# SAFETY DATA SHEET

# ROCK SALT

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**CAS NUMBER** : 7647-14-5
**PROPER SHIPPING NAME** : Not regulated
**UN NUMBER** : Not regulated

**PRODUCT USE:** Used as a condiment and food preservative (food grade). It is the major source of industrial chlorine and sodium hydroxide. It is used in the manufacture of pulp and paper, to set dyes in textiles and fabric, to produce soap, detergents, home water softeners, curing of hides, highway de-icing, herbicides, nuclear reactors and super cooled solutions. Used for animal salt licks.

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## Section 2 - HAZARDS IDENTIFICATION

**STATEMENT OF HAZARDOUS NATURE**

**Not classified as hazardous according to the criteria of the New Zealand Hazardous Substances and New Organisms legislation and GHS 7th Edition**

**EMERGENCY OVERVIEW**
Non-hazardous.
May cause irritation following contact with the eyes or abraded skin.
Adverse ecological effects are not known or expected.

**PRECAUTIONARY STATEMENTS**
Avoid generating excessive dust.
Do not breathe dust.
If in contact with eyes, rinse thoroughly.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME | CAS RN | % | HAZARDOUS |
|---|---|---|---|
| Sodium chloride | 7647-14-5 | >90 | Yes |

**SYNONYMS:** Halite; Salt; Sodium chloride.

## Section 4 - FIRST AID MEASURES

**SWALLOWED**
Rinse mouth with water and spit the fluids out. Give a glass of water to drink. If vomiting occurs, give further water to drink. First aid is not generally required. If in doubt or if large amounts have been swallowed, contact the Poison Centre (0800 764 766) or a doctor.

**EYE**
Flush eyes with running water for several minutes. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Get medical attention if irritation persists.

**SKIN**
Brush dry material from clothing and skin. Wash skin with soap and water. If symptoms develop or persist seek medical advice.

**INHALED**
If inhaled, remove to fresh air. Keep warm and at rest. If symptoms develop seek medical advice.

**NOTES TO PHYSICIAN**
Treat symptomatically based on individual reactions of patient and judgement of doctor.
NOTE: In an emergency dial 111, for advice contact a Poison Centre (0800-764-766).

## Section 5 - FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA**
Use extinguishing media suitable for surrounding area; water spray, dry chemical, foam or carbon dioxide.

**FIRE FIGHTING**
Alert Fire Brigade and tell them location and nature of hazard.
Clear fire area of all non-emergency personnel.
Stay upwind. Eliminate ignition sources.
Wear breathing apparatus plus protective gloves.
Prevent spillage from entering drains or water courses.
Use firefighting procedures suitable for surrounding area.
DO NOT approach containers suspected to be hot.
Cool fire exposed containers with water spray from a protected location.
If safe to do so, remove containers from path of fire.
Equipment should be thoroughly decontaminated after use.

**FIRE/EXPLOSION HAZARD**
Non-combustible solid.

**HAZARDS FROM COMBUSTION PRODUCTS**
Salt withstands temperatures up to its melting point and beyond without decomposing, but at temperatures greater than approximately 800°C irritating and toxic fumes of chlorine and sodium oxide may be emitted.

**PERSONAL PROTECTIVE EQUIPMENT**
Firefighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves).

## Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Protective Equipment advice is contained in Section 8 of the SDS.

**SPILL RESPONSE**
Avoid generating dust. Increase ventilation. Move upwind.
Evacuate all unnecessary personnel.
Personnel involved in the clean-up should wear protective clothing.
Stop leak if safe to do so.
Sweep and shovel up; collect in a labelled chemical waste container and seal for reuse or disposal. See section 13 of the SDS.
Do NOT let product reach drains or waterways. In large quantities may be damaging to plants. If a significant amount does enter a waterway advise your local waste authority.
Wash spill area with plenty of water after removal of contaminant.

## Section 7 - HANDLING AND STORAGE

**PROCEDURE FOR HANDLING**
Use good occupational work practice.
Avoid prolonged or repeated exposure.
Avoid generating and breathing dust. Avoid contact with eyes and abraded skin.
Avoid contact with incompatible materials. Avoid physical damage to containers.
Handle and open container with care. Use in a well-ventilated area.
Always wash hands with soap and water after handling.
Ensure an eye bath is available and ready for use.

**SUITABLE PACKAGING**
Store in original packaging.
Polyethylene coated paper bags, or polyethylene/propylene big bags.
Check all packaging is clearly labeled and free from leaks.

**STORAGE INCOMPATIBILITY**
Avoid storage with incompatible materials including oxidizing agents, acids, bromine trifluoride, dichloromaleic anhydride plus urea, lithium, nitrogen compounds and ignition sources.

**STORAGE REQUIREMENTS**
Store in a cool, dry place away from Dangerous Goods and Toxic Substances.
Absorbs moisture if relative humidity is above 75%.
Store in a well-ventilated area.
Keep storage area free of debris, waste and combustibles.
Keep containers securely sealed.
Protect packaging against physical damage.
Protect from sunlight and moisture exposure.

## Section 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

**EXPOSURE CONTROLS**

| Source | Material | Measurement | Limit |
|---|---|---|---|
| New Zealand WES 2019 | total dust | time weighted average (TWA) | 10 mg/m$^3$ |
| New Zealand WES 2019 | respirable dust | time weighted average (TWA) | 3 mg/m$^3$ |

No exposure limits set by WorkSafe New Zealand or Safe Work Australia.

**ENGINEERING CONTROLS**

**VENTILATION SYSTEM**
A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Refer to 'A simple guide to local exhaust ventilation' found on the WorkSafe New Zealand website.

**PERSONAL PROTECTION EQUIPMENT (PPE)**

**PERSONAL RESPIRATORS**
An approved dust mask e.g. a P1 respirator is recommended when using this product in dusty conditions. See Australian/New Zealand Standard, AS/NZS 1715:2009 and AS/NZS 1716:2012.

**SKIN PROTECTION**
Wear impervious protective clothing, including covered shoes, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**EYE PROTECTION**
Use safety glasses with side-shields, or goggles to prevent exposure.
Maintain eye wash fountain and quick-drench facilities in work area.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE**
White or pinkish to light brown coarse crystals or large lumps.

**PHYSICAL PROPERTIES**

| PROPERTY | VALUE |
|---|---|
| State: | Solid |
| Odour: | Odourless |
| Molecular Weight: | 58.44 |
| Melting Range (˚C): | 802 |
| Boiling Range (˚C): | 1461 |
| Solubility in water (g/L, 20˚C): | 358 |
| pH (100g/L, 20˚C): | 4.5-7.0 |
| Bulk density (kg/m$^3$): | ~1.140 |
| Density (g/cm$^3$): | 2.17 |
| Volatile Component (%vol): | Not available |
| Relative Vapor Density(air=1): | Not available |
| Vapour Pressure (hPa, 865˚C): | 1.3 |
| Autoignition Temp (˚C): | Not applicable |
| Flash Point (˚C): | Not applicable |
| Lower Explosive Limit (%): | Not applicable |
| Upper Explosive Limit (%): | Not applicable |
| Decomposition Temp (˚C): | Not available |
| Viscosity: | Not applicable |
| Evaporation Rate: | Not applicable |

## Section 10 - CHEMICAL STABILITY AND REACTIVITY

**CHEMICAL STABILITY**
Product is stable under normal conditions of use, storage and temperature. Hygroscopic, absorbs moisture above 75% humidity.

**CONDITIONS TO AVOID**
Avoid excessive heat, direct sunlight, moisture, and temperature extremes.

**INCOMPATIBLE MATERIALS**
Incompatible with oxidizing agents, acids, nitrogen compounds and ignition sources. Reacts with strong sulphuric acid or nitric acid to give hydrogen chloride gas. Possible violent reaction on contact with bromine trifluoride. Explosive reaction with dichloromaleic anhydride plus urea above 118°C. Releases

violent flammable sodium on burning with lithium. May form explosive compounds under electrolysis conditions. In wet conditions may corrode metals particularly iron, aluminium and zinc.

**HAZARDOUS DECOMPOSITION PRODUCTS**
Thermal decomposition can lead to release of toxic fumes of chloride and sodium oxide.

**HAZARDOUS REACTIONS**
Hazardous polymerization will not occur.

## Section 11 - TOXICOLOGICAL INFORMATION

**ACUTE HEALTH EFFECTS**

**SWALLOWED**
High concentrations produce inflammatory reactions in the gastrointestinal tract and can cause vomiting, diarrhoea, convulsions and collapse. The ingestion of hypertonic solutions can cause fatal disturbance of body electrolyte and fluid balance particularly in the young and elderly. Less than a tablespoon of salt may severely poison an infant and sometimes prove fatal.

**EYE**
Causes eye irritation, redness and pain.

**SKIN**
Irritating to damaged skin. May cause irritation following prolonged contact.

**INHALED**
Very high concentrations of salt dust may result in inflammation of the mucous membranes of the respiratory tract.

**CHRONIC HEALTH EFFECTS**
Long term ingestion of excessive amounts of sodium chloride can lead to an increased risk of raised blood pressure and increased calcium losses. The recommended daily intake of Sodium for men and women (19-70+ years) is 920-2300 mg/day.

**TOXICITY AND IRRITATION DATA**

**TOXICITY**
Acute Oral Toxicity, Rat, $LD_{50}$: 3000 mg/kg
Acute Dermal Toxicity, $LD_{50}$: No data available.
Acute Inhalation Toxicity, $LC_{50}$: No data available.

**IRRITATION/ CORROSION**
Skin: No reaction after contact with intact skin; may cause irritation to abraded skin. Not classified.
Eyes: Rabbit, moderately irritating to the eye but clears within 7 days. Not classified.

**Sensitisation (respiratory/contact):** Not classified.
**Carcinogenic effects**: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH.
**Mutagenic effects**: Not classified.
**Reproductive or developmental effects**: Not classified.
**Aspiration hazard:** Not classified.
**Specific target organ toxicity:** Not classified.

## Section 12 - ECOLOGICAL INFORMATION

**ECOTOXICITY**
No adverse effects on the environment expected under normal conditions of use.

**TOXICITY DATA**
Fish, 96hr $LC_{50}$: 6750 mg/L
Crustacean, (*Daphnia*), 48hr $EC_{50}$: 2024 mg/L
Algae, 72hr $LC_{50}$: 3014 mg/L

**Persistence and Degradability:** In water Sodium Chloride exists as Sodium ions and Chloride ions.
**Mobility:** Soluble in water.
**Bioaccumulation:** Not applicable. Sodium and chloride ions play a critical role in many life-sustaining processes.
**BOD5 and COD:** Not applicable.
**Products of Biodegradation:** Not applicable.
**Toxicity of the Products of Biodegradation:** Not applicable.

Sodium chloride occurs in nature as the mineral halite.

DO NOT discharge into sewer or waterways.

## Section 13 - DISPOSAL CONSIDERATIONS

Recycle wherever possible.

Consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.

Dispose of by: Burial in a licensed landfill or incineration in a licensed apparatus (after admixture with suitable combustible material).

Empty contaminated packaging should be taken for local recycling, recovery or waste disposal.

## Section 14 - TRANSPORT INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG.
Not classified as a Dangerous Good under NZS 5433:2007 Transport of Dangerous Goods on Land.

## Section 15 - REGULATORY INFORMATION

**REGULATIONS**
Non-hazardous.
The product has been reevaluated based on the criteria of GHS 7$^{th}$ edition and classified non-hazardous.

Sodium Chloride (CAS 7647-14-5) is found on the following chemical inventories:
NZIoC, TSCA, AICIS, DSL and ENCS

## Section 16 - OTHER INFORMATION

NEW ZEALAND POISON CENTRE 0800 POISON (0800 764 766)
NZ EMERGENCY SERVICES: 111

**Interpretation and Abbreviations**
ACGIH – American Conference of Governmental Industrial Hygienists.
ACVM – Agricultural Chemicals and Veterinary Medicines.
AICS – Australian Inventory of Chemical Substances.
BOD – Biochemical Oxygen Demand.
China IECSC – Inventory of Existing Chemical Substances Produced or Imported in China.

COD – Chemical Oxygen Demand.
DSL – Canadian Domestic Substances List.
EINECS – European Inventory of Existing Commercial Chemical Substances.
ENCS – Japanese Existing and New Chemical substances.
GHS – Globally Harmonized System of Classification and Labelling of Chemicals.
IDLH – Immediately Dangerous to Life or Health Concentrations.
IARC – International Agency for Research on Cancer.
Koc – soil organic carbon-water partition coefficient
Kow - octanol/water partition coefficient
LOEL – Lowest Observed Effect Level.
$LD_{LO}$ – Lethal Dose Low (the lowest dosage per unit of bodyweight of a substance known to have resulted in fatality in a particular animal species).
NOAA – National Oceanic and Atmospheric Administration.
NOEC – No Observed Effect Concentration.
NZ EPA CCID – New Zealand Environmental Protection Authority Chemical Classification and Information Database.
NZIoC – New Zealand Inventory of Chemicals.
OECD HPV – The Organisation for Economic Co-operation and Development High Production Volume Chemicals.
PPE – Personal Protective Equipment.
Prop 65 – California Proposition 65 List of Chemicals.
RTECS – Registry of Toxic Effects of Chemical substances.
SCAPA – Subcommittee on Consequence Assessment and Protective Actions.
STEL – Short term exposure limit.
TOC – Total Organic Carbon.
TSCA – US Toxic Substances Control Act Existing Chemicals.
TWA - The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.
VOC – Volatile Organic Compounds.

**Sources of key data used to compile the datasheet**:
Manufacturer's SDS
HSDB Toxnet
NZ EPA CCID
CAMEO Chemicals
NZ Nutrition Foundation
GESTIS Substances Database

**Date of first issue:** Prior to 2013.01
**Date of Preparation/Review**: 2020.10.01
**Amendments**: 5 yearly review. Reclassified to non-hazardous based on the criteria of GHS.

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End of SDS