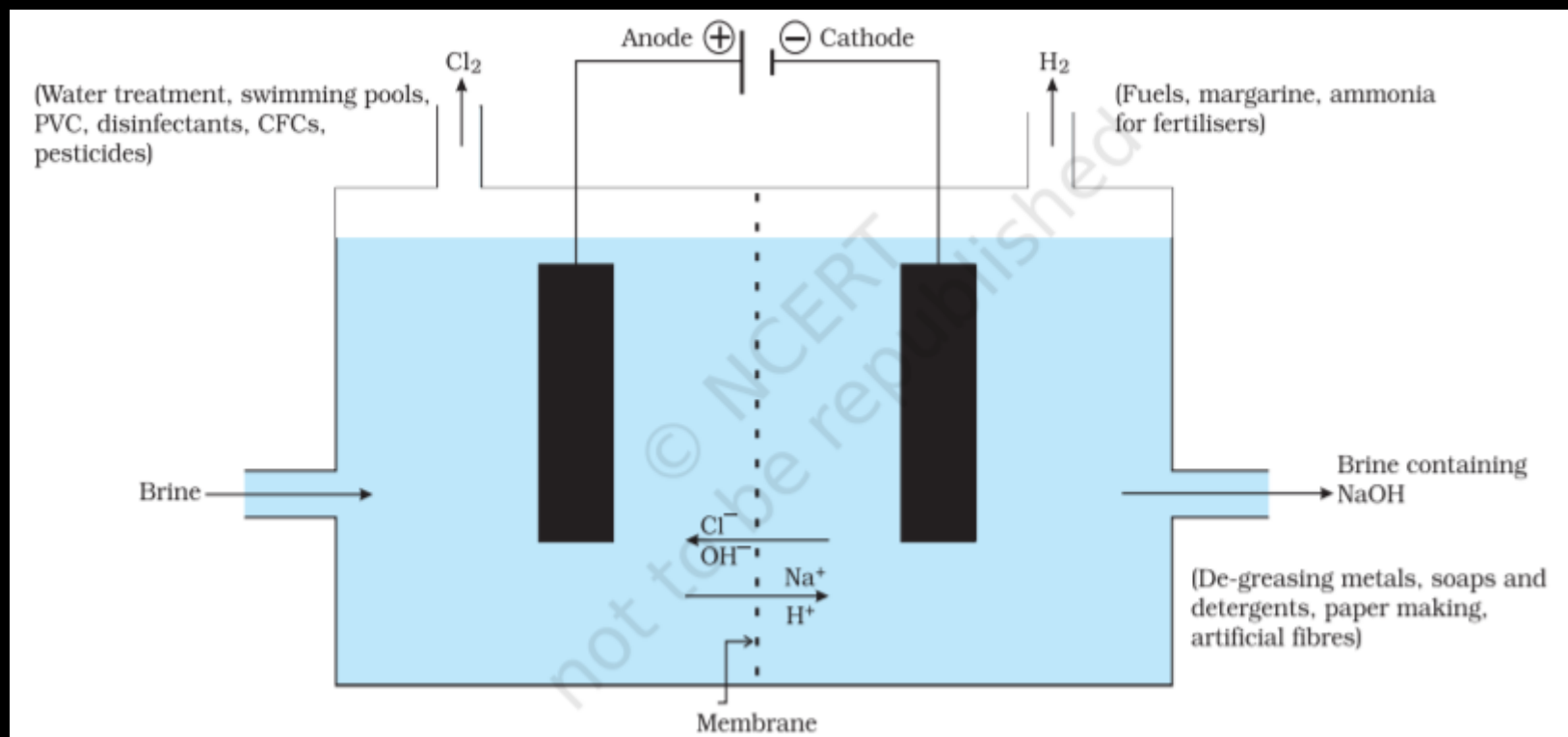


Chlor-Alkali process



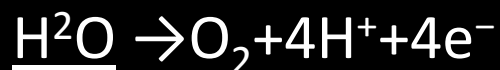
What is chlor-alkali process

The **electrolysis of brine** is an industrial process for the electrolysis of sodium chloride solutions. It is the technology used to produce chlorine and sodium hydroxide which are commodity chemicals required by industry. Usually the process is conducted on a brine (an aqueous solution of NaCl), in which case NaOH, hydrogen, and chlorine result

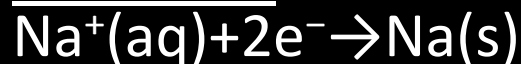
Procedure

In the chlor-alkali process, sodium chloride is converted into sodium hydroxide and chlorine by impressing an electric current through the solution. This electro-chemical process is referred to as electrolysis. Electrolysis occurs in reactors that are known as electrolytic cells. The electrolysis cell generally comprises of a containment device, and an anode and a cathode through which an electrical charge is passed to cause the electrolysis to occur.

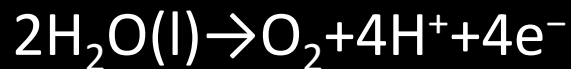
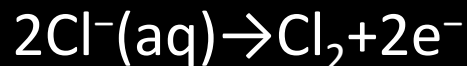
Equation



Reduction

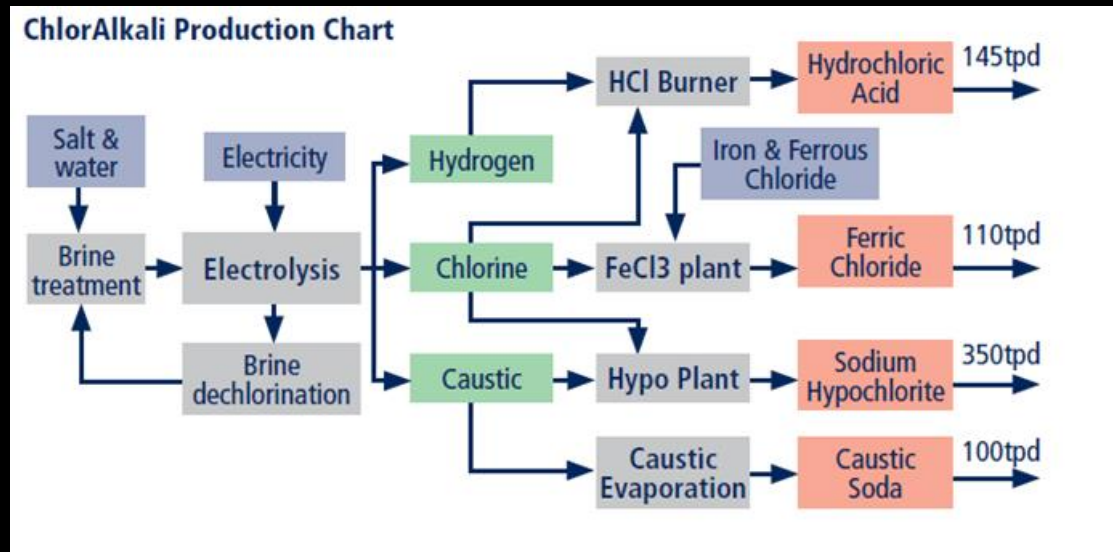


Oxidation



Products

Chlorine gas is given off at the anode, and hydrogen gas at the cathode. Sodium hydroxide solution is formed near the cathode. The three products produced in this process are all useful.

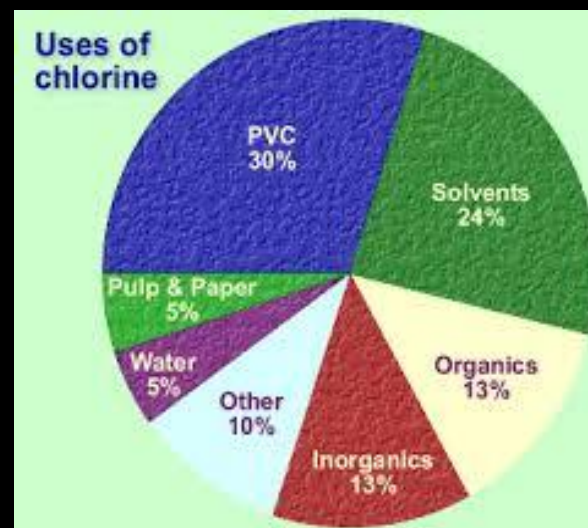


Uses of Chlorine gas

Chlorine has a wide variety of industrial uses. Chlorine was first used to produce bleaching agents for the textile and paper industries and for general cleaning and disinfecting

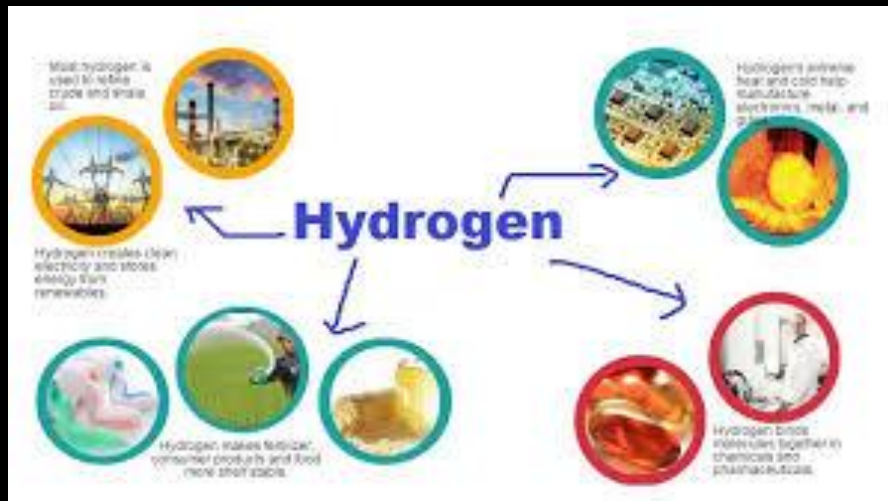
Uses of Chlorine

- Bleaches
- Mustard gas
- Water purification
- Production of chlorates
- Paper production
- Antiseptic
- Insecticides
- Paint
- Plastics
- Medicines
- Hypochlorous acid
- Chlorine dioxide



Uses of Hydrogen gas

Hydrogen is used to produce hydrochloric acid or ammonia and hydrogenation of organic compounds. It is also used to manufacture fuels and margarine and fertilisers.



Uses of Sodium Hydroxide

Uses of NaOH obtained from chlor-alkali process: It is used for de-greasing metals, soaps and detergents. It is also used for making paper and artificial fibres.



Thank you

Bibliography

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