

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07

Date of issue: 05/08/2025

Revised on 05/08/2025

* 1 Identification

· **Product Identifier**

· **Trade Name:** "Artificial Seawater" ASTM D 1141-98, Formula A, Table X1.1

· **Other means of identification** "Artificial Seawater" ASTM D 1141-52, Formula A, Table 1, Section 4

· **Relevant identified uses of the substance or mixture and uses advised against:**

· **Product Description:**

Corrosion studies, ocean instrument calibration, chemical testing, and biological application.

· **Details of the Supplier of the Safety Data Sheet:**

· **Manufacturer/Supplier:**

Lake Products Company LLC

PO Box 2658

Florissant, MO 63032

314-770-2299

sales@lakeproductscompany.com

www.lakeproductscompany.com

· **Emergency telephone number:** +1-314-494-7443 / 24 hours a day

2 Hazard(s) Identification

· **Classification of the substance or mixture:**



Acute toxicity - oral 4 H302 Harmful if swallowed.

Skin irritation 2 H315 Causes skin irritation.

Eye irritation 2B H320 Causes eye irritation.

· **Label elements:**

· **Hazard pictograms:**



· **Signal word:** Warning

· **Hazard statements:**

H302 Harmful if swallowed.

H315+H320 Causes skin and eye irritation.

· **Precautionary statements:**

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves.

P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.

P330 Rinse mouth.

P302+P352 If on skin: Wash with plenty of water.

P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

P337+P313 If eye irritation persists: Get medical advice/attention.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

Safety Data Sheet

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Trade Name: "Artificial Seawater" ASTM D 1141-98, Formula A, Table X1.1

· **Unknown acute toxicity:**

This value refers to knowledge of known, established toxicological or ecotoxicological values.

4.1 % of the mixture consists of component(s) of unknown toxicity.

· **Information pertaining to particular dangers for man and environment:**

· **Classification system:** NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**

HEALTH	1	Health = 1
FIRE	0	Fire = 0
REACTIVITY	0	Physical Hazard = 0

· **Hazard(s) not otherwise classified (HNOC):** None known

· **Classification according to (d)(1)(ii) of § 1910.1200**

The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.

· **Hazards not otherwise classified**

There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

* 3 Composition/Information on Ingredients

· **Non-hazardous components:**

CAS: 7647-14-5 RTECS: VZ4725000	Sodium chloride	2.4%
CAS: 7791-18-6	Magnesium Chloride	0.475%
CAS: 7447-40-7	Potassium chloride	0.00678%
CAS: 144-55-8	Sodium Bicarbonate	0.0196%
CAS: 10476-85-4	Strontium chloride	0.00243%
CAS: 7732-18-5	Water, distilled water, deionized water	96.48%

· **Chemical characterization: Substance**

· **Description:**

Mixture of substances listed with non-hazardous additions and/or components that are less than listing threshold. All non-hazardous, components listed under threshold, and listed component total 100%.

· **Dangerous Components:**

CAS: 7757-82-6	Sodium Sulphate	0.399%
CAS: 10043-52-4 RTECS: EV 9800000	Calcium chloride ⚠ Eye irritation 2A, H319	0.113%
CAS: 7758-02-3	Potassium Bromide ⚠ Eye irritation 2A, H319	0.00985%
CAS: 10043-35-3 RTECS: ED 4550000	boric acid ⚠ Reproductive toxicity 1B, H360	0.00243%
CAS: 7681-49-4	Sodium fluoride ⚠ Acute toxicity - oral 3, H301; ⚠ Skin irritation 2, H315; Eye irritation 2A, H319	0.000292%

(Contd. on page 3)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07

Date of issue: 05/08/2025

Revised on 05/08/2025

Trade Name: "Artificial Seawater" ASTM D 1141-98, Formula A, Table X1.1

· **Additional information:**

The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

4 First-Aid Measures

· **Description of first aid measures**

· **General information:** If symptoms persist, call a physician.

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** In case of contact, immediately flush skin with plenty of water

· **After eye contact:**

Check for and remove any contacted lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyeballs.

· **After swallowing:**

Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

· **Most important symptoms and effects, both acute and delayed:** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed:** Treat symptomatically.

5 Fire-Fighting Measures

· **Extinguishing media**

· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.

· **For safety reasons unsuitable extinguishing agents:** No further relevant information.

· **Special hazards arising from the substance or mixture:**

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

· **Advice for firefighters**

· **Special protective equipment for firefighters:**

As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.

* 6 Accidental Release Measures

· **Personal precautions, protective equipment and emergency procedures:**

Avoid contact with eyes, skin or clothing. Use appropriate protective equipment.

· **Environmental precautions:**

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

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

Dispose of the collected material according to regulations.

· **PAC-1:**

7791-18-6	Magnesium Chloride	34 mg/m ³
7757-82-6	Sodium Sulphate	9.8 mg/m ³
10043-52-4	Calcium chloride	12 mg/m ³
144-55-8	Sodium Bicarbonate	13 mg/m ³
7758-02-3	Potassium Bromide	9.2 mg/m ³
10476-85-4	Strontium chloride	8 mg/m ³
10043-35-3	boric acid	6 mg/m ³
7681-49-4	Sodium fluoride	0.34 mg/m ³

· **PAC-2:**

7791-18-6	Magnesium Chloride	370 mg/m ³
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(Contd. on page 4)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07

Date of issue: 05/08/2025

Revised on 05/08/2025

Trade Name: "Artificial Seawater" ASTM D 1141-98, Formula A, Table X1.1

7757-82-6	Sodium Sulphate	110 mg/m ³
10043-52-4	Calcium chloride	33 mg/m ³
144-55-8	Sodium Bicarbonate	140 mg/m ³
7758-02-3	Potassium Bromide	100 mg/m ³
10476-85-4	Strontium chloride	88 mg/m ³
10043-35-3	boric acid	23 mg/m ³
7681-49-4	Sodium fluoride	3.8 mg/m ³

· **PAC-3:**

7791-18-6	Magnesium Chloride	1,600 mg/m ³
7757-82-6	Sodium Sulphate	650 mg/m ³
10043-52-4	Calcium chloride	200 mg/m ³
144-55-8	Sodium Bicarbonate	840 mg/m ³
7758-02-3	Potassium Bromide	610 mg/m ³
10476-85-4	Strontium chloride	360 mg/m ³
10043-35-3	boric acid	830 mg/m ³
7681-49-4	Sodium fluoride	44 mg/m ³

· **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.

* 7 Handling and Storage

· **Precautions for safe handling:**

Avoid contact with eyes, skin or clothing. Use appropriate protective equipment.

· **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:**

Keep containers closed. Store away from oxidizing agents. Protect from extreme temperatures and humidity during storage.

· **Information about storage in one common storage facility:**

Store in accordance with local regulations. Store in original container, protected from direct sunlight. Keep container tightly closed and sealed until ready for use. Keep containers closed. Store away from oxidizing agents. Protect from extreme temperatures and humidity during storage.

· **Further information about storage conditions:** None.

· **Specific end use(s):** No further relevant information available.

* 8 Exposure Controls/Personal Protection

· **Control parameters:**

· **Components with occupational exposure limits:**

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

At this time, the other constituents have no known exposure limits.

7757-82-6 Sodium Sulphate

TLV	Short-term value: NIC-0.2 mg/m ³ thoracic fraction of aerosol
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(Contd. on page 5)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07

Date of issue: 05/08/2025

Revised on 05/08/2025

Trade Name: "Artificial Seawater" ASTM D 1141-98, Formula A, Table X1.1

- **Additional information:** The lists that were valid during the creation of this SDS were used as basis.
- **Exposure controls:**
- **Appropriate engineering controls** No further data; see section 7.
- **Personal protective equipment**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **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.

- **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 cannot 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 determined and observed by the manufacturer of the protective gloves.
- **Eye protection:**



Safety glasses

- **Limitation and supervision of exposure into the environment:** None

* 9 Physical and Chemical Properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Physical state** Liquid
- **Color:** Clear, Colorless
- **Odor:** Odorless
- **Odor threshold:** Not determined.
- **Melting point/Melting range:** Not determined.
- **Boiling point/Boiling range:** Not determined.
- **Flammability:** Not determined.
- **Explosion limits:**
- **Lower:** Not determined.
- **Upper:** Not determined.
- **Flash point:** None
- **Auto igniting:** Not applicable
- **Decomposition temperature:** Not determined.
- **pH-value:** Not determined.
- **Viscosity:**
- **Kinematic:** Not applicable.
- **Dynamic:** Not applicable.
- **Solubility in / Miscibility with:**
- **Water:** Soluble.
- **Partition coefficient (n-octanol/water):** Not determined.

(Contd. on page 6)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07

Date of issue: 05/08/2025

Revised on 05/08/2025

Trade Name: "Artificial Seawater" ASTM D 1141-98, Formula A, Table X1.1

· Vapor pressure:	Not applicable.
· Vapor pressure:	
· Density:	Not determined.
· Relative density:	Not determined.
· Vapor density:	Not applicable.
· Particle characteristics	Not determined.
· Other information:	
· Appearance:	
· Form:	Liquid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Product is not self-igniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Solvent content:	
· VOC content:	0.00 %
· Change in condition	
· Evaporation rate:	Not applicable.

* 10 Stability and Reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Product is stable under normal conditions.
- **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:**

10043-52-4 Calcium chloride

Oral	LD50	2,301 mg/kg (Rat)
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- **Primary irritant effect:**
- **On the skin:** No irritating effect.
- **On the eye:** Irritating effect.
- **Other information:**
Irritation of the eyes, skin and respiratory tract. Ingestion of large doses may cause gastro-intestinal distress and vomiting.
- **Additional toxicological information:** Harmful
- **Interactive effects** No interactive effects between components are known.
- **Carcinogenic categories:**
- **IARC (International Agency for Research on Cancer):**
Group 1 - Carcinogenic to humans
Group 2A - Probably carcinogenic to humans
Group 2B - Possibly carcinogenic to humans
Group 3 - Not classifiable as to its carcinogenicity to humans
Group 4 - Probably not carcinogenic to humans

7681-49-4	Sodium fluoride	
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(Contd. on page 7)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07

Date of issue: 05/08/2025

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Trade Name: "Artificial Seawater" ASTM D 1141-98, Formula A, Table X1.1

· **NTP (National Toxicology Program):**

None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

· **Alternative sources for toxicological information**

No non-standard sources for toxicological information where used.

12 Ecological Information

· **Toxicity:**

· **Aquatic toxicity:**

7757-82-6 Sodium Sulphate

EC50 | 2,564 mg/l (Water flea)

10043-52-4 Calcium chloride

EC50 | 2,400 mg/l (Water flea)

· **Persistence and degradability:** No further relevant information available.

· **Bioaccumulative potential:** No further relevant information available.

· **Mobility in soil:** No further relevant information available.

· **Results of PBT and vPvB assessment:**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects:**

· **Additional ecological information:**

· **General notes:** Not known to be hazardous to water.

13 Disposal Considerations

· **Waste treatment methods**

· **Recommendation:**

Observe all federal, state and local environmental regulations when disposing of this material.

· **Uncleaned packaging**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport Information

· **UN-Number:**

· **DOT, ADR/ADN, IMDG, IATA**

Non-Regulated Material

· **UN proper shipping name:**

· **DOT, ADR/ADN, IMDG, IATA**

Non-Regulated Material

· **Transport hazard class(es):**

· **DOT, ADR/ADN, ADN, IMDG, IATA**

· **Class:**

Non-Regulated Material

· **Packing group:**

· **DOT, ADR/ADN, IMDG, IATA**

Non-Regulated Material

· **Environmental hazards:**

Not applicable.

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:**

Not applicable.

· **Special precautions for user:**

Not applicable.

(Contd. on page 8)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07

Date of issue: 05/08/2025

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Trade Name: "Artificial Seawater" ASTM D 1141-98, Formula A, Table X1.1

· **UN "Model Regulation":** Non-Regulated Material

15 Regulatory Information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture:**

No further relevant information available.

· **SARA (Superfund Amendments and Reauthorization):**

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

None of the ingredients are listed.

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

None of the ingredients are listed.

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

7647-14-5	Sodium chloride	ACTIVE
7757-82-6	Sodium Sulphate	ACTIVE
10043-52-4	Calcium chloride	ACTIVE
7447-40-7	Potassium chloride	ACTIVE
144-55-8	Sodium Bicarbonate	ACTIVE
7758-02-3	Potassium Bromide	ACTIVE
10476-85-4	Strontium chloride	ACTIVE
10043-35-3	boric acid	ACTIVE
7681-49-4	Sodium fluoride	ACTIVE

· **Hazardous Air Pollutants**

None of the ingredients are listed.

· **California Proposition 65:**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

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

None of the ingredients are listed.

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

None of the ingredients are listed.

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

None of the ingredients are listed.

· **New Jersey Right-to-Know List:**

7681-49-4 Sodium fluoride

· **New Jersey Special Hazardous Substance List:**

7681-49-4 Sodium fluoride

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· **Pennsylvania Right-to-Know List:**

7757-82-6 Sodium Sulphate

7681-49-4 Sodium fluoride

· **Pennsylvania Special Hazardous Substance List:**

7757-82-6 Sodium Sulphate

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7681-49-4 Sodium fluoride

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(Contd. on page 9)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07

Date of issue: 05/08/2025

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Trade Name: "Artificial Seawater" ASTM D 1141-98, Formula A, Table X1.1

· **Carcinogenic categories:**

· **EPA (Environmental Protection Agency):**

10043-35-3	boric acid	I (oral)
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· **TLV (Threshold Limit Value established by ACGIH):**

10043-35-3	boric acid	A4
7681-49-4	Sodium fluoride	A4

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

None of the ingredients are listed.

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms:**



· **Signal word:** Warning

· **Hazard statements:**

H302 Harmful if swallowed.
H315+H320 Causes skin and eye irritation.

· **Precautionary statements:**

P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves.
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
P330 Rinse mouth.
P302+P352 If on skin: Wash with plenty of water.
P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P337+P313 If eye irritation persists: Get medical advice/attention.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

The product is not subject to be labelled according with the prevailing version of the regulations on hazardous substances.

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

16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

- **Date of previous version** 05/08/2025
- **Version number of previous version:** 1
- **Date of preparation** 05/08/2025

(Contd. on page 10)

Safety Data Sheet

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2024 and GHS Rev 07

Date of issue: 05/08/2025

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Trade Name: "Artificial Seawater" ASTM D 1141-98, Formula A, Table X1.1

· **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
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 and Health
OSHA: Occupational Safety & Health Administration
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute toxicity - oral 3: Acute toxicity – Category 3
Acute toxicity - oral 4: Acute toxicity – Category 4
Skin irritation 2: Skin corrosion/irritation – Category 2
Eye irritation 2A: Serious eye damage/eye irritation – Category 2A
Eye irritation 2B: Serious eye damage/eye irritation – Category 2B
Reproductive toxicity 1B: Reproductive toxicity – Category 1B

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

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