

Safety Data Sheet SODIUM CHLORIDE

SDS no. 1KJ07LW9 • Version 1.0 • Date of issue: 2023-05-08

SECTION 1: Identification

GHS Product identifier

Product name SODIUM CHLORIDE

Recommended use of the chemical and restrictions on use

In the production of chemicals (sodium hydroxide, soda ash, hydrogen chloride, chlorine, metallic sodium), ceramic glazes, metallurgy of tin and other metals, curing of hides, food preservative, mineral waters, soap manufacture (salting out), home water softeners, highway deicing, regeneration of ion-exchange resins, photography, food seasoning, herbicide, fire extinguishing, nuclear reactors, mouthwash, medicine (heat exhaustion), salting out dyestuffs, supercooled solutions and laboratory reagent.

Supplier's details

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Emergency phone number

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SECTION 2: Hazard identification

General hazard statement

Not classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as non-Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

Not a hazardous substance or mixture.

GHS label elements, including precautionary statements

Not a hazardous substance or mixture.

Other hazards which do not result in classification

Not a hazardous substance or mixture.

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 58.44

Composition, information on ingredients: May contain the anticaking agent (FAN 536 or 535).

Components

Component	Concentration
Sodium chloride (CAS no.: 7647-14-5; EC no.: 425-740-5; Index no.: 611-142-00-3)	<= 100 % (weight)
CLASSIFICATIONS: No data available. HAZARDS: No data available.	

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash fountain in work area.
If inhaled	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
In case of skin contact	Wash off with soap and plenty of water.
In case of eye contact	If in eyes wash out immediately with water.
If swallowed	Rinse mouth thoroughly with water immediately. Give plenty of water to drink. Never give anything by mouth to an unconscious person. If swallowed, do NOT induce vomiting. Seek medical attention in severe cases, or if large amounts ingested.

Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically based on judgement of doctor and individual reactions of the patient.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Use fire extinguishing media appropriate for surrounding environment. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Specific hazards arising from the chemical

Toxic fumes of chloride and sodium oxide (above 1413 °C), hydrogen chloride gas.

Sodium chloride : Hydrogen chloride gas, Sodium oxides

Special protective actions for fire-fighters

Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Fight fire from safe location.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

Methods and materials for containment and cleaning up

Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid ingestion and inhalation of dust. Avoid contact with eyes, skin, and clothing.

Conditions for safe storage, including any incompatibilities

Store in tightly closed, labelled, corrosion-resistant containers, in a cool, dry, well-ventilated area away from incompatible materials. Hygroscopic.

Sodium chloride solutions are corrosive to base metals.

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Normally not required but if in doubt ensure hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body protection

Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

Respiratory protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Solid
Appearance	Colourless, transparent crystals or white, crystalline powder, partially hygroscopic.
Color	No data available.
Odor	Odourless to slight odour.
Odor threshold	No data available.
Melting point/freezing point	801 °C.
Boiling point or initial boiling point and boiling range	1413 °C; 1461 °C (1013 hPa).
Flammability	Non combustible material.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	Electrolysis of sodium chloride in presence of nitrogenous compounds to produce chlorine may lead to formation of explosive nitrogen trichloride. Potentially explosive reaction with dichloromaleic anhydride + urea. Reacts violently with Bromium trifluoride and Lithium.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	6.7 - 7.3 (aqueous solution).
Kinematic viscosity	Viscosity of saturated aqueous solution = 1.93 mPa-s.
Solubility	Readily soluble in cold water (35.7g in 100ml water at 0 °C). Slightly more soluble in hot water (39.12g in 100ml water at 100 °C). Solubility in Organic Solvents: Soluble in glycerol, ethylene glycol, formic acid and ammonia; very slightly soluble in alcohol (methanol and ethanol) and monoethanolamine; insoluble in hydrochloric acid.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	1.33 hPa (1 mmHg) at 865 °C.
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 2.165.
Relative vapor density	No data available.

Particle characteristics

No data available.

Supplemental information regarding physical hazard classes

Surface Tension: 110 mN/m of molten sodium chloride at 850 °C.

Further safety characteristics (supplemental)

Bulk density: approximately 1.1 kg/m³ (coarse grades); approx. 1.2kg/m³ (fine grades).

Taste: Saline.

Index of refraction: 1.5442.

SECTION 10: Stability and reactivity

Reactivity

None under normal use conditions.

Chemical stability

Stable under normal temperatures, pressures and conditions of use and storage. Hygroscopic: absorbs moisture or water from the air.

Possibility of hazardous reactions

Hygroscopic. Reacts with most nonnoble metals such as iron or steel, building materials (such as cement). Reactions with bromium trifluoride and lithium are violent. Electrolysis of sodium chloride in presence of nitrogenous compounds to produce chlorine may lead to formation of explosive nitrogen trichloride. Reaction of sodium chloride, urea, and dichloromaleic anhydride at 118 °C is vigorously exothermic and potentially explosive. Reaction of sodium chloride with water at >1100 °C is explosive.

Conditions to avoid

Extremes of temperature, dust generation, exposure to moist air or water and incompatible materials.

Incompatible materials

Strong oxidizing agents, metals, strong acids, alkali metals (lithium), bromine trifluoride, nitro compounds, dichloromaleic anhydride + urea.

Hazardous decomposition products

Other decomposition products - No data available In the event of fire: see section 5

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Ingestion of large amounts may cause irritation of the stomach, with nausea, vomiting, diarrhoea, prostration, rigidity or convulsions. May affect behaviour (muscle spasticity/contraction, somnolence), sense organs, metabolism, and cardiovascular system. Continued exposure may produce dehydration, congestion in most internal organs, and coma. Hypertonic salt solutions can produce violent inflammatory reactions in the gastrointestinal tract. No toxic effects are to be expected when the product is handled appropriately.

Inhalation: May cause mild nasal irritation with exposure to high dust levels and hypertension.

Skin corrosion/irritation

May cause mild skin irritation, or irritation to damaged skin, resulting in redness and itching. Absorption can occur with effects similar to those via ingestion.

Serious eye damage/irritation

May cause mild to moderate eye irritation, with redness, itching and pain.

Respiratory or skin sensitization

No data available.

Germ cell mutagenicity

Sodium chloride (CAS# 7647-14-5): DNA inhibition system-human: fibroblast 125 mmol/l.

Carcinogenicity

No data available.

Reproductive toxicity

Causes adverse reproductive effects in humans (fetotoxicity, abortion) by intraplacental route.

High intake of sodium chloride, whether from occupational exposure or in the diet, may increase risk of toxemia of pregnancy in

susceptible women (Bishop, 1978). Hypertonic sodium chloride solutions have been used to induce abortion in late pregnancy by direct infusion into the uterus (Brown et al, 1972), but this route of administration is not relevant to occupational exposures.

May cause adverse reproductive effects and birth defects in animals, particularly rats and mice (fetotoxicity, abortion, musculoskeletal abnormalities, and maternal effects (effects on ovaries, fallopian tubes) by oral, intraperitoneal, intraplacental, intrauterine, parenteral, and subcutaneous routes. In experimental animals, sodium chloride has caused delayed effects on newborns, has been fetotoxic, and has caused birth defects and abortions in rats and mice (RTECS, 1997). While sodium chloride has been used as a negative control in some reproductive studies, it has also been used as an example that almost any chemical can cause birth defects in experimental animals if studied under the right conditions (Nishimura & Miyamoto, 1969).

Specific target organ toxicity (STOT) - single exposure

No data available.

Specific target organ toxicity (STOT) - repeated exposure

No data available.

Aspiration hazard

No data available.

Additional information

Chronic Effects: Repeated ingestion of large amounts of salt can lead to vascular effects (blood pressure elevation not characterized in autonomic section, with resulting systemic effects such as oedema), disturbances of body electrolyte and fluid balance, behavioural effects (changes in motor activity, irritability, somnolence (general depressed activity), convulsions or effect on seizure threshold, muscle contraction or spasticity), endocrine effects (changes in adrenal weight), eye effects and damage to the skin and stomach.

Sodium chloride : Vomiting, Diarrhoea, Dehydration and congestion may occur in internal organs. Hypertonic salt solutions can produce inflammatory reactions in the gastrointestinal tract., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

Toxicity

No ecological problems are to be expected when the product is handled and used with due care and attention.

Persistence and degradability

Methods for the determination of biodegradability are not applicable to inorganic substances

Bioaccumulative potential

Concentration in organisms is not to be expected.

Mobility in soil

Passage from aqueous solution into the atmosphere is not to be expected.

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

SECTION 14: Transport information

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ADG (Road and Rail)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP

Poison Schedule: NS

SECTION 16: Other information

Further information/disclaimer

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Preparation information

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'

Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.

Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)