

SAFETY DATA SHEET

According to JIS Z 7253:2019
Revision date 13-May-2024
Revision Number 1.02

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name	Artificial Seawater (2-Amino-2-hydroxymethyl-1,3-propanediol)
Product Code	017-28191,013-28193

Supplier FUJIFILM Wako Pure Chemical Corporation
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Recommended uses For research use only

Restrictions on use Seek expert judgment when using for purposes other than those recommended.

Section 2: HAZARDS IDENTIFICATION

GHS classification

Classification of the substance or mixture

Not a hazardous substance or mixture according to the Globally Harmonized System (GHS)

Pictograms

Signal word None

Hazard statements

Not a hazardous substance or mixture according to the Globally Harmonized System (GHS)

Precautionary statements-(Prevention)

- Not applicable

Precautionary statements-(Response)

- Not applicable

Precautionary statements-(Storage)

- Not applicable

Precautionary statements-(Disposal)

- Not applicable

Others

Other hazards Not available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Mixture

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
Water	95.59	18.02	-	-	7732-18-5
Sodium Chloride	2.3	58.44	(1)-236	*	7647-14-5
2-Amino-2-hydroxymethyl-1,3-propanediol	0.97	121.14	(2)-318	*	77-86-1
Magnesium chloride hexahydrate	0.52	203.30	(1)-233	*	7791-18-6
Sodium Sulfate	0.42	142.04	(1)-501	*	7757-82-6

Calcium chloride	0.12	110.98	(1)-176	*	10043-52-4
Potassium Chloride	0.080	74.55	(1)-228	*	7447-40-7

Note on ISHL No.: * in the table means announced chemical substances.

Section 4: FIRST AID MEASURES

Inhalation

Remove to fresh air. If symptoms persist, call a physician.

Skin contact

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

Ingestion

Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Protection of first-aiders

Use personal protective equipment as required.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Unsuitable extinguishing media

No information available

Specific hazards arising from the chemical product

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Special extinguishing method

No information available

Special protective actions for fire-fighters

Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

Environmental precautions

To be careful not discharged to the environment without being properly handled waste water contaminated.

Methods and materials for contaminant and methods and materials for cleaning up

Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

Recoverly, neutralization

No information available

Secondary disaster prevention measures

Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE

Handling

Technical measures

Use with local exhaust ventilation.

Precautions

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

Safety handling precautions

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Storage

Safe storage conditions

Storage conditions

Store away from sunlight in well-ventilated place at room temperature (under 25 °C).
Keep container tightly closed.

Safe packaging material

Polyethylene

Incompatible substances

No information available

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Personal protective equipment

Respiratory protection

Protective mask

Hand protection

chemical protective gloves (JIS T 8116)

Eye protection

protective eyeglasses or chemical safety goggles (JIS T 8147)

Skin and body protection

Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

If this product is classified as "Chemical Substances Hazardous to Skin, etc.", use appropriate protective equipment to them.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form

Color

colorless

Turbidity

clear

Appearance

liquid

Odor

no data available

Melting point/freezing point

no data available

Boiling point, initial boiling point and boiling range

no data available

Flammability

no data available

Evaporation rate:

no data available

Flammability (solid, gas):

no data available

Upper/lower flammability or explosive limits

Upper:

no data available

Lower:

no data available

Flash point

no data available

Auto-ignition temperature:

no data available

Decomposition temperature:

no data available

pH

no data available

Viscosity (coefficient of viscosity)

no data available

Dynamic viscosity

no data available

Solubilities

water : miscible .

n-Octanol/water partition coefficient:(log Pow)

no data available

Vapour pressure	no data available
Specific Gravity / Relative density	no data available
Vapour density	no data available
Particle characteristics	no data available

Section 10: STABILITY AND REACTIVITY

Stability

Reactivity	no data available
Chemical stability	Stable under recommended storage conditions.
Hazardous reactions	None under normal processing
Conditions to avoid	Extremes of temperature and direct sunlight
Incompatible materials	No information available
Hazardous decomposition products	Nitrogen oxides (NOx), Sulfur oxides (SOx), Metal oxides

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium Sulfate	> 10000 mg/kg (Rat)	N/A	> 2.4 mg/L (Rat) 4 h
Calcium chloride	1,940 mg/kg (Rat, Female)	>5,000 mg/kg (Rabbit)	N/A

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
Sodium Sulfate	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Calcium chloride	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Chemical Name	Acute toxicity -inhalation vapor- source information	Acute toxicity -inhalation dust- source information	Acute toxicity -inhalation mist- source information
Sodium Sulfate	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Calcium chloride	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Skin irritation/corrosion

Chemical Name	Skin corrosion/irritation source information
Sodium Sulfate	Based on the NITE GHS classification results.
Calcium chloride	Based on the NITE GHS classification results.

Serious eye damage/ irritation

Chemical Name	Serious eye damage/irritation source information
Sodium Sulfate	Based on the NITE GHS classification results.
Calcium chloride	Based on the NITE GHS classification results.

Respiratory or skin sensitization

Chemical Name	Respiratory or Skin sensitization source information
Sodium Sulfate	Based on the NITE GHS classification results.
Calcium chloride	Based on the NITE GHS classification results.

Reproductive cell mutagenicity

Chemical Name	germ cell mutagenicity source information
Sodium Sulfate	Based on the NITE GHS classification results.
Calcium chloride	Based on the NITE GHS classification results.

Carcinogenicity

Chemical Name	Carcinogenicity source information
Sodium Sulfate	Based on the NITE GHS classification results.
Calcium chloride	Based on the NITE GHS classification results.

Reproductive toxicity

Chemical Name	Reproductive toxicity source information
Sodium Sulfate	Based on the NITE GHS classification results.
Calcium chloride	Based on the NITE GHS classification results.

STOT-single exposure

Chemical Name	STOT -single exposure- source information
Sodium Sulfate	Based on the NITE GHS classification results.
Calcium chloride	Based on the NITE GHS classification results.

STOT-repeated exposure

Chemical Name	STOT -repeated exposure- source information
Sodium Sulfate	Based on the NITE GHS classification results.
Calcium chloride	Based on the NITE GHS classification results.

Aspiration hazard

Chemical Name	Aspiration Hazard source information
Sodium Sulfate	Based on the NITE GHS classification results.
Calcium chloride	Based on the NITE GHS classification results.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Sodium Chloride	N/A	LC50 : <i>Lepomis macrochirus</i> 5560 - 6080 mg/L 96 h LC50 : <i>Lepomis macrochirus</i> 12946 mg/L 96 h LC50 : <i>Pimephales promelas</i> 6020 - 7070 mg/L 96 h LC50 : <i>Pimephales promelas</i> 7050 mg/L 96 h LC50 : <i>Pimephales promelas</i> 6420 - 6700 mg/L 96 h LC50 : <i>Oncorhynchus mykiss</i> 4747 - 7824 mg/L 96 h	EC50 : <i>Daphnia magna</i> 1000 mg/L 48 h EC50 : <i>Daphnia magna</i> 340.7 - 469.2 mg/L 48 h
Sodium Sulfate	EC50 : <i>Selenastrum capricornutum</i> 1584.583 mg/L 72 h	LC50 : Fathead minnow 7960 mg/L 96 h	EC50 : <i>Ceriodaphnia dubia</i> 3150.21 mg/L 48 h
Calcium chloride	N/A	LC50 : <i>Lepomis macrochirus</i> 10650 mg/L 96 h	LC50 : <i>Daphnia magna</i> 2280000 - 3948000 µg/L 48 h
Potassium Chloride	EC50 : <i>Desmodesmus subspicatus</i> 2500 mg/L 72 h	LC50 : <i>Lepomis macrochirus</i> 1060 mg/L 96 h LC50 : <i>Pimephales promelas</i> 750 - 1020mg/L 96 h	EC50 : <i>Daphnia magna</i> 825 mg/L 48 h EC50 : <i>Daphnia magna</i> 83 mg/L 48 h

Other data

Chemical Name	Short-term (acute) hazardous to the aquatic environment source information	Long-term (chronic) hazardous to the aquatic environment source information
Sodium Sulfate	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Calcium chloride	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Persistence and degradability	No information available
Bioaccumulative potential	No information available
Mobility in soil	No information available
Hazard to the ozone layer	No information available

Section 13: DISPOSAL CONSIDERATIONS

Waste from residues

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated container and contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION

ADR/RID	Not regulated
UN number	-
Proper shipping name:	
UN classification	
Subsidiary hazard class	
Packing group	
Marine pollutant	Not applicable
IMDG	Not regulated
UN number	-
Proper shipping name:	
UN classification	
Subsidiary hazard class	
Packing group	
Marine pollutant (Sea)	Not applicable
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available
IATA	Not regulated
UN number	-
Proper shipping name:	
UN classification	
Subsidiary hazard class	
Packing group	
Environmentally Hazardous Substance	Not applicable

Section 15: REGULATORY INFORMATION

Japanese regulations

Fire Service Act	Not applicable
Poisonous and Deleterious Substances Control Law	Not applicable
Industrial Safety and Health Act	Not applicable
Regulations for the carriage and storage of dangerous goods in ship	Not applicable
Civil Aeronautics Law	Not applicable
Pollutant Release and Transfer Register Law (2023.4.1-)	Not applicable
Export Trade Control Order	Not applicable

Section 16: OTHER INFORMATION**Key literature references and sources for data etc.**

NITE: National Institute of Technology and Evaluation (JAPAN)
://www.chem-info.nite.go.jp/chem/chrip/chrip_search/systemTop
IATA dangerous Goods Regulations
RTECS:Registry of Toxic Effects of Chemical Substances
Japan Industrial Safety and Health Association GHS Model SDS
Dictionary of Synthetic Organic Chemistry, SSOCJ, Koudansha Scientific Co.Ltd.
Chemical Dictionary, Kyouritsu Publishing Co., Ltd.
etc

Record of SDS revisions

The following contents were revised. Product and company Identification.
Composition/information on ingredients. Handling and storage. Exposure
controls/personal protection. Stability and reactivity. Toxicological information. Ecological
information. Regulatory information.

Disclaimer

This SDS is according to JIS Z 7253: 2019. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

GHS Classification is according to JIS Z 7252:2019. *JIS: Japanese Industrial Standards

End of Safety Data Sheet