Sodium carbonate monohydrate
Empirical formula $Na_2CO_3 \cdot H_2O$
Molecular weight 124.0
CAS number [5968-11-6]
Description Colorless or white crystals or granules.
Solubility Soluble in 3 parts water, 1.8 parts boiling water, or 7 parts glycerin; practically insoluble in ethanol (95%). Dries out in warm dry air or above 50°C, and converts to anhydrous form above 100°C.
Comments Listed in PhEur 9.2 and USP 40–NF 35 S1. Commonly used in antacid preparations and as a reagent.[10]

18 Comments

Sodium carbonate is more resistant to effervescent reactions than sodium bicarbonate, and therefore sodium bicarbonate is most commonly used in effervescent formulations.[3] Sodium carbonate can be added to these formulations as a stabilizing agent (up to 10% w/w) as it absorbs moisture, preventing early effervescent reactions.[3] This effect is exploited in *Effer-Soda*, in which a sodium bicarbonate core is protected by a surface layer of sodium carbonate, equivalent to 8–12% w/w.[11]

The technical grade of sodium carbonate anhydrous (approximately 99% purity) is known as soda ash.[8] *Sodium Carbonate IPH* (Solvay Pharmaceuticals) is not authorized for parenteral formulations.

Sodium carbonate has been investigated as part of a controlled-release, taste-masking formulation,[12] and in a novel effervescent dry powder inhaler formulation.[13]

Therapeutically, sodium carbonate is used as an oral antacid.[10]

A specification for sodium carbonate is contained in the *Food Chemicals Codex* (FCC).[14]

The EINECS number for sodium carbonate is 207-838-8. The PubChem Compound ID (CID) for sodium carbonate is 10340.

19 Specific References

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20 General References

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21 Author

KP Hapgood.

22 Date of Revision

4 May 2017.

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Sodium Chloride

1 Nonproprietary Names

BP: Sodium Chloride
JP: Sodium Chloride
PhEur: Sodium Chloride
USP–NF: Sodium Chloride

2 Synonyms

Alberger; chlorure de sodium; common salt; hopper salt; natrii chloridum; natural halite; rock salt; saline; salt; sea salt; table salt.

3 Chemical Name and CAS Registry Number

Sodium chloride [7647-14-5]

4 Empirical Formula and Molecular Weight

NaCl 58.44

5 Structural Formula

See Section 4.

6 Functional Category

Tablet and capsule diluent; tonicity agent.

7 Applications in Pharmaceutical Formulation or Technology

Sodium chloride is widely used in a variety of parenteral and nonparenteral pharmaceutical formulations, where the primary use is to produce isotonic solutions.

Sodium chloride has been used as a lubricant and diluent in capsules and direct-compression tablet formulations in the past,[1–5] although this practice is no longer common. Sodium chloride has also been used as a channeling agent[6,7] and as an osmotic agent[8,9] in the cores of controlled-release tablets. It has been used as a