1. IDENTIFICATION

Product identifier
Product Name
Dissolved Oxygen 2 Reagent

Other means of identification
Product Code(s)
98299

Safety data sheet number
M00028

UN/ID no
UN2680

Recommended use of the chemical and restrictions on use
Recommended Use
Laboratory reagent. Determination of dissolved oxygen.
Uses advised against
None.
Restrictions on use
None.

Details of the supplier of the safety data sheet

Manufacturer Address
Hach Company P.O.Box 389  Loveland, CO 80539 USA +1(970) 669-3050

Emergency telephone number
+1(303) 623-5716 - 24 Hour Service  +1(515)232-2533 - 8am - 4pm CST

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Corrosive to metals
Category 1

Acute toxicity - Oral
Category 3

Acute toxicity - Dermal
Category 3

Acute toxicity - Inhalation (Dusts/Mists)
Category 3

Skin corrosion/irritation
Category 1

Serious eye damage/eye irritation
Category 1

Specific target organ toxicity (repeated exposure)
Category 2

Chronic aquatic toxicity
Category 3

Hazards not otherwise classified (HNOC)
Not applicable

Label elements

Signal word - Danger
3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance
Not applicable

Mixture

Chemical Family
Mixture.

Percent ranges are used where confidential product information is applicable.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>Percent</th>
<th>HMRIC #</th>
</tr>
</thead>
</table>

EN / AGHS
## 4. FIRST AID MEASURES

### Description of first aid measures

#### General advice
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

#### Inhalation
Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention. Do not breathe dust.

#### Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention.

#### Skin contact
Get immediate medical advice/attention. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

#### Ingestion
Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get immediate medical advice/attention.

#### Self-protection of the first aider
Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Do not breathe dust. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

#### Most important symptoms and effects, both acute and delayed

**Symptoms**
Burning sensation. Coughing and/or wheezing. Difficulty in breathing.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians**
Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

## 5. FIRE-FIGHTING MEASURES

### Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

### Unsuitable Extinguishing Media
Caution: Use of water spray when fighting fire may be inefficient.

### Specific hazards arising from the chemical
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

### Hazardous combustion products
No information available.
Special protective equipment for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company’s emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

Personal precautions, protective equipment and emergency procedures

Personal precautions

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Attention! Corrosive material. Keep people away from and upwind of spill/leak. Avoid generation of dust. Do not breathe dust.

Other Information

Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Pick up and transfer to properly labeled containers.

Prevention of secondary hazards

Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections

See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash before reuse. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Do not breathe dust. Avoid generation of dust.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Flammability class

Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Control parameters

Exposure Guidelines

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium iodide (KI)</td>
<td>TWA: 0.01 ppm</td>
<td>NDF</td>
<td>NDF</td>
</tr>
<tr>
<td>CAS#: 7681-11-0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Sodium azide           | Ceiling: 0.29 mg/m³  
                       | Ceiling: 0.11 ppm  
                       | (vacated)  | Ceiling: 0.1 ppm 
                       | SKN*               | Ceiling: 0.3 mg/m³ NaN3 |
| CAS#: 26628-22-8       |              |          |                    |

Appropriate engineering controls

Engineering Controls
- Showers
- Eyewash stations
- Ventilation systems.

Individual protection measures, such as personal protective equipment

Respiratory protection
- No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hand Protection
- Wear suitable gloves. Impervious gloves.

Eye/face protection
- Face protection shield.

Skin and body protection
- Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

General Hygiene Considerations
- Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace. Do not breathe dust. Take off contaminated clothing and wash before reuse.

Environmental exposure controls
- Local authorities should be advised if significant spillages cannot be contained. Do not allow into any sewer, on the ground or into any body of water.

Thermal hazards
- None under normal processing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>crystalline</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight</td>
</tr>
<tr>
<td>Color</td>
<td>white</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular weight</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>12.6</td>
<td>5% Solution</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>110 °C / 230 °F</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not applicable</td>
<td></td>
</tr>
</tbody>
</table>
### Solubility(ies)

#### Water solubility

<table>
<thead>
<tr>
<th>Water solubility classification</th>
<th>Water solubility</th>
<th>Water Solubility Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soluble</td>
<td>&gt; 1000 mg/L</td>
<td>25 °C / 77 °F</td>
</tr>
</tbody>
</table>

#### Solubility in other solvents

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Solubility classification</th>
<th>Solubility</th>
<th>Solubility Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid</td>
<td>Soluble</td>
<td>&gt; 1000 mg/L</td>
<td>25 °C / 77 °F</td>
</tr>
</tbody>
</table>

### Other Information

#### Metal Corrosivity

Classified as corrosive to metal according to GHS criteria

- **Steel Corrosion Rate**: Not applicable
- **Aluminum Corrosion Rate**: 6.3 mm/yr / 0.25 in/yr

#### Volatile Organic Compounds (VOC) Content

Not applicable

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>Volatile organic compounds (VOC) content</th>
<th>CAA (Clean Air Act)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium hydroxide monohydrate</td>
<td>1310-66-3</td>
<td>No data available</td>
<td>-</td>
</tr>
<tr>
<td>Potassium iodide (KI)</td>
<td>7681-11-0</td>
<td>No data available</td>
<td>-</td>
</tr>
<tr>
<td>Sodium azide</td>
<td>26628-22-8</td>
<td>No data available</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Explosive properties

- Upper explosion limit: No data available
- Lower explosion limit: No data available

#### Flammable properties

- **Flash point**: Not applicable
- **Method**: No information available

#### Flammability Limit in Air

- Upper flammability limit: No data available
- Lower flammability limit: No data available

#### Oxidizing properties

No data available.
10. STABILITY AND REACTIVITY

Reactivity
Not applicable.

Chemical stability
Stability Stable under normal conditions.

Explosion data
Sensitivity to Mechanical Impact None
Sensitivity to Static Discharge None.

Possibility of Hazardous Reactions
Possibility of Hazardous Reactions None under normal processing.

Hazardous polymerization
None under normal processing.

Conditions to avoid
Conditions to avoid Exposure to air or moisture over prolonged periods. Excessive heat.

Incompatible materials

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

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Product Information

Inhalation Corrosive by inhalation. Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. Toxic by inhalation.

Eye contact Causes burns. Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact May cause irritation. Toxic in contact with skin.

Ingestion Causes burns. Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

Symptoms Redness. Burning. May cause blindness. Coughing and/or wheezing. Difficulty in breathing.

Toxicologically synergistic products
None known.

Toxicokinetics, metabolism and distribution
See ingredients information below.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Toxicokinetics, metabolism and distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium iodide (KI)</td>
<td>May cross placenta and be excreted in breast milk. May react synergistically with mercury.</td>
</tr>
<tr>
<td>(30 - 40%)</td>
<td></td>
</tr>
<tr>
<td>CAS#: 7681-11-0</td>
<td></td>
</tr>
<tr>
<td>Sodium azide</td>
<td>Human data indicates that the most common health effect of sodium azide is hypotension, almost independent of route of exposure.</td>
</tr>
<tr>
<td>(1 - 5%)</td>
<td></td>
</tr>
<tr>
<td>CAS#: 26628-22-8</td>
<td></td>
</tr>
</tbody>
</table>

Product Acute Toxicity Data
Test data reported below

<table>
<thead>
<tr>
<th>Oral Exposure Route</th>
<th>Toxicological effects</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat LD₅₀</td>
<td>Behavioral</td>
<td>Outside testing</td>
</tr>
<tr>
<td></td>
<td>Flaccid muscle tone</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lethargy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Endocrine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Abnormalities of the spleen</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eye</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ptosis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gastrointestinal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Excess fluid in the peritoneal cavity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Liver</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Abnormalities of the liver</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lungs, Thorax, or Respiration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Abnormalities of the lungs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chromorhinorrhea</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Excess fluid in the the pleural cavity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Red or brown staining of the nose/mouth area</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nutritional and Gross Metabolic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emaciation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reproductive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Soiling and wetness of the anogenital area</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin and Appendages</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Piloerection</td>
<td></td>
</tr>
</tbody>
</table>

Dermal Exposure Route
No data available

Inhalation (Dust/Mist) Exposure Route
No data available

Inhalation (Vapor) Exposure Route
No data available

Inhalation (Gas) Exposure Route
No data available

Unknown Acute Toxicity
Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

| ATEmix (oral) | No information available |
| ATEmix (dermal) | 866.00 mg/kg |
| ATEmix (inhalation-dust/mist) | 0.90 mg/L |
| ATEmix (inhalation-vapor) | 21.69 mg/L |
| ATEmix (inhalation-gas) | No information available |

Ingredient Acute Toxicity Data

### Oral Exposure Route

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Toxicological effects</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium hydroxide monohydrate (60 - 70%) CAS#: 1310-66-3</td>
<td>Rat LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>225 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
<tr>
<td>Potassium iodide (KI) (30 - 40%) CAS#: 7681-11-0</td>
<td>Rat LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>2779 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>Sodium azide (1 - 5%) CAS#: 26628-22-8</td>
<td>Rat LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>27 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

### Dermal Exposure Route

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Toxicological effects</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (1 - 5%) CAS#: 26628-22-8</td>
<td>Rabbit LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>20 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

### Inhalation (Dust/Mist) Exposure Route

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Toxicological effects</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium hydroxide monohydrate (60 - 70%) CAS#: 1310-66-3</td>
<td>Rat LC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>0.96 mg/L</td>
<td>4 hours</td>
<td>None reported</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
<tr>
<td>Sodium azide (1 - 5%) CAS#: 26628-22-8</td>
<td>Rat LC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>0.037 mg/L</td>
<td>None reported</td>
<td>Eye Other effects Behavioral Convulsions or effect on seizure threshold Lungs, Thorax, or Respiration Structural or functional change in trachea or bronchi</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

Inhalation (Vapor) Exposure Route

Inhalation (Gas) Exposure Route

If available, see data below
Product Specific Target Organ Toxicity Single Exposure Data

Oral Exposure Route
Dermal Exposure Route  No data available
Inhalation (Dust/Mist) Exposure Route  No data available
Inhalation (Vapor) Exposure Route  No data available
Inhalation (Gas) Exposure Route  No data available

Ingredient Specific Target Organ Toxicity Single Exposure Data

Oral Exposure Route
If available, see data below

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Toxicological effects</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium iodide (KI)</td>
<td>Mouse LD_{50}</td>
<td>1862 mg/kg</td>
<td>None reported</td>
<td>Lungs, Thorax, or Respiration Dyspnea</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

Dermal Exposure Route
If available, see data below

Inhalation (Dust/Mist) Exposure Route
If available, see data below

Inhalation (Vapor) Exposure Route
If available, see data below

Inhalation (Gas) Exposure Route
If available, see data below

Aspiration toxicity
If available, see data below

Kinematic viscosity
Not applicable

Product Skin Corrosion/Irritation Data
No data available.

Ingredient Skin Corrosion/Irritation Data
If available, see data below

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Test method</th>
<th>Species</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Results</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium hydroxide monohydrate</td>
<td>Existing human experience</td>
<td>Human</td>
<td>None reported</td>
<td>None reported</td>
<td>Corrosive to skin</td>
<td>ERMA (New Zealands Environmental Risk Management Authority)</td>
</tr>
<tr>
<td>(60 - 70%) CAS#: 1310-66-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium iodide (KI) (30 - 40%)</td>
<td>Standard Draize Test</td>
<td>Rabbit</td>
<td>None reported</td>
<td>None reported</td>
<td>Skin irritant</td>
<td>No information available</td>
</tr>
<tr>
<td>CAS#: 7681-11-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium azide (1 - 5%) CAS#: 26628-22-8</td>
<td>Organization for Economic Co-operation and Development (OECD) - Test 404: Acute Dermal Corrosion/Irritation</td>
<td>Rabbit</td>
<td>500 mg</td>
<td>1 hours</td>
<td>Corrosive to skin</td>
<td>ECHA (The European Chemicals Agency)</td>
</tr>
</tbody>
</table>

Product Serious Eye Damage/Eye Irritation Data
No data available.

Ingredient Eye Damage/Eye Irritation Data
If available, see data below

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Test method</th>
<th>Species</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Results</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium iodide (KI) (30 - 40%)</td>
<td>None reported</td>
<td>Rabbit</td>
<td>None reported</td>
<td>None reported</td>
<td>Eye irritant</td>
<td>HSDB (Hazardous Substances Data Bank)</td>
</tr>
<tr>
<td>CAS#: 7681-11-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sensitization Information

EN / AGHS
Product Code(s) 98299
Issue Date 26-May-2016
Version 3.1

Product Name Dissolved Oxygen 2 Reagent
Revision Date 26-Jan-2018
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Product Sensitization Data
Skin Sensitization Exposure Route No data available.
Respiratory Sensitization Exposure Route No data available.

Ingredient Sensitization Data
Skin Sensitization Exposure Route If available, see data below.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Test method</th>
<th>Species</th>
<th>Results</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium iodide (KI)</td>
<td>Patch test</td>
<td>Human</td>
<td>Not confirmed to be a skin sensitizer</td>
<td>ERMA (New Zealands Environmental Risk Management Authority)</td>
</tr>
</tbody>
</table>

Respiratory Sensitization Exposure Route If available, see data below.

Chronic Toxicity Information

Product Specific Target Organ Toxicity Repeat Dose Data
Oral Exposure Route No data available.
Dermal Exposure Route No data available.
Inhalation (Dust/Mist) Exposure Route No data available.
Inhalation (Vapor) Exposure Route No data available.
Inhalation (Gas) Exposure Route No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data
Oral Exposure Route If available, see data below
Dermal Exposure Route If available, see data below
Inhalation (Dust/Mist) Exposure Route If available, see data below
Inhalation (Vapor) Exposure Route If available, see data below
Inhalation (Gas) Exposure Route If available, see data below

Product Carcinogenicity Data
Oral Exposure Route No data available
Dermal Exposure Route No data available
Inhalation (Dust/Mist) Exposure Route No data available
Inhalation (Vapor) Exposure Route No data available
Inhalation (Gas) Exposure Route No data available

Ingredient Carcinogenicity Data

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium hydroxide monohydrate</td>
<td>1310-66-3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Potassium iodide (KI)</td>
<td>7681-11-0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sodium azide</td>
<td>26628-22-8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Legend

ACGIH (American Conference of Governmental Industrial Hygienists) Does not apply
IARC (International Agency for Research on Cancer) Does not apply
NTP (National Toxicology Program) Does not apply
OSHA (Occupational Safety and Health Administration of the US Department of Labor) Does not apply

Oral Exposure Route If available, see data below
Dermal Exposure Route If available, see data below
Inhalation (Dust/Mist) Exposure Route If available, see data below
Inhalation (Vapor) Exposure Route If available, see data below
Inhalation (Gas) Exposure Route If available, see data below

Product Germ Cell Mutagenicity invitro Data
No data available.

Ingredient Germ Cell Mutagenicity invitro Data
If available, see data below

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Test</th>
<th>Cell Strain</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Results</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium iodide (KI) (30 - 40%) CAS#: 7681-11-0</td>
<td>Cytogenetic analysis</td>
<td>Rat ascites tumor</td>
<td>500 mg/kg</td>
<td>None reported</td>
<td>Positive test result for mutagenicity</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>Sodium azide (1 - 5%) CAS#: 26628-22-8</td>
<td>DNA damage</td>
<td>Human leukocyte</td>
<td>3 mmol/L</td>
<td>None reported</td>
<td>Positive test result for mutagenicity</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>Sodium azide (1 - 5%) CAS#: 26628-22-8</td>
<td>DNA damage</td>
<td>Human mammary gland</td>
<td>5.2 mg/L</td>
<td>24 hours</td>
<td>Positive test result for mutagenicity</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

**Product Germ Cell Mutagenicity invivo Data**

<table>
<thead>
<tr>
<th>Oral Exposure Route</th>
<th>Dermal Exposure Route</th>
<th>Inhalation (Dust/Mist) Exposure Route</th>
<th>Inhalation (Vapor) Exposure Route</th>
<th>Inhalation (Gas) Exposure Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**Ingredient Germ Cell Mutagenicity invivo Data**

<table>
<thead>
<tr>
<th>Oral Exposure Route</th>
<th>Dermal Exposure Route</th>
<th>Inhalation (Dust/Mist) Exposure Route</th>
<th>Inhalation (Vapor) Exposure Route</th>
<th>Inhalation (Gas) Exposure Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>If available, see data below</td>
<td>If available, see data below</td>
<td>If available, see data below</td>
<td>If available, see data below</td>
<td>If available, see data below</td>
</tr>
</tbody>
</table>

**Product Reproductive Toxicity Data**

<table>
<thead>
<tr>
<th>Oral Exposure Route</th>
<th>Dermal Exposure Route</th>
<th>Inhalation (Dust/Mist) Exposure Route</th>
<th>Inhalation (Vapor) Exposure Route</th>
<th>Inhalation (Gas) Exposure Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
<td>No data available</td>
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</tbody>
</table>

**Ingredient Reproductive Toxicity Data**

<table>
<thead>
<tr>
<th>Oral Exposure Route</th>
<th>Dermal Exposure Route</th>
<th>Inhalation (Dust/Mist) Exposure Route</th>
<th>Inhalation (Vapor) Exposure Route</th>
<th>Inhalation (Gas) Exposure Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>If available, see data below</td>
<td>If available, see data below</td>
<td>If available, see data below</td>
<td>If available, see data below</td>
<td>If available, see data below</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Exposure time</th>
<th>Toxicological effects</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium iodide (KI) (30 - 40%) CAS#: 7681-11-0</td>
<td>Human TD$_{Lo}$</td>
<td>2700 mg/kg</td>
<td>39 weeks</td>
<td>Specific Developmental Abnormalities Endocrine System</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>Chemical name</td>
<td>Endpoint type</td>
<td>Reported dose</td>
<td>Exposure time</td>
<td>Toxicological effects</td>
<td>Key literature references and sources for data</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
<td>-----------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>Potassium iodide (KI) (30 - 40%) CAS#: 7681-11-0</td>
<td>Human TD$_{Lo}$</td>
<td>3240 mg/kg</td>
<td>39 weeks</td>
<td>Effects on Newborn Other neonatal measures or effects Physical Specific Developmental Abnormalities Endocrine system</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

**Inhalation (Dust/Mist) Exposure Route**

<table>
<thead>
<tr>
<th>Inhalation (Vapor) Exposure Route</th>
<th>Inhalation (Gas) Exposure Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>If available, see data below</td>
<td>If available, see data below</td>
</tr>
</tbody>
</table>
12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life with long lasting effects

Product Ecological Data

Aquatic toxicity

Fish

No data available

Crustacea

No data available

Algae

No data available

Ingredient Ecological Data

Aquatic toxicity

Fish

If available, see ingredient data below

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Exposure time</th>
<th>Species</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium iodide (KI)</td>
<td>96 hours</td>
<td>Oncorhynchus mykiss</td>
<td>LC50</td>
<td>896 mg/L</td>
<td>PEEN (Pan European Ecological Network)</td>
</tr>
<tr>
<td>(30 - 40%) CAS#: 7881-11-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium azide</td>
<td>96 hours</td>
<td>Lepomis macrochirus</td>
<td>LC50</td>
<td>0.68 mg/L</td>
<td>PEEN (Pan European Ecological Network)</td>
</tr>
<tr>
<td>(1 - 5%) CAS#: 26628-22-8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Crustacea

If available, see ingredient data below

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Exposure time</th>
<th>Species</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide</td>
<td>48 Hours</td>
<td>Daphnia pulex</td>
<td>EC50</td>
<td>4.2 mg/L</td>
<td>PEEN (Pan European Ecological Network)</td>
</tr>
<tr>
<td>(1 - 5%) CAS#: 26628-22-8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Algae

If available, see ingredient data below

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Exposure time</th>
<th>Species</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide</td>
<td>96 hours</td>
<td>Selenastrum capricornutum</td>
<td>EC50</td>
<td>0348 mg/L</td>
<td>PEEN (Pan European Ecological Network)</td>
</tr>
<tr>
<td>(1 - 5%) CAS#: 26628-22-8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other Information

Persistence and degradability

Product Biodegradability Data

No data available.

Ingredient Biodegradability Data

Bioaccumulation

Product Bioaccumulation Data

No data available.

Partition Coefficient (n-octanol/water)

log Kow ~ 0

Ingredient Bioaccumulation Data

Mobility
Soil Organic Carbon-Water Partition Coefficient

log $K_{oc} \sim 0$

Water solubility

<table>
<thead>
<tr>
<th>Water solubility classification</th>
<th>Water solubility</th>
<th>Water Solubility Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soluble</td>
<td>&gt; 1000 mg/L</td>
<td>25 °C / 77 °F</td>
</tr>
</tbody>
</table>

Other adverse effects
Contains a substance with an endocrine-disrupting potential.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products
Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging
Do not reuse empty containers.

US EPA Waste Number
D002, P105

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide</td>
<td></td>
<td>P105</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

Special instructions for disposal
Never put unreacted azides down the drain!. Dispose of material in an E.P.A. approved hazardous waste facility.

14. TRANSPORT INFORMATION

U.S. DOT

UN/ID no          UN2680
Proper shipping name Lithium Hydroxide Mixture
Hazard Class    8
Packing Group  II
Special Provisions Contact with acids forms toxic fumes.
Emergency Response Guide Number 154

TDG

UN/ID no          UN2680
Hazard Class    8
Packing Group  II

IATA

UN/ID no          UN2680
Proper shipping name Lithium Hydroxide Mixture
Hazard Class    8
Packing Group  II
ERG Code        154

IMDG

UN/ID no          UN2680
Proper shipping name Lithium Hydroxide Mixture
Hazard Class    8
Packing Group: II

Note: No special precautions necessary.

Additional information
There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies. If the item is part of a reagent set or kit the classification would change to the following: UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories
- TSCA: Complies
- DSL/NDSL: Complies

International Inventories
- EINECS/ELINCS: Complies
- ENCS: Complies
- IECSC: Complies
- KECL: Complies
- PICCS: Complies
- TCSI: Complies
- AICS: Complies
- NZIoC: Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TCSI - Taiwan Chemical Substances Inventory
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide (CAS #: 26628-22-8)</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories
- Acute health hazard: Yes
- Chronic Health Hazard: Yes
- Fire hazard: No
- Sudden release of pressure hazard: No
- Reactive Hazard: No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)
CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA/SARA RQ</th>
<th>Reportable Quantity (RQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide</td>
<td>1000 lb</td>
<td>1000 lb</td>
<td>RQ 1000 lb final RQ</td>
</tr>
<tr>
<td>26628-22-8</td>
<td></td>
<td></td>
<td>RQ 454 kg final RQ</td>
</tr>
</tbody>
</table>

U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide</td>
<td>Theft - Explosives/Improvised Explosive Device Precursors</td>
</tr>
<tr>
<td>(1 - 5%) CAS#: 26628-22-8</td>
<td></td>
</tr>
</tbody>
</table>

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium hydroxide monohydrate 1310-66-3</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sodium azide 26628-22-8</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. EPA Label Information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>FIFRA</th>
<th>FDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium iodide (KI)</td>
<td>180.0940</td>
<td>21 CFR 184.1634</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments
None

Additional information

Global Automotive Declarable Substance List (GADSL)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Global Automotive Declarable Substance List Classifications</th>
<th>Global Automotive Declarable Substance List Thresholds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium azide</td>
<td>Declarable Substance (FI)</td>
<td>0.1 %</td>
</tr>
<tr>
<td>26628-22-8</td>
<td></td>
<td>1 µg/m</td>
</tr>
</tbody>
</table>

NFPA and HMIS Classifications
**NFPA**  | **Health hazards**  3  | **Flammability**  0  | **Instability**  0  | **Physical and Chemical Properties**  -
---|---|---|---|---
**HMIS**  | **Health hazards**  3  | **Flammability**  0  | **Physical Hazards**  0  | **Personal protection**  - X

---

**Key or legend to abbreviations and acronyms used in the safety data sheet**

- **NIOSH IDLH**  Immediately Dangerous to Life or Health
- **ACGIH**  ACGIH (American Conference of Governmental Industrial Hygienists)
- **NDF**  no data

**Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

- **TWA**  TWA (time-weighted average)
- **MAC**  Maximum Allowable Concentration
- **X**  Listed

**TWA**  | **STEL**  | **STEL (Short Term Exposure Limit)**
---|---|---
**MAC**  | **Ceiling**  | **Ceiling Limit Value**
**X**  | **Vacated**  | These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.

- **SKN**  Skin designation
- **RSP**  Respiratory sensitization
- **C**  Carcinogen
- **M**  mutagen

**SKN**  | **SKN+**  | **Skin sensitization**
---|---|---
**RSP**  | **R**  | **Reproductive toxicant**
**C**  | **M**  | **Hazard Designation**

**Prepared By**  | Hach Product Compliance Department
**Issue Date**  | 26-May-2016
**Revision Date**  | 26-Jan-2018
**Revision Note**  | None

**Disclaimer**

**USER RESPONSIBILITY:** Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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**End of Safety Data Sheet**