

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/22/2023

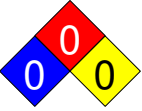
Reviewed on 05/22/2023

1 Identification

- **Product identifier**
- **Trade name:** Membrane Brine LCS
pH 2.0 - 2.5
- **Article number:** OXY121
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Aqua Solutions, Inc.
6913 Highway 225
DEER PARK, TX 77536
USA
800-256-2586
- **Information department:**
Technical Coordinator
Sherman Nelson shermann@aquasolutions.org
- **Emergency telephone number:**
Chemtrec: 800-424-9300
Canutec: 613-996-6666



2 Hazard(s) identification

- **Classification of the substance or mixture**
The product is not classified, according to the Globally Harmonized System (GHS).
 - **Label elements**
 - **GHS label elements** Not Applicable
 - **Hazard pictograms** Not Applicable
 - **Signal word** Not Applicable
 - **Hazard statements** Not Applicable
 - **Precautionary statements**
If swallowed: Call a poison center/doctor if you feel unwell.
If on skin: Wash with plenty of water.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Dispose of contents/container in accordance with local/regional/national/international regulations.
 - **Classification system:**
 - **NFPA ratings (scale 0 - 4)**
- 

Health = 0
Fire = 0
Reactivity = 0
- **HMIS-ratings (scale 0 - 4)**
- | | | |
|------------|---|----------------|
| HEALTH | 0 | Health = 0 |
| FIRE | 0 | Fire = 0 |
| REACTIVITY | 0 | Reactivity = 0 |
- **Other hazards**
 - **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.

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Trade name: Membrane Brine LCS
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3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 7697-37-2	Nitric Acid	0.198%
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· **Table of Nonhazardous Ingredients**

CAS: 7732-18-5	Water	75.08%
CAS: 7647-14-5	Sodium Chloride	24.717%
CAS: 877-24-7	Potassium Hydrogen Phthalate	0.004%
CAS: 471-34-1	Calcium Carbonate	0.0001%
CAS: 513-77-9	Barium Carbonate, Reagent ACS Grade	0.0001%
CAS: 7439-89-6	Iron Metal	0.0001%
CAS: 7439-95-4	Magnesium	0.0001%
CAS: 7439-96-5	manganese	0.0001%
CAS: 7440-02-0	Nickel Metal	0.0001%
CAS: 7681-49-4	Sodium Fluoride	0.0001%
CAS: 7775-09-9	Sodium Chlorate	0.0001%
CAS: 7784-27-2	Aluminum Nitrate	0.0001%
CAS: 10042-76-9	Strontium Nitrate	0.0001%

4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.

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· **Environmental precautions:**

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

· **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to section 13.

· **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

· **Protective Action Criteria for Chemicals**

· **PAC-1:**

CAS: 7697-37-2	Nitric Acid	0.16 ppm
CAS: 877-24-7	Potassium Hydrogen Phthalate	9.6 mg/m ³
CAS: 471-34-1	Calcium Carbonate	45 mg/m ³
CAS: 513-77-9	Barium Carbonate, Reagent ACS Grade	2.2 mg/m ³
CAS: 7439-89-6	Iron Metal	3.2 mg/m ³
CAS: 7439-95-4	Magnesium	18 mg/m ³
CAS: 7439-96-5	manganese	3 mg/m ³
CAS: 7440-02-0	Nickel Metal	4.5 mg/m ³
CAS: 7681-49-4	Sodium Fluoride	17 mg/m ³
CAS: 7775-09-9	Sodium Chlorate	3.6 mg/m ³
CAS: 7784-27-2	Aluminum Nitrate	83 mg/m ³
CAS: 10042-76-9	Strontium Nitrate	5.7 mg/m ³

· **PAC-2:**

CAS: 7697-37-2	Nitric Acid	24 ppm
CAS: 877-24-7	Potassium Hydrogen Phthalate	110 mg/m ³
CAS: 471-34-1	Calcium Carbonate	210 mg/m ³
CAS: 513-77-9	Barium Carbonate, Reagent ACS Grade	270 mg/m ³
CAS: 7439-89-6	Iron Metal	35 mg/m ³
CAS: 7439-95-4	Magnesium	200 mg/m ³
CAS: 7439-96-5	manganese	5 mg/m ³
CAS: 7440-02-0	Nickel Metal	50 mg/m ³
CAS: 7681-49-4	Sodium Fluoride	90 mg/m ³
CAS: 7775-09-9	Sodium Chlorate	40 mg/m ³
CAS: 7784-27-2	Aluminum Nitrate	920 mg/m ³
CAS: 10042-76-9	Strontium Nitrate	62 mg/m ³

· **PAC-3:**

CAS: 7697-37-2	Nitric Acid	92 ppm
CAS: 877-24-7	Potassium Hydrogen Phthalate	630 mg/m ³
CAS: 471-34-1	Calcium Carbonate	1,300 mg/m ³
CAS: 513-77-9	Barium Carbonate, Reagent ACS Grade	1,600 mg/m ³
CAS: 7439-89-6	Iron Metal	150 mg/m ³
CAS: 7439-95-4	Magnesium	1,200 mg/m ³

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CAS: 7439-96-5	manganese	1,800 mg/m ³
CAS: 7440-02-0	Nickel Metal	99 mg/m ³
CAS: 7681-49-4	Sodium Fluoride	1,100 mg/m ³
CAS: 7775-09-9	Sodium Chlorate	240 mg/m ³
CAS: 7784-27-2	Aluminum Nitrate	5,500 mg/m ³
CAS: 10042-76-9	Strontium Nitrate	370 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

CAS: 7697-37-2 Nitric Acid

PEL	Long-term value: 5 mg/m ³ , 2 ppm
REL	Short-term value: 10 mg/m ³ , 4 ppm Long-term value: 5 mg/m ³ , 2 ppm
TLV	Short-term value: (4) NIC-0.025* ppm Long-term value: (2) ppm *inh. fraction + vapor

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:** Not required.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:** Goggles recommended during refilling.

- **Body protection:** Protective work clothing

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form: Liquid

Color: Clear

- **Odor:** Odorless

- **Odor threshold:** Not determined.

- **pH-value at 20 °C (68 °F):** 2.3

- **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: 100 °C (212 °F)

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Not applicable.

- **Decomposition temperature:** Not determined.

- **Ignition temperature:** Product is not selfigniting.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

- **Vapor pressure at 20 °C (68 °F):** 23 hPa (17.3 mm Hg)

- **Density at 20 °C (68 °F):** 1.33149 g/cm³ (11.11128 lbs/gal)

- **Relative density** Not determined.

- **Vapor density** Not determined.

- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with**

Water: Fully miscible.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**

Dynamic: Not determined.

Kinematic: Not determined.

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· Solvent content:	
Water:	75.1 %
VOC content:	0.00 %
	0.0 g/l / 0.00 lb/gal
· Solids content:	46.2 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· Information on toxicological effects

· Acute toxicity:

· LD/LC50 values that are relevant for classification:

ATE (Acute Toxicity Estimate)

Inhalative	LC50/4h	1,519 mg/l
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· Primary irritant effect:

- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.

· Additional toxicological information:

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

CAS: 7440-02-0	Nickel Metal	2B
CAS: 7681-49-4	Sodium Fluoride	3

· NTP (National Toxicology Program)

CAS: 7440-02-0	Nickel Metal	R
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· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

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12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** Smaller quantities can be disposed of with household waste.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, ADN, IMDG, IATA 	Not regulated
<ul style="list-style-type: none"> · UN proper shipping name · DOT, ADN, IATA · IMDG 	Not regulated Not Regulated Not regulated
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT, ADN, IMDG, IATA · Class 	Not regulated
<ul style="list-style-type: none"> · Packing group · DOT, IMDG, IATA 	Not regulated
<ul style="list-style-type: none"> · Environmental hazards: · Marine pollutant: 	No
<ul style="list-style-type: none"> · Special precautions for user 	Not applicable.
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.

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· UN "Model Regulation": Not regulated

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
 No further relevant information available.

· **Sara**

· **Section 355 (extremely hazardous substances):**

CAS: 7697-37-2	Nitric Acid
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· **Section 313 (Specific toxic chemical listings):**

CAS: 7697-37-2	Nitric Acid
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CAS: 513-77-9	Barium Carbonate, Reagent ACS Grade
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CAS: 7439-96-5	manganese
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CAS: 7440-02-0	Nickel Metal
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CAS: 7784-27-2	Aluminum Nitrate
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CAS: 10042-76-9	Strontium Nitrate
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· **TSCA (Toxic Substances Control Act):**

Water	ACTIVE
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Sodium Chloride	ACTIVE
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Nitric Acid	ACTIVE
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Potassium Hydrogen Phthalate	ACTIVE
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Calcium Carbonate	ACTIVE
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Barium Carbonate, Reagent ACS Grade	ACTIVE
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Iron Metal	ACTIVE
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Magnesium	ACTIVE
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manganese	ACTIVE
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Nickel Metal	ACTIVE
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Sodium Fluoride	ACTIVE
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Sodium Chlorate	ACTIVE
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Strontium Nitrate	ACTIVE
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· **Hazardous Air Pollutants**

CAS: 7439-96-5	manganese
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· **Proposition 65**

· **Chemicals known to cause cancer:**

CAS: 7440-02-0	Nickel Metal
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· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

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· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

CAS: 513-77-9	Barium Carbonate, Reagent ACS Grade	D, CBD(inh), NL(oral)
CAS: 7439-96-5	manganese	D

· **TLV (Threshold Limit Value)**

CAS: 513-77-9	Barium Carbonate, Reagent ACS Grade	A4
CAS: 7440-02-0	Nickel Metal	A5
CAS: 7681-49-4	Sodium Fluoride	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

CAS: 7440-02-0	Nickel Metal
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· **GHS label elements** Not Applicable

· **Hazard pictograms** Not Applicable

· **Signal word** Not Applicable

· **Hazard statements** Not Applicable

· **Precautionary statements**

If swallowed: Call a poison center/doctor if you feel unwell.

If on skin: Wash with plenty of water.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Environment protection department.

· **Contact:**

· **Date of preparation / last revision**

Revision 1.0 05/22/2023, reviewed SDS for accuracy. S.T.N.

Revision 1.0 01-10-2022, removed fluoride and sulfate from ingredients. STN

Creation date for SDS 07-24-2018. STN

05/22/2023

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

· *** Data compared to the previous version altered.**