

71376, 71378, 71386 Sodium chloride (Halite, Common Salt or Table Salt, Rock Salt)

CAS number: 7647-14-5

Product Description:

Molecular formula:	NaCl
Appearance:	white powder (crystalline)
Molecular weight:	58.44 g/mol
Density of large crystals:	2.17 g/ml ¹
Melting Point:	804 °C ¹
Density:	1.186 g/ml (5 M in water) ²
Solubility:	1 M in H ₂ O, 20 °C, complete, clear, colorless ²
pH:	5.0-8.0 (1 M in H ₂ O, 25 °C) ²

Store at room temperature

Sodium chloride is geologically stable. If kept dry, it will remain a free-flowing solid for years. Traces of magnesium or calcium chloride in commercial sodium chloride adsorb moisture, making it cake. The trace moisture does not harm the material chemically in any way.

71378 BioChemika Ultra
71376 BioChemika Ultra for molecular biology
71386 BioChemika Ultra for molecular biology, 5 M Solution

The products designated as "BioChemika Ultra" grade and are suitable for different applications like purification, precipitation, crystallisation and other applications which require tight control of elemental content. Trace elemental analyses have been performed for all qualities. The molecular biology quality is also tested for absence of nucleases. The Certificate of Analysis provides lot-specific results.

Much of the sodium chloride is mined from salts deposited from evaporation of brine of ancient oceans, or recovered from sea water by solar evaporation. Due to the presence of trace hygroscopic minerals, food-grade salt has a small amount of silicate added to prevent caking; as a result, concentrated solutions of "table salt" are usually slightly cloudy in appearance. 71376, 71378 and 71386 do not contain any anti-caking agent.

Applications:

Sodium chloride is a commonly used chemical found in nature and in all body tissue, and is considered an essential nutrient. Although generally not considered poisonous, excess NaCl can destroy electrolyte balance and cause death.

Sodium chloride is used in a wide variety of biochemical applications, including intravenous fluids (0.85% in water; isotonic), density gradients, a diluent to increase ionic strength in buffers or culture media. Traditionally, it has been used in high concentrations for preservation of foods, etc., since most bacteria cannot grow in high-salt conditions. It is also important in media to maintain the osmotic pressure and/or make it more selective. A salt-and-ice mixture in the ratio 33 g NaCl to 100 g ice (at -1 °C)³ will drop in temperature to as low as -21 °C, depending on the rate of stirring and the size of the ice chunks.³

Solubility/Solution Stability:

Maximum solubility of NaCl in water at 25 °C is 357 mg/ml. NaCl is unusual in that its solubility does not increase appreciably with temperature, since at 100 °C, the solubility is 384 mg/ml.¹ The solubility of NaCl in water is decreased by adding HCl; it is almost insoluble in concentrated HCl. The density of a saturated solution at 25 °C is 1.202 g/ml. A saturated solution (23% w/v) freezes at -20.5 °C (5 °F).¹ Solutions of sodium chloride are stable at room temperature and may be autoclaved.

References:

1. Merck Index, 12th Ed., #8742 (1996)
2. Fluka quality control
3. The Chemist's Companion: A Handbook of Practical Data, Techniques and References, eds. Gordon, A.J. and Ford, F.A. (John Wiley & Sons, 1972), p. 452.

Additional information on properties of sodium chloride may be found in the CRC Handbook of Chemistry and Physics, published annually.