

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

 $2NaHCO_3 \qquad Na_2CO_3 + CO_2 + H_2O$

Sodium carbonate

Properties :

- 1. (i) sodium carbonate is a transparent crystaline solid. It exists as a decahydrate (Na₂CO_{3.}10H₂O) containing 10 molecules of water of crystallisation.
- 2. 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.
- 3. **Action of air :** when crystals of washing soda are left open in air they lose nine mlecules 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 effloresecence. Thus, washing soda is efflorescent.
- $Na_2CO_3 10H_2O$ $D_3 H_2O + 9 H_2O$ Sodium carbonate Sodium carbonate Decahydrate (monohydrate) 4. Action of heart. On heating, above 373K, washing soda does not decompose but to each its water of cystalisation to form anhydrous salt. ate becomes condletely anhydrous and changes to white Thus, the monopole powd ced soda ash. $Na_2CO_3.H_2O$ $Na_2CO_3 + H_2O$ Soda ash Or Na₂CO₃.10H₂O — $Na_2CO_3 +$ $10H_2O$ Sodium carbonate (anhydrous)

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, NaHCO₃ (Sodium Bicarbonate)

The chemical name of baking soda is sodium hydrogen carbonate or sodium bicarbonate. Baking soda is represented by the formula NaHCO₃.

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

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