SAFETY DATA SHEET

1. Identification

GHS Product identifier: Brine Solution

Other means of identification
Common name(s), synonym(s): Salt water, Brine recycle stream, Sodium chloride solution
SDS number: NOVA-0087

Recommended use and restriction on use
Recommended use: Operation of underground storage caverns and for salt manufacturing.
Restrictions on use: All uses other than the identified.

Manufacturer/Importer/Supplier/Distributor Information

Manufacturer
Company Name: NOVA Chemicals
Address: 785 Petrolia Line
Corunna, Ontario, Canada N0N 1G0
Telephone: Product Information: 1-412-490-4063
SDS Information Email: msdsemail@novachem.com

Emergency telephone number:
1-800-561-6682, 1-403-314-8767 (NOVA Chemicals) (24 hours)
1-613-996-6666 (Canutec-Canada) (24 hours)

General Comments
This is not a NOVA Chemicals’ product.

2. Hazard(s) identification

Hazard Classification
Health Hazards
Serious Eye Damage/Eye Irritation Category 2A

Label Elements

Hazard Symbol:

Signal Word: Warning
Hazard Statement: Causes serious eye irritation.
Precautionary Statements:
Prevention: Wash hands thoroughly after handling. Wear eye protection/face protection.
Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>Content in percent (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride</td>
<td>Salt</td>
<td>7647-14-5</td>
<td>5 - 26%</td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight.

Additional Information: This product is considered hazardous by the Hazardous Products Regulations, 2015.

4. First-aid measures

Ingestion: Call a POISON CENTRE/doctor if you feel unwell.

Inhalation: Call a POISON CENTRE/doctor if you feel unwell.

Skin Contact: If skin irritation occurs: Get medical advice/attention.

Eye contact: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Most important symptoms/effects, acute and delayed

Symptoms: Eye irritation.

Indication of immediate medical attention and special treatment needed

Treatment: For more detailed medical emergency support information, call 1-800-561-6682 or 1-403-314-8767 (24 hours, NOVA Chemicals Emergency Response). Treat symptomatically. Treatment for overexposure should be directed at controlling the symptoms and clinical condition of the patient. After adequate first aid, no further treatment is required unless symptoms reappear.

5. Fire-fighting measures

General Fire Hazards: This product is not flammable. Product does not burn.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: In case of fire in the surroundings: use appropriate extinguishing media.
Unsuitable extinguishing media: Not applicable.

Specific hazards arising from the chemical: None. This product is not flammable.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: None.

Special protective equipment for firefighters: Firefighters should wear personal protective equipment suitable for the fire conditions and the materials burning.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unauthorized personnel away.

Methods and material for containment and cleaning up: Wear appropriate personal protective equipment. Do not touch or walk through spilled material. Keep upwind. Keep out of low areas. Stop leak if safe to do so. Contain discharge by booming on water or diking on ground. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply.

Small Spills: Remove liquid material with approved pumps or vacuum equipment.

Large Spills: Isolate, contain, and attempt to recover. Remove liquid material with approved pumps or vacuum equipment. Spill area may be washed down with water, with wash waters collected for testing and proper disposal.

7. Handling and storage

Precautions for safe handling: Product is slowly corrosive to metal. Handle in properly designed and approved equipment systems. Periodically inspect pipelines and other equipment for integrity and corrosion. Do not ingest or inhale. Avoid contact with skin and eyes. Wash hands thoroughly after handling. Wear eye protection/face protection.

Conditions for safe storage, including any incompatibilities: Storage area should be clearly identified, well-illuminated and clear of obstruction. Store locked up. Only allow access to authorized persons. Storage ponds and tank areas should be periodically inspected and kept separate from fresh water supply or outlets. Keep away from incompatible materials.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits: None of the components have assigned exposure limits.

Appropriate Engineering Controls: Provide adequate ventilation to maintain worker exposure below levels that are irritating to the eyes. Administrative (procedure) controls and use of personal protective equipment may also be required.
Individual protection measures, such as personal protective equipment

General information: Personal protective equipment (PPE) should not be considered a long-term solution to exposure control. Employer programs to properly select, fit, maintain and train employees to use equipment must accompany PPE. Consult a competent industrial hygiene resource, the PPE manufacturer's recommendation, and/or applicable regulations to determine hazard potential and ensure adequate protection.

Eye/face protection: Chemical goggles are recommended. If splashing is possible use chemical goggles and a full-face shield. Carefully rinse off contaminated goggles before removing.

Skin Protection
Hand Protection: Chemical resistant gloves.

Other: Wear chemical-resistant safety footwear with good traction to prevent slipping. Wear work clothes with long sleeves and pants. If splashing or contact with liquid material is possible, consider the need for an impervious overcoat.

Respiratory Protection: None under normal conditions.

Hygiene measures: Ensure that eyewash stations and safety showers are in close proximity to work locations.

9. Physical and chemical properties

Appearance
Physical state: liquid
Form: liquid
Colour: White/clear
Odour: Odourless
Odour threshold: No data available.
pH: 6.5 - 8.5
Melting point/freezing point: -10 °C (14 °F)
Initial boiling point and boiling range: > 100 °C (> 212 °F)
Flash Point: not applicable
Evaporation rate: No data available.
Flammability (solid, gas): not applicable
Upper/lower limit on flammability or explosive limits
Flammability limit - upper (%): not applicable
Flammability limit - lower (%): not applicable
Vapour pressure: not applicable
Vapour density: not applicable
Density: 1,200 kg/m³
Relative density: 1.2 (15 °C (59 °F))
Solubility(ies)
Solubility in water: Miscible with water.
Solubility (other): No data available.
Partition coefficient (n-octanol/water): No data available.
Auto-ignition temperature: not applicable
Decomposition temperature: not applicable
Viscosity: No data available.
10. Stability and reactivity

Reactivity: Product is slowly corrosive to metal.
Chemical Stability: Material is stable under normal conditions.
Possibility of Hazardous Reactions: None known.
Conditions to Avoid: None known.
Incompatible Materials: In presence of air, liquid contact or mists will slowly corrode most metals.
Hazardous Decomposition Products: None known.

11. Toxicological information

Information on likely routes of exposure
Ingestion: Ingestion of large quantities of this product may cause irritation of the gastrointestinal tract.
Inhalation: May be irritating to the respiratory tract.
Skin Contact: Skin contact may lead to skin dryness; mild skin irritant.
Eye contact: Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics
Ingestion: If very large quantities ingested - nausea, vomiting, dehydration, diarrhoea, oedema.
Inhalation: Coughing, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
Skin Contact: Dry skin.
Eye contact: Eye irritation.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)
Oral Product: Not classified for acute toxicity based on available data.
Dermal Product: Not classified for acute toxicity based on available data.
Inhalation Product: Not classified for acute toxicity based on available data.
Repeated dose toxicity Product: No data available.

Skin Corrosion/Irritation
Product: No data available.

Specified substance(s): Sodium chloride Mild.
Serious Eye Damage/Eye Irritation
Product: Causes serious eye irritation.

Respiratory or Skin Sensitization
Product: No data available.

Carcinogenicity
Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

ACGIH Carcinogen List:
No carcinogenic components identified

Germ Cell Mutagenicity
In vitro
Product: No data available.
In vivo
Product: No data available.

Reproductive toxicity
Product: No data available.

Specific Target Organ Toxicity - Single Exposure
Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure
Product: No data available.

Aspiration Hazard
Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish
Product: No data available.

Specified substance(s):
Sodium chloride
LC 50 (Rainbow trout, donaldson trout (Oncorhynchus mykiss), 96 h): 4,747 - 7,824 mg/l Mortality

Aquatic Invertebrates
Product: No data available.

Specified substance(s):
Sodium chloride
EC 50 (Water flea (Daphnia magna), 48 h): 340.7 - 469.2 mg/l Intoxication

Toxicity to aquatic plants
Product: No data available.
Chronic hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Toxicity to aquatic plants
Product: No data available.

Persistence and Degradability

Biodegradation
Product: No data available.

BOD/COD Ratio
Product: No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)
Product: No data available.

Partition Coefficient n-octanol / water (log Kow)
Product: No data available.

Mobility in Soil: When spilled onto soil, brine will behave similar to spilled water. Sodium chloride may leach from soil into groundwater.

Other Adverse Effects: A concentrated brine solution (~26% sodium chloride) will dehydrate animal and vegetative species.

13. Disposal considerations

Disposal instructions: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal. The use, mixing or processing of this product with other materials may alter its properties or hazards.

Contaminated Packaging: Check local, federal and provincial environmental regulations prior to disposal.

14. Transport information

TDG
Not regulated.

15. Regulatory information

Significant New Activity (SNAc):
This product does not contain any components subject to a SNAc Notice.

Inventory status
Canada DSL Inventory List: On or in compliance with the inventory
US TSCA Inventory: On or in compliance with the inventory

16. Other information, including date of preparation or last revision

Issue Date: 11/30/2017
SDS_CA
Revision Information: 11/30/2017: SDS Update – phrasing updates, density added

Version #: 6.1

Abbreviations and acronyms:

ACGIH = American Conference of Governmental Industrial Hygienists; BOD = Biochemical Oxygen Demand; CAS = Chemical Abstracts Service; CEPA = Canadian Environmental Protection Act; COD = Chemical Oxygen Demand; DSL = Domestic Substances List; EC50 = Effective Concentration 50%; EPA = Environmental Protection Agency; GHS = Globally Harmonized System for the Classification and Labelling of Chemicals; IARC = International Agency for Research on Cancer; IDLH = Immediately Dangerous to Life or Health; Kow = Octanol/water partition coefficient; LC50 = Lethal Concentration 50%; LD50 = Lethal Dose 50%; LEL = Lower Explosive Limit; LFL = Lower Flammable Limit; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OEL = Occupational Exposure Limit; OSHA = Occupational Safety and Health Administration; PNOC = Particulates Not Otherwise Classified; PPE = Personal Protective Equipment; SCBA = Self Contained Breathing Apparatus; SDS = Safety Data Sheet; STEL = Short Term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

Disclaimer:

ALTHOUGH THE INFORMATION CONTAINED IN THIS DOCUMENT IS PRESENTED IN GOOD FAITH, BASED ON AVAILABLE INFORMATION BELIEVED TO BE RELIABLE AT THE TIME OF PREPARATION OF THIS DOCUMENT, NOVA CHEMICALS MAKES NO WARRANTIES OR REPRESENTATIONS WITH RESPECT TO THE INFORMATION OR THE PRODUCT/MATERIALS DESCRIBED HEREIN, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES AND CONDITIONS (INCLUDING ALL WARRANTIES AND CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE). NO FREEDOM FROM INFRINGEMENT OF ANY PATENT OWNED BY NOVA CHEMICALS OR OTHERS IS TO BE INFERRED. THIS INFORMATION IS SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE CONTACT NOVA CHEMICALS FOR THE MOST CURRENT VERSION OF THIS SDS. NOVA CHEMICALS DOES NOT ASSUME RESPONSIBILITY FOR SDS OBTAINED FROM THIRD PARTY SOURCES.

UNLESS SPECIFICALLY AGREED OTHERWISE, NOVA CHEMICALS DOES NOT TAKE RESPONSIBILITY FOR USE, TRANSPORTATION, STORAGE, HANDLING OR DISPOSAL OF THE PRODUCT/MATERIALS DESCRIBED HEREIN.

is a registered trademark of NOVA Brands Ltd.; authorized use/utilisation autorisée.