

• Acids, Bases and Salts



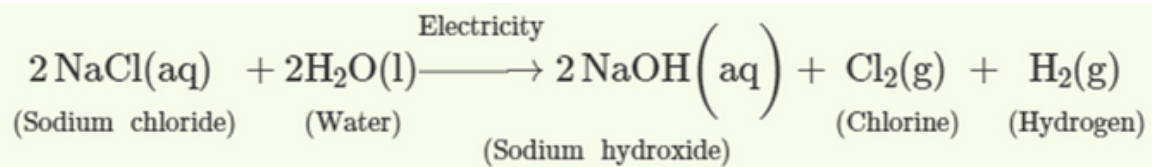
1. List the important products of the chlor-alkali process. Write one important use of each. (CBSE 2020, 2023)
2. (a) Identify the acid and the base whose combination forms the common salt that you use in your food. Write its chemical formula and chemical name of the salt.
(b) What is rock salt?
(c) Mention its color and the reason due to which it has this colour. (CBSE 2019, 2013)
3. Write the chemical equations when zinc granules react with:
(a) Sulphuric acid (b) Hydrochloric acid (CBSE 2014, 2020)
4. How is sodium hydroxide produced? Write the balanced chemical equation also. Why is this process called the chlor-alkali process? In this process name the products given off at:
(a) anode
(b) cathode. (CBSE 2022, 2015)
5. Give the reasons for the following:
(i) Only one half of water molecule is shown in the formula of plaster of Paris. (CBSE 2020, CBSE SP - 2017)

Solutions

1. Sodium hydroxide - It is used in the manufacturing of paper.
Chlorine - It is used to make plastics (PVC), chlorofluorocarbon (CFC), chloroform, carbon tetrachloride etc.
Hydrogen - It is used in the hydrogenation of oils to obtain vegetable ghee.
2. (a) HCl is an acid and NaOH is a base whose combination forms the common salt. Its formula is NaCl Sodium chloride. It is obtained from seawater.
(b) Deposits of solid salt which are large crystals and brown due to impurities is called rock salt.
(c) This brown color is due to all the impurities present in the salt along with sodium chloride. When the impurities are removed and pure sodium chloride is obtained, it turns into white crystals.
3.
 - When zinc granules are added to the solution of sulphuric acid then
 - zinc sulfate and hydrogen gas are formed as the product.
 - The chemical reaction is as follows:
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 - When zinc granules are added to the solution of hydrochloric acid then zinc chloride and hydrogen gas are formed as the product.
 - The chemical reaction is as follows:
4. When electricity is made to pass through an aqueous solution of NaCl, it decomposes to form NaOH. This process is called chlor-alkali process because of two products - chlor for Chlorine and alkali for Sodium hydroxide.

(a) Anode - Cl_2 Gas

(b) Cathode - H_2 Gas



5. The Formula actually means that two molecules (or two formula units) of CaSO_4 share one molecule of water so that the effective water of crystallization for one CaSO_4 unit comes to half a molecule of water.