

## Identification of sodium carbonate

**Aim:** To perform the identification test for sodium bicarbonate

### Requirements:

**Chemicals & Reagents:** Sodium bicarbonate powder, pyroantimonate, Zinc uranyl acetate, dilute HCl, BaCl<sub>2</sub> solution, freshly prepared silver nitrate solution.

**Glassware:** Test tube, beaker, funnel watch glass, spatula

**Chemical formula:** NaHCO<sub>3</sub>

**Theory:** Sodium bicarbonate is a white solid crystalline compound composed of sodium ions and bicarbonate ions. It has a slightly salty, alkaline taste resembling that of washing soda (sodium carbonate). Sodium bicarbonate is also known as baking soda.

**Use:** Sodium bicarbonate is used to relieve heartburn, sour stomach, or acid indigestion by neutralizing excess stomach acid.

**Category:** Antacid

### Reactions:



The identification reactions for sodium bicarbonate are summarized as below:

A) Identification test for Na<sup>+</sup>

Sr. No	Test	Observation	Inference
1.	Pyroantimonate is added to prepared original solution	White precipitates	Na <sup>+</sup> is present
2.	Zinc Uranyl acetate is added to prepared original solution	Yellow precipitates	Na <sup>+</sup> ion is confirmed

**Result:** The given sample contains Na<sup>+</sup> cations

Sr. No	Test	Observation	Inference
1.	O.S. + dilute HCl	Effervescence of CO <sub>2</sub> gas that turns lime water milky	CO <sub>3</sub> <sup>2-</sup> is present
2.	O.S. + BaCl <sub>2</sub> solution	White precipitates soluble in dilute acid along with effervescence and also soluble in excess of BaCl <sub>2</sub>	CO <sub>3</sub> <sup>2-</sup> is present
3.	O.S. + AgNO <sub>3</sub>	White precipitates that turn yellow on adding an excess of the reagent and the precipitates dissolved rapidly in dilute HNO <sub>3</sub> or ammonia	CO <sub>3</sub> <sup>2-</sup> ion is confirmed

**Result:** The given sample contains CO<sub>3</sub><sup>2-</sup> anions.