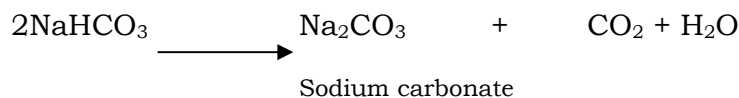


The participated sodium bicarbonate is filtered and dried. It is ignited to give sodium carbonate :

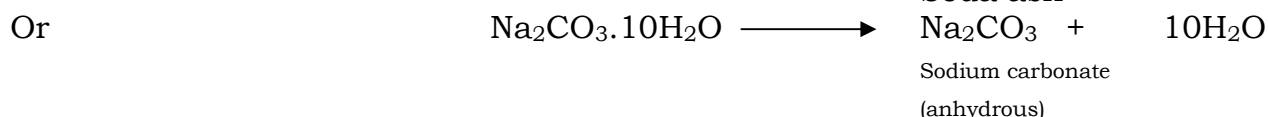
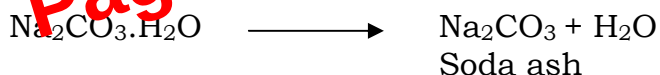


Properties :

- (i) sodium carbonate is a transparent crystalline solid. It exists as a decahydrate ($\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$) containing 10 molecules of water of crystallisation.
- It is readily soluble in water. It dissolves in water to form an alkaline solution, which turns red litmus solution blue. This shows that an aqueous solution of sodium carbonate is alkaline.
- Action of air :** when crystals of washing soda are left open in air they lose nine molecules of water of crystallization and form a white powder of sodium carbonate monohydrate. This process of loss of water of crystallisation from a hydrated salt to the atmosphere, on keeping it exposed to air is called efflorescence. Thus, washing soda is efflorescent.



4. Action of heat. On heating, above 373K, washing soda does not decompose but loses all its water of crystallisation to form anhydrous salt. Thus, the monohydrate becomes completely anhydrous and changes to white powder called soda ash.



Uses of Washing Soda (or sodium carbonate).

Some important uses of Washing Soda are.

1. Washing Soda is used for washing clothes (laundry purposes).
2. Washing soda is used for softening hard water.
3. Sodium carbonate (soda ash) is used for the manufacture of detergents.
4. Sodium carbonate is used for the manufacture of many important compounds such as borax.
5. Sodium carbonate is also used in paper and paint industries.

(3) **Baking soda, NaHCO_3 (Sodium Bicarbonate)**

The chemical name of baking soda is sodium hydrogen carbonate or sodium bicarbonate. Baking soda is represented by the formula NaHCO_3 .

Preparation: In laboratory, sodium bicarbonate can be prepared by saturating a cold solution of sodium carbonate with carbon dioxide.

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Page 12 of 12