

Safety Data Sheet

acc. to OSHA HCS

Printing date 12/20/2017

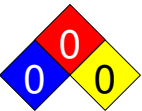
Reviewed on 12/20/2017

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 sherman@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
FIRE	0
REACTIVITY	0

Health = 0

Fire = 0

Reactivity = 0
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

US

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 12/20/2017

Reviewed on 12/20/2017

Trade name: Membrane Brine LCS
pH 2.0 - 2.5

(Contd. of page 1)

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Dangerous components:** Not Applicable

· Table of Nonhazardous Ingredients

CAS: 7647-14-5	Sodium Chloride	24.717%
CAS: 7697-37-2	Nitric Acid	0.198%
CAS: 877-24-7	Potassium Hydrogen Phthalate	0.0043%
CAS: 7439-89-6	Iron Metal	0.0001%
CAS: 7681-49-4	Sodium Fluoride	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: 10042-76-9	Strontium Nitrate	0.0001%
CAS: 7775-09-9	Sodium Chlorate	0.0001%
CAS: 471-34-1	Calcium Carbonate	0.0001%
CAS: 513-77-9	Barium Carbonate, Reagent ACS Grade	0.0001%
CAS: 7784-27-2	Aluminum Nitrate	0.0001%
CAS: 7732-18-5	Water	75.08%

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.

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 12/20/2017

Reviewed on 12/20/2017

Trade name: Membrane Brine LCS
pH 2.0 - 2.5

(Contd. of page 2)

• **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 item 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: 7439-89-6	Iron Metal	3.2 mg/m ³
CAS: 7681-49-4	Sodium Fluoride	17 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: 10042-76-9	Strontium Nitrate	5.7 mg/m ³
CAS: 7775-09-9	Sodium Chlorate	3.6 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: 7784-27-2	Aluminum Nitrate	83 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: 7439-89-6	Iron Metal	35 mg/m ³
CAS: 7681-49-4	Sodium Fluoride	90 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: 10042-76-9	Strontium Nitrate	62 mg/m ³
CAS: 7775-09-9	Sodium Chlorate	40 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: 7784-27-2	Aluminum Nitrate	920 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: 7439-89-6	Iron Metal	150 mg/m ³
CAS: 7681-49-4	Sodium Fluoride	1,100 mg/m ³
CAS: 7439-95-4	Magnesium	1,200 mg/m ³
CAS: 7439-96-5	manganese	1,800 mg/m ³

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 12/20/2017

Reviewed on 12/20/2017

Trade name: Membrane Brine LCS
pH 2.0 - 2.5

CAS: 7440-02-0	Nickel Metal	(Contd. of page 3) 99 mg/m ³
CAS: 10042-76-9	Strontium Nitrate	370 mg/m ³
CAS: 7775-09-9	Sodium Chlorate	240 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: 7784-27-2	Aluminum Nitrate	5,500 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 item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **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

- **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.

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 12/20/2017

Reviewed on 12/20/2017

Trade name: Membrane Brine LCS
pH 2.0 - 2.5

(Contd. of page 4)

- **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.

· **Ignition temperature:**

Decomposition temperature: Not determined.

· **Auto igniting:** 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.

· **Solvent content:**

Water: 75.1 %

VOC content: 0.00 %

0.0 g/l / 0.00 lb/gal

Solids content: 46.2 %

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 12/20/2017

Reviewed on 12/20/2017

Trade name: Membrane Brine LCS
pH 2.0 - 2.5

(Contd. of page 5)

· **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)

Oral	LD50	15,172 mg/kg (rat)
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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: 7681-49-4	Sodium Fluoride	3
CAS: 7440-02-0	Nickel Metal	2B

· **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.

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.

(Contd. on page 7)

Safety Data Sheet

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Reviewed on 12/20/2017

Trade name: Membrane Brine LCS
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(Contd. of page 6)

- **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

· UN-Number	
· DOT, ADN, IMDG, IATA	Not regulated
· UN proper shipping name	
· DOT, ADN, IATA	Not regulated
· IMDG	Not Regulated
· Transport hazard class(es)	
· DOT, ADN, IMDG, IATA	
· Class	Not regulated
· Packing group	
· DOT, IMDG, IATA	Not regulated
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	Not regulated

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

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

CAS: 7697-37-2 Nitric Acid

(Contd. on page 8)

Safety Data Sheet

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Trade name: Membrane Brine LCS
pH 2.0 - 2.5

(Contd. of page 7)

· **Section 313 (Specific toxic chemical listings):**

CAS: 7697-37-2	Nitric Acid
CAS: 7439-96-5	manganese
CAS: 7440-02-0	Nickel Metal
CAS: 10042-76-9	Strontium Nitrate
CAS: 513-77-9	Barium Carbonate, Reagent ACS Grade
CAS: 7784-27-2	Aluminum Nitrate

· **TSCA (Toxic Substances Control Act):**

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

· **TSCA new (21st Century Act) (Substances not listed)**

· **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.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

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

· **TLV (Threshold Limit Value established by ACGIH)**

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

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

Printing date 12/20/2017

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Trade name: Membrane Brine LCS
pH 2.0 - 2.5

(Contd. of page 8)

- **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**
 - 12-20-2017: review SDS for accuracy. STN
 - Creation date for SDS 01-20-2015. STN
 - 12/20/2017 / -
- **Abbreviations and acronyms:**
 - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 - IMDG: International Maritime Code for Dangerous Goods
 - DOT: US Department of Transportation
 - IATA: International Air Transport Association
 - ACGIH: American Conference of Governmental Industrial Hygienists
 - 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

US