SAFETY DATA SHEET
SYNTHETIC SEA WATER (ASTM D1141-98)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name
SYNTHETIC SEA WATER (ASTM D1141-98)

Product number
2813

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses
General chemical reagent

Uses advised against
Processes involving incompatible materials.

1.3. Details of the supplier of the safety data sheet

Supplier
Reagent Chemical Services
11b - 13 Aston Fields Road
Whitehouse Industrial Estate
Runcorn
Cheshire WA7 3DL
T: 01928 716903 (08.30 - 17.00)
F: 01928 716425
E: info@reagent.co.uk

1.4. Emergency telephone number

Emergency telephone
OHES Environmental Ltd 24-7
Tel. 0333 333 9939 (24 hour)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards
Not Classified

Health hazards
Not Classified

Environmental hazards
Not Classified

Human health
Not classified for health effects. Contains boric acid and sodium fluoride in very low concentrations. Sodium fluoride has a Workplace Exposure Limit (WEL).

Environmental
The product is not expected to be hazardous to the environment.

Physicochemical
Exothermic reactions possible.

2.2. Label elements

Hazard statements
NC Not Classified

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.
## SYNDTHETIC SEA WATER (ASTM D1141-98)

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
<th>CAS Number</th>
<th>EC Number</th>
<th>REACH Registration Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM CHLORIDE</td>
<td>1-5%</td>
<td>7647-14-5</td>
<td>231-598-3</td>
<td>01-2119489796-13-0000</td>
</tr>
<tr>
<td>Classification</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAGNESIUM CHLORIDE HEXAHYDRATE</td>
<td>1-5%</td>
<td>7791-18-6</td>
<td>616-575-1</td>
<td></td>
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<tr>
<td>Classification</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SODIUM SULPHATE</td>
<td>&lt;1%</td>
<td>7757-82-6</td>
<td>231-820-9</td>
<td>01-2119519226-43-0000</td>
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<tr>
<td>Classification</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CALCIUM CHLORIDE DIHYDRATE</td>
<td>&lt;1%</td>
<td>10035-04-8</td>
<td>233-140-8</td>
<td>01-2119494219-28-0000</td>
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<tr>
<td>Classification</td>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2 - H319</td>
</tr>
<tr>
<td>POTASSIUM CHLORIDE</td>
<td>&lt;1%</td>
<td>7447-40-7</td>
<td>231-211-8</td>
<td>01-2119539416-36-0000</td>
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<tr>
<td>Classification</td>
<td></td>
<td></td>
<td></td>
<td>Classification (67/548/EEC or 1999/45/EC)</td>
</tr>
<tr>
<td>SODIUM HYDROGEN CARBONATE</td>
<td>&lt;1%</td>
<td>144-55-8</td>
<td>205-633-8</td>
<td>01-2119457606-32-XXXX</td>
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<td>Classification</td>
<td></td>
<td></td>
<td></td>
<td>Classification (67/548/EEC or 1999/45/EC)</td>
</tr>
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SYNTHETIC SEA WATER (ASTM D1141-98)

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
<th>CAS number</th>
<th>EC number</th>
<th>REACH registration number</th>
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</thead>
<tbody>
<tr>
<td>POTASSIUM BROMIDE</td>
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<td>7758-02-3</td>
<td>231-830-3</td>
<td>01-2119662195-33-0000</td>
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<tr>
<td>STRONTIUM CHLORIDE HEXAHYDRATE</td>
<td>&lt;1%</td>
<td>10025-70-4</td>
<td>233-971-6</td>
<td>01-2119976354-29-0000</td>
</tr>
<tr>
<td>BORIC ACID</td>
<td>&lt;1%</td>
<td>10043-35-3</td>
<td>233-139-2</td>
<td>01-2119486683-25-0000</td>
</tr>
<tr>
<td>SODIUM FLUORIDE</td>
<td>&lt;1%</td>
<td>7681-49-4</td>
<td>231-667-8</td>
<td>01-2119539420-47-0000</td>
</tr>
</tbody>
</table>

Classification

Not Classified

Classification (67/548/EEC or 1999/45/EC)

Eye Dam. 1 - H318

Inhalation

Remove from exposure. Get medical attention if any discomfort continues. Unlikely route of exposure as the product does not contain volatile substances.

Ingestion

Rinse mouth thoroughly with water. Get medical attention if any discomfort continues.

Skin contact

Rinse with water. Get medical attention if any discomfort continues.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General Information

Although not classified as hazardous, any actions should be appropriate to handling incidents involving chemicals. The following information is given as general first aid advice. CAUTION! First aid personnel must be aware of own risk during rescue! Always consider any dangers in the vicinity before approaching to treat the casualty. First aid personnel must protect themselves with all necessary personal protective equipment during the assistance of casualties. When breathing is difficult, properly trained personnel may assist the casualty by administering oxygen. Check airway for any blockages. Place unconscious person on the side in the recovery position and ensure breathing can take place. Never give anything by mouth to an unconscious person. If breathing has stopped perform CPR. If medical assistance is needed take as much detail as possible about the incident and hazardous materials involved with the casualty.

Inhalation

Remove from exposure. Get medical attention if any discomfort continues. Unlikely route of exposure as the product does not contain volatile substances.

Ingestion

Rinse mouth thoroughly with water. Get medical attention if any discomfort continues.

Skin contact

Rinse with water. Get medical attention if any discomfort continues.
SYNTHETIC SEA WATER (ASTM D1141-98)

Eye contact
If any discomfort occurs wash with plenty of water, remove any contact lenses if possible. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

General information
The product contains boric acid which is classed as toxic to reproduction and may cause damage to fertility or the unborn child. The concentration is below the threshold limit. Sodium fluoride is in the mixture at very low levels (0.0003%). Although classified as non-hazardous, the following are given as possible effects.

Inhalation
May irritate

Ingestion
May cause discomfort if swallowed. Nausea

Skin contact
Prolonged or repeated skin contact may cause skin irritation.

Eye contact
May cause eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
The product is non-combustible. Use fire-extinguishing media suitable for the surrounding fire. Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media
Do not use water jet as this can spread the fire. Do not use carbon dioxide in enclosed spaces with insufficient ventilation.

5.2. Special hazards arising from the substance or mixture

Specific hazards
In case of fire, irritating vapours or mists may be formed. No unusual fire or explosion hazards noted.

Hazardous combustion products
The product is not combustible but may decompose in the event of a fire.

5.3. Advice for firefighters

Protective actions during firefighting
Evacuate and keep non-emergency personnel away from the fire area until it is properly extinguished with no danger of re-ignition. Prevent run-off from entering drains and watercourses. Plastic containers may melt in the heat of a fire. Be aware of dangers from other hazardous substances in the immediate area.

Special protective equipment for firefighters
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
Wear protective clothing as described in Section 8 of this safety data sheet. No special emergency procedures are needed for this product.

6.2. Environmental precautions

Environmental precautions
Non-hazardous product. Avoid discharge to freshwater bodies.

6.3. Methods and material for containment and cleaning up
SYNTHETIC SEA WATER (ASTM D1141-98)

Methods for cleaning up
If disposal to drain is not allowed, absorb spillage with inert material and collect in sealed containers. Dispose through an authorised chemical waste company. Be aware of the potential for surfaces to become slippery. Ventilate area and allow to dry before allowing access.

6.4. Reference to other sections
Refer to sections 8 and 13 for additional information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Usage precautions
Avoid spilling the product. Avoid ingestion of the product, inhalation of any vapours/mists when produced and contact with skin and eyes. Do not eat, drink or smoke when handling. Wash at the end of each work shift, before eating, drinking, smoking and using the toilet. Do not mix with incompatible substances or mixtures.

7.2. Conditions for safe storage, including any incompatibilities
Storage precautions
Store away from heat, direct sunlight and moisture. Avoid freezing conditions. It is advisable to store between 15 and 25C.

Storage class
Chemical storage.

7.3. Specific end use(s)
Specific end use(s)
The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters
Occupational exposure limits

SODIUM FLUORIDE
Long-term exposure limit (8-hour TWA): WEL 2.5 (inorganic, as F) mg/m³
WEL = Workplace Exposure Limit

DNEL
No information available for DNEL of the mixture.

PNEC
No information available for PNEC of the mixture.

SODIUM CHLORIDE (CAS: 7647-14-5)

<table>
<thead>
<tr>
<th>DNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workers - Inhalation; Long term systemic effects: 2068.62 mg/m³</td>
</tr>
<tr>
<td>Workers - Inhalation; Short term systemic effects: 2068.62 mg/m³</td>
</tr>
<tr>
<td>Workers - Dermal; Long term systemic effects: 295.52 mg/kg/day</td>
</tr>
<tr>
<td>Workers - Dermal; Short term systemic effects: 295.52 mg/kg/day</td>
</tr>
<tr>
<td>General population - Inhalation; Long term systemic effects: 443.28 mg/m³</td>
</tr>
<tr>
<td>General population - Inhalation; Short term systemic effects: 443.28 mg/m³</td>
</tr>
<tr>
<td>General population - Dermal; Long term systemic effects: 126.65 mg/kg/day</td>
</tr>
<tr>
<td>General population - Dermal; Short term systemic effects: 126.65 mg/kg/day</td>
</tr>
<tr>
<td>General population - Oral; Long term systemic effects: 126.65 mg/kg/day</td>
</tr>
<tr>
<td>General population - Oral; Short term systemic effects: 126.65 mg/kg/day</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PNEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Fresh water; 5 mg/l</td>
</tr>
<tr>
<td>- STP; 500 mg/l</td>
</tr>
<tr>
<td>- Soil; 4.86 mg/kg</td>
</tr>
</tbody>
</table>

POTASSIUM CHLORIDE (CAS: 7447-40-7)
SYNTHETIC SEA WATER (ASTM D1141-98)

**DNEL**
Workers - Inhalation; Long term systemic effects: 1064 mg/m³
Workers - Inhalation; Short term systemic effects: 5320 mg/m³
Workers - Dermal; Long term systemic effects: 303 mg/kg/day
Workers - Dermal; Short term systemic effects: 910 mg/kg/day
General population - Inhalation; Long term systemic effects: 273 mg/m³
General population - Inhalation; Short term systemic effects: 1365 mg/m³
General population - Dermal; Long term systemic effects: 182 mg/kg/day
General population - Dermal; Short term systemic effects: 910 mg/kg/day
General population - Oral; Long term systemic effects: 91 mg/kg/day
General population - Oral; Short term systemic effects: 455 mg/kg/day

**PNEC**
- Fresh water; 0.1 mg/l
- Marine water; 0.1 mg/l
- STP; 10 mg/l

**SODIUM HYDROGEN CARBONATE (CAS: 144-55-8)**
No information available for DNEL.
No information available for PNEC.

**BORIC ACID (CAS: 10043-35-3)**

**DNEL**
Workers - Inhalation; Long term systemic effects: 8.3 mg/m³
Workers - Dermal; Long term systemic effects: 392 mg/kg
General population - Inhalation; Long term systemic effects: 4.15 mg/m³
General population - Dermal; Long term systemic effects: 196 mg/kg
General population - Oral; Long term systemic effects: 0.98 mg/kg/day
General population - Oral; Short term systemic effects: 0.98 mg/kg/day

**PNEC**
- Fresh water; 2.9 mg/l
- Marine water; 2.9 mg/l
- Intermittent release; 13.7 mg/l
- STP; 10 mg/l
- Soil; 5.7 mg/kg

8.2. Exposure controls

**Appropriate engineering controls**
Provide adequate ventilation.

**Eye/face protection**
Wear safety glasses. It is recommended that eye protection conforms to EN 166.

**Hand protection**
Wear protective gloves. Rubber or plastic. Disposable gloves may be adequate for the situation. Be aware that latex gloves can produce an allergic reaction in sensitive individuals. Gloves should carry the CE mark and conform to BS EN 374, chemicals and micro-organisms.

**Other skin and body protection**
Although classified as non-hazardous it is advisable to wear clothing suitable for handling chemicals. Wear suitable protective clothing during transport, handling and storage operations connected with the product. Wear suitable protective footwear to prevent contamination and to reduce the risk of slipping. Consult with the supplier as to the compatibility of protective clothing and footwear.

**Hygiene measures**
Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Promptly remove any clothing that becomes wet or contaminated. When using do not eat, drink or smoke.
SYNTHETIC SEA WATER (ASTM D1141-98)

Respiratory protection
No specific recommendations. Respiratory protection may be required if excessive airborne contamination occurs.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid.</td>
</tr>
<tr>
<td>Colour</td>
<td>Colourless.</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless.</td>
</tr>
<tr>
<td>pH</td>
<td>pH (concentrated solution): pH 8.2 - 8.3 @ 20°C</td>
</tr>
<tr>
<td>Melting point</td>
<td>Approx. 0°C</td>
</tr>
<tr>
<td>Initial boiling point and range</td>
<td>Approx. 100°C @</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not relevant. The mixture is non-flammable.</td>
</tr>
<tr>
<td>Relative density</td>
<td>Approx. 1.0 @ °C</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Miscible with water.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not relevant. The mixture is non-flammable.</td>
</tr>
</tbody>
</table>

9.2. Other information
All available information has been included in section 9.1.

SECTION 10: Stability and reactivity

10.1. Reactivity
Reactivity
There are no known reactivity hazards associated with this product. Can react exothermically.

10.2. Chemical stability
Stability
Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions
Possibility of hazardous reactions
Due to the aqueous portion the product can react exothermically with acids. May react exothermically with alkalis. Will not polymerise.

10.4. Conditions to avoid
Conditions to avoid
Avoid heat, direct sunlight and moisture. Avoid storage in freezing conditions. Avoid contact with any incompatible materials.

10.5. Incompatible materials
Materials to avoid
As a general precaution avoid mixing with other chemical products.

10.6. Hazardous decomposition products
Hazardous decomposition products
Does not decompose when used and stored as recommended.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Toxicological effects
The mixture contains boric acid at 0.003% and sodium fluoride at 0.0003%. No toxic effects are anticipated from these components.
SYNTHETIC SEA WATER (ASTM D1141-98)

General information

The product is classed as non-hazardous, the following information is given as general advice.

Inhalation

Very high concentrations of vapours may cause slight irritation.

Ingestion

Small amounts can cause a feeling of nausea, larger amounts may produce vomiting.

Skin contact

May cause irritation on prolonged or repeated contact.

Eye contact

May cause temporary eye irritation.

Acute and chronic health hazards

Although not classified as hazardous, the product should be treated with the care and attention appropriate to chemicals.

SODIUM CHLORIDE

Toxicological effects

The product is not classified for toxicological properties.

General information

No specific health hazards known. The product is classed as non-hazardous, the following information is given as general advice.

Inhalation

Dust may irritate the respiratory system. Symptoms following overexposure may include the following: Coughing.

Ingestion

Nausea, vomiting.

Skin contact

May cause irritation on prolonged or repeated contact.

Eye contact

Irritating to eyes.

Acute and chronic health hazards

Although not classified as hazardous, the product should be treated with the care and attention appropriate to chemicals.

MAGNESIUM CHLORIDE HEXAHYDRATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,000.0

Species Rat

ATE oral (mg/kg) 5,000.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5,000.0

Species Rabbit

ATE dermal (mg/kg) 5,000.0

Acute toxicity - Inhalation

Notes (inhalation LC₅₀) No specific test data are available.

Skin corrosion/irritation

Based on available data the classification criteria are not met.

Serious eye damage/irritation
SYNTHETIC SEA WATER (ASTM D1141-98)

Serious eye damage/irritation
Based on available data the classification criteria are not met.

Respiratory sensitisation
Based on available data the classification criteria are not met.

Skin sensitisation
Based on available data the classification criteria are not met.

Germ cell mutagenicity
Based on available data the classification criteria are not met.

Genotoxicity - in vitro
Based on available data the classification criteria are not met.

Genotoxicity - in vivo
Based on available data the classification criteria are not met.

Carcinogenicity
There is no evidence that the product can cause cancer.

Reproductive toxicity
Based on available data the classification criteria are not met.

Reproductive toxicity - fertility
This substance has no evidence of toxicity to reproduction.

Reproductive toxicity - development

Specific target organ toxicity - single exposure
STOT - single exposure
Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure
STOT - repeated exposure
Based on available data the classification criteria are not met.

Aspiration hazard
Aspiration hazard
Not anticipated to present an aspiration hazard, based on chemical structure.

General information
No specific health hazards known.

Inhalation
May cause discomfort.

Ingestion
Stomach pain. Nausea, vomiting.

Skin contact
May cause irritation.

Eye contact
May irritate eyes.

Acute and chronic health hazards
No specific long-term effects known.

Route of entry
Not specific

Target organs
No specific target organs known.

POTASSIUM CHLORIDE

Toxicological effects
Not regarded as a health hazard under current legislation.

Acute toxicity - oral
Acute toxicity oral (LD₅₀ mg/kg)
3,020.0
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Rat</td>
</tr>
<tr>
<td>Notes (oral LD₅₀)</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>ATE oral (mg/kg)</td>
<td>3,020.0</td>
</tr>
<tr>
<td>Acute toxicity - dermal</td>
<td>Notes (dermal LD₅₀) Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not irritating.</td>
</tr>
<tr>
<td>Animal data</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Respiratory sensitisation</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Skin sensitisation</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Genotoxicity - in vitro</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Genotoxicity - In vivo</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>IARC carcinogenicity</td>
<td>None of the ingredients are listed or exempt.</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Reproductive toxicity - fertility</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Reproductive toxicity - development</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Specific target organ toxicity - single exposure</td>
<td>Not classified as a specific target organ toxicant after a single exposure.</td>
</tr>
<tr>
<td>STOT - single exposure</td>
<td>Not classified as a specific target organ toxicant after repeated exposure.</td>
</tr>
<tr>
<td>Specific target organ toxicity - repeated exposure</td>
<td>Not classified as a specific target organ toxicant after repeated exposure.</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not relevant. Solid.</td>
</tr>
<tr>
<td>General information</td>
<td>No specific health hazards known. Dust may irritate the eyes and the respiratory system. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.</td>
</tr>
</tbody>
</table>
SYNTHETIC SEA WATER (ASTM D1141-98)

Inhalation  Dust may irritate the respiratory system. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.

Ingestion  May cause discomfort if swallowed. May cause stomach pain or vomiting.

Skin contact  Prolonged contact may cause dryness of the skin.

Eye contact  Dust may cause slight irritation.

Route of entry  Ingestion  Inhalation  Skin and/or eye contact

Target organs  No specific target organs known.

SODIUM HYDROGEN CARBONATE

Toxicological effects  The product is not classified for toxicological properties.

Acute toxicity - inhalation

Notes (inhalation LC₅₀)  Actual exposure = 4.5 hours

General information  No specific health hazards known. The product is classed as non-hazardous, the following information is given as general advice.

Inhalation  Dust may irritate the respiratory system. Symptoms following overexposure may include the following: Coughing.

Ingestion  May cause nausea and vomiting.

Skin contact  May cause irritation on prolonged or repeated contact.

Eye contact  May cause temporary eye irritation.

POTASSIUM BROMIDE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg)  5,000.0

Species  Rat

ATE oral (mg/kg)  5,000.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg)  5,000.0

Species  Rabbit

ATE dermal (mg/kg)  5,000.0

General information  Known or suspected mutagen.

Acute and chronic health hazards  Pregnant women should not be exposed to this substance. Although not classified as hazardous, the product should be treated with the care and attention appropriate to chemicals.

BORIC ACID

Acute toxicity - oral
SYNTHETIC SEA WATER (ASTM D1141-98)

Acute toxicity oral (LD₅₀ mg/kg)  2,660.0
Species  Rat
ATE oral (mg/kg)  2,660.0
Acute toxicity - dermal
Notes (dermal LD₅₀)  No specific test data are available.

Acute toxicity - inhalation
Notes (inhalation LC₅₀)  No specific test data are available.

Skin corrosion/irritation
Skin corrosion/irritation  Based on available data the classification criteria are not met.

Serious eye damage/irritation
Serious eye damage/irritation  Based on available data the classification criteria are not met.

Respiratory sensitisation
Respiratory sensitisation  Based on available data the classification criteria are not met.

Skin sensitisation
Skin sensitisation  Based on available data the classification criteria are not met.

Germ cell mutagenicity
Genotoxicity - In vitro  Based on available data the classification criteria are not met.
Genotoxicity - In vivo  Based on available data the classification criteria are not met.

Carcinogenicity
Carcinogenicity  Based on available data the classification criteria are not met.

Reproductive toxicity
Reproductive toxicity - fertility  Suspected of damaging fertility.
Reproductive toxicity - development  May damage the unborn child.

Specific target organ toxicity - single exposure
STOT - single exposure  No specific test data are available.

Specific target organ toxicity - repeated exposure
STOT - repeated exposure  No specific test data are available.

Aspiration hazard
Aspiration hazard  Not anticipated to present an aspiration hazard, based on chemical structure.

SECTION 12: Ecological Information

Ecotoxicity  Although not classified as environmentally hazardous, harmful effects cannot be excluded in the event of improper handling or disposal.

SODIUM CHLORIDE
SYNTHETIC SEA WATER (ASTM D1141-98)

Ecotoxicity

Although not classified as environmentally hazardous, harmful effects cannot be excluded in the event of improper handling or disposal.

MAGNESIUM CHLORIDE HEXAHYDRATE

Ecotoxicity

The product is not expected to be hazardous to the environment.

POTASSIUM CHLORIDE

Ecotoxicity

Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

SODIUM HYDROGEN CARBONATE

Ecotoxicity

The product is not expected to be hazardous to the environment.

POTASSIUM BROMIDE

Ecotoxicity

Although not classified as environmentally hazardous, harmful effects cannot be excluded in the event of improper handling or disposal.

BORIC ACID

Ecotoxicity

The product is not expected to be hazardous to the environment.

12.1. Toxicity

Toxicity

Due to the dilute composition of the mixture no harmful effects are anticipated. This is approximately the same as natural sea water.

SODIUM CHLORIDE

Acute toxicity - fish

\( LC_{95} \), 96 hours: 5840 mg/l, Lepomis macrochirus (Bluegill)

Acute toxicity - aquatic invertebrates

\( LC_{95} \), 48 hours: 874 mg/l, Daphnia magna

Chronic toxicity - fish early life stage

\( LOEC \), 33 days: 352 mg/l, Pimephales promelas (Fat-head Minnow)

MAGNESIUM CHLORIDE HEXAHYDRATE

Acute toxicity - fish

No specific test data are available.

Acute toxicity - aquatic invertebrates

No specific test data are available.

Acute toxicity - aquatic plants

Not determined.

POTASSIUM CHLORIDE

Toxicity

Based on available data the classification criteria are not met.

Acute toxicity - fish

\( LC_{95} \), 96 hours: 880 mg/l, Pimephales promelas (Fat-head Minnow)

Acute toxicity - aquatic invertebrates

\( EC_{50} \), 48 hours: >440 mg/l, Daphnia magna
SYNTHETIC SEA WATER (ASTM D1141-98)

<table>
<thead>
<tr>
<th>Substance</th>
<th>Acute toxicity - aquatic plants</th>
<th>Acute toxicity - fish</th>
<th>Acute toxicity - aquatic invertebrates</th>
<th>Chronic toxicity - aquatic invertebrates</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYNTHETIC SEA WATER (ASTM D1141-98)</td>
<td>$EC_{50}$, 72 hours: 100 mg/l, Desmodesmus subspicatus</td>
<td>$NOEC$, 96 hours: 5200 mg/l, Lepomis macrochirus (Bluegill) Flow through, freshwater.</td>
<td>$NOEC$, 48 hours: 3100 mg/l, Daphnia magna Mobility.</td>
<td>$NOEC$, 21 days: 576 mg/l, Daphnia magna Freshwater, semi-static.</td>
</tr>
<tr>
<td>SODIUM HYDROGEN CARBONATE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute toxicity - fish</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute toxicity - aquatic invertebrates</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic toxicity - aquatic invertebrates</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**12.2. Persistence and degradability**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Stability (hydrolysis)</th>
<th>Biodegradation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM HYDROGEN CARBONATE</td>
<td>Not applicable.</td>
<td>The product contains mainly inorganic substances which are not biodegradable.</td>
</tr>
<tr>
<td>SODIUM CHLORIDE</td>
<td>Scientifically unjustified.</td>
<td>Technically not feasible.</td>
</tr>
<tr>
<td>MAGNESIUM CHLORIDE HEXAHYDRATE</td>
<td>There are no data on the degradability of this product.</td>
<td></td>
</tr>
<tr>
<td>POTASSIUM CHLORIDE</td>
<td>The product contains inorganic substances which are not biodegradable.</td>
<td></td>
</tr>
</tbody>
</table>

**BORIC ACID**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Acute toxicity - fish</th>
<th>Acute toxicity - aquatic invertebrates</th>
<th>Acute toxicity - aquatic plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - fish</td>
<td>$LC_{50}$, 96 hours: 279 mg/l, Freshwater fish</td>
<td>$EC_{50}$, 48 hours: 133 mg/l, Daphnia magna</td>
<td>Not known.</td>
</tr>
</tbody>
</table>

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SYNTHETIC SEA WATER (ASTM D1141-98)

Persistence and degradability

There are no data on the degradability of this product.

12.3. Bioaccumulative potential

Bioaccumulative potential Not expected to bioaccumulate.

**SODIUM CHLORIDE**

Bioaccumulative potential Not relevant.

**MAGNESIUM CHLORIDE HEXAHYDRATE**

Bioaccumulative potential No specific test data are available.

Partition coefficient Not determined.

**POTASSIUM CHLORIDE**

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient No specific test data are available.

**SODIUM HYDROGEN CARBONATE**

Bioaccumulative potential The product is not bioaccumulating.

**BORIC ACID**

Bioaccumulative potential Boron has a low bioaccumulation potential.

Partition coefficient Not determined.

12.4. Mobility in soil

Mobility Due to the very dilute amounts of constituents these are expected not to travel through soil layers. Product constituents will be absorbed by the soil at different rates.

**SODIUM CHLORIDE**

Adsorption/desorption coefficient Not relevant.

**MAGNESIUM CHLORIDE HEXAHYDRATE**

Mobility The product is soluble in water.

**POTASSIUM CHLORIDE**

Mobility The product is water-soluble and may spread in water systems.

**SODIUM HYDROGEN CARBONATE**

Mobility Sodium bicarbonate is ionised in water, the sodium ion will be adsorbed onto the soil surface and the bicarbonate will remain in solution.

Adsorption/desorption coefficient Scientifically unjustified.
SYNTHETIC SEA WATER (ASTM D1141-98)

BORIC ACID

Mobility

The product is soluble in water.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

This substance is not classified as PBT or vPvB according to current EU criteria.

SODIUM CHLORIDE

Results of PBT and vPvB assessment

This substance is not classified as PBT or vPvB according to current EU criteria.

MAGNESIUM CHLORIDE HEXAHYDRATE

Results of PBT and vPvB assessment

This substance is not classified as PBT or vPvB according to current EU criteria.

POTASSIUM CHLORIDE

Results of PBT and vPvB assessment

This substance is not classified as PBT or vPvB according to current EU criteria.

SODIUM HYDROGEN CARBONATE

Results of PBT and vPvB assessment

This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

Other adverse effects

Will affect drinking water supplies. May affect the composition of freshwater if discharged in large amounts which may have an effect on aquatic organisms.

SODIUM CHLORIDE

Other adverse effects

None known.

MAGNESIUM CHLORIDE HEXAHYDRATE

Other adverse effects

None known.

POTASSIUM CHLORIDE

Other adverse effects

None known.

SODIUM HYDROGEN CARBONATE

Other adverse effects

Will affect drinking water supplies.

BORIC ACID
SYNTHETIC SEA WATER (ASTM D1141-98)

Other adverse effects  None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information  Dispose in accordance with local regulations.

Disposal methods  Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. If allowed, flush to drain with plenty of water. When dealing with waste always consider the waste management hierarchy of Prevention, Preparation for re-use, Recycling, Recovery and Disposal. It is advisable to minimise waste at source if possible, then re-use, recover or recycle wherever possible before considering waste disposal options.

SECTION 14: Transport information

14.1. UN number

Not classified.

14.2. UN proper shipping name

Not classified.

14.3. Transport hazard class(es)

Not classified.

14.4. Packing group

Not classified.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant  No.

14.6. Special precautions for user

Not classified.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code  Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations  Industry - Dermal; Long term systemic effects 22 mg/kg/day


Guidance  Approved Classification and Labelling Guide (CHIP 4)  
ECHA Guidance on the compilation of safety data sheets 2014.  
Industry - Dermal; Long term systemic effects 22 mg/kg/day
SYNFETIC SEA WATER (ASTM D1141-98)

15.2. Chemical safety assessment
Information from the manufacturer of the raw material has not been received regarding Chemical Safety Assessments, Exposure Scenarios or a Chemical Safety Report.

### SECTION 16: Other information

<table>
<thead>
<tr>
<th>General information</th>
<th>This datasheet is not intended to be a replacement for a full risk assessment, these should always be carried out by competent persons.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key literature references and sources for data</td>
<td>Raw material safety data sheets. ECHA website.</td>
</tr>
<tr>
<td>Revision comments</td>
<td>Full revision</td>
</tr>
<tr>
<td>Revision date</td>
<td>03/02/2015</td>
</tr>
<tr>
<td>Revision</td>
<td>2</td>
</tr>
<tr>
<td>Supersedes date</td>
<td>17/04/2009</td>
</tr>
<tr>
<td>SDS number</td>
<td>11739</td>
</tr>
<tr>
<td>Risk phrases in full</td>
<td>Not classified. R25 Toxic if swallowed. R32 Contact with acids liberates very toxic gas. R36/38 Irritating to eyes and skin.</td>
</tr>
<tr>
<td>Hazard statements in full</td>
<td>H301 Toxic if swallowed. H315 Causes skin irritation. H318 Causes serious eye damage. H319 Causes serious eye irritation. H360FD May damage fertility. May damage the unborn child.</td>
</tr>
</tbody>
</table>