1. IDENTIFICATION

Product identifier
Product Name Titrant Solution Hardness 3 0.015 M EDTA

Other means of identification
Product Code(s) 42632
Safety data sheet number M00582

Recommended use of the chemical and restrictions on use
Recommended Use Laboratory Use. Hardness determination.
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
(970) 669-3050

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

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

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

Hazards not otherwise classified (HNOC)
Not applicable

Label elements

Hazard statements
EUH210 - Safety data sheet available on request

The product contains no substances which at their given concentration, are considered to be hazardous to health

Precautionary statements
3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance
Not applicable

Mixture

Percent ranges are used where confidential product information is applicable.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Percent Range</th>
<th>HMRIC #</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Propanediol</td>
<td>57-56-6</td>
<td>20 - 30%</td>
<td>-</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>7647-01-0</td>
<td>&lt;0.1%</td>
<td>-</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Description of first aid measures

General advice
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Eye contact
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If symptoms persist, call a physician.

Skin contact
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If symptoms persist, call a physician.

Inhalation
IF INHALED: Remove person to fresh air and keep comfortable for breathing. If symptoms persist, call a physician.

Ingestion
IF SWALLOWED: Rinse Mouth. If symptoms persist, call a physician.

Self-protection of the first aider
Use personal protective equipment as required. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Most important symptoms and effects, both acute and delayed

Symptoms
See Section 11: TOXICOLOGICAL INFORMATION.

Indication of any immediate medical attention and special treatment needed

Note to physicians
Treat symptomatically.

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.

Flammable properties
Substance does not burn.

Specific hazards arising from the chemical
This product will not burn or explode.

**Hazardous combustion products**

This material will not burn.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective 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.

**EC Notice**

Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

**WHMIS Notice**

Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

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

**Personal precautions**

Evacuate personnel to safe areas. Do not touch or walk through spilled material. Ventilate affected area. Use personal protective equipment as required.

**For emergency responders**

Use personal protection recommended in Section 8.

**Environmental precautions**

Avoid release to the environment. See Section 12 for additional ecological information.

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

**Methods for containment**

Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up**

Neutralize spill if necessary. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Dispose of in accordance with local, state and federal regulations or laws.

**Emergency Response Guide Number**

Not applicable

---

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Do not breathe dust/fume/gas/mist/vapors/spray.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions**

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

**Flammability class**

Not applicable
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>Ceiling: 2 ppm</td>
<td>(vacated) Ceiling: 5 ppm (vacated) Ceiling: 7 mg/m³ Ceiling: 5 ppm Ceiling: 7 mg/m³</td>
<td>IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m³</td>
</tr>
<tr>
<td>&lt;0.1%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Chemical OEL</th>
<th>Chemical OEL</th>
<th>Chemical OEL</th>
<th>Chemical OEL</th>
<th>Chemical OEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>Ceiling: 2 ppm</td>
<td>Ceiling: 2 ppm</td>
<td>Ceiling: 2 ppm</td>
<td>Ceiling: 2 ppm</td>
<td>Ceiling: 2 ppm</td>
</tr>
<tr>
<td>&lt;0.1%</td>
<td>Ceiling: 3 mg/m³</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Northwest Territories OEL</th>
<th>Nova Scotia OEL</th>
<th>Nunavut OEL</th>
<th>Ontario TWA</th>
<th>Prince Edward Island OEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Propanediol</td>
<td>NDF</td>
<td>NDF</td>
<td>NDF</td>
<td>TWA: 10 mg/m³</td>
<td>NDF</td>
</tr>
<tr>
<td>20 - 30%</td>
<td></td>
<td></td>
<td></td>
<td>TWA: 50 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TWA: 155 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>Ceiling: 2 ppm</td>
<td>Ceiling: 2 ppm</td>
<td>Ceiling: 2 ppm</td>
<td>Ceiling: 2 ppm</td>
<td>Ceiling: 2 ppm</td>
</tr>
<tr>
<td>&lt;0.1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Quebec OEL</th>
<th>Saskatchewan OEL</th>
<th>Yukon OEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>Ceiling: 5 ppm</td>
<td>Ceiling: 2 ppm</td>
<td>Ceiling: 5 ppm</td>
</tr>
<tr>
<td>&lt;0.1%</td>
<td>Ceiling: 7.5 mg/m³</td>
<td></td>
<td>Ceiling: 7 mg/m³</td>
</tr>
</tbody>
</table>

Other Information
Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Legend
See section 16 for terms and abbreviations

Appropriate engineering controls

Engineering Controls
Showers
Elaywash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection
Wear safety glasses with side shields (or goggles).

Skin and body protection
Wear protective gloves and protective clothing.

Respiratory protection
In case of insufficient ventilation, wear suitable respiratory equipment.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Take off all contaminated clothing and wash it before reuse. Wash hands thoroughly after handling. Regular cleaning of equipment, work area and clothing is recommended.

Environmental exposure controls
Do not allow into any sewer, on the ground or into any body of water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Physical state: Liquid
Gas Under Pressure: Not classified according to GHS criteria
Appearance: aqueous solution
Color: colorless
Odor: None
Odor threshold: No data available

<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>5.0</td>
<td></td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>~ -24 °C / -11 °F</td>
<td>Estimation based on theoretical calculation</td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>&gt; ~ 100 °C / 212 °F</td>
<td>Estimation based on theoretical calculation</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>0.63 (water = 1)</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>21.902 mm Hg / 2.92 kPa at 25 °C / 77 °F</td>
<td>Estimation based on theoretical calculation</td>
</tr>
<tr>
<td>Vapor density (air = 1)</td>
<td>0.62 (air = 1)</td>
<td></td>
</tr>
<tr>
<td>Specific gravity (water = 1 / air = 1)</td>
<td>1.026</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient (n-octanol/water)</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Soil Organic Carbon-Water Partition Coefficient</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>No data available</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: Not classified as corrosive to metal according to GHS criteria
Steel Corrosion Rate: No data available
10. STABILITY AND REACTIVITY

Reactivity properties
Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

Chemical stability
Stable under recommended storage conditions.

Special dangers of the product
None reported.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous polymerization
Hazardous polymerization does not occur.

Conditions to avoid
Poor Ventilation.

Incompatible materials

Hazardous Decomposition Products
None known based on information supplied.
Explosive properties
Not classified according to GHS criteria.

Upper explosion limit No data available
Lower explosion limit No data available

Autoignition temperature
No data available

Sensitivity to Static Discharge
None reported

Sensitivity to Mechanical Impact
None reported

11. TOXICOLOGICAL INFORMATION

NIOSH (RTECS) Number None reported

Information on Likely Routes of Exposure

<table>
<thead>
<tr>
<th>Product Information</th>
<th>Product does not present an acute toxicity hazard based on known or supplied information.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>No known effect based on information supplied.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>No known effect based on information supplied.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>No known effect based on information supplied.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>No known effect based on information supplied.</td>
</tr>
<tr>
<td>Aggravated Medical Conditions</td>
<td>None known.</td>
</tr>
<tr>
<td>Toxicologically synergistic products</td>
<td>None known.</td>
</tr>
<tr>
<td>Toxicokinetics, metabolism and distribution</td>
<td>See ingredients information below.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Toxicokinetics, metabolism and distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Propanediol (20 - 30%) CAS#: 57-55-6</td>
<td>Based on human data (oral child), large doses over prolonged period of time cause behavioral changes.</td>
</tr>
<tr>
<td>Hydrochloric acid (&lt;0.1%) CAS#: 7647-01-0</td>
<td>Low concentrations of hydrochloric acid solution do not seem to cause adverse effects to animals and its corrosivity may be greatly attributed to any acute deaths, therefore it is not classified for acute toxicity.</td>
</tr>
</tbody>
</table>

Product Acute Toxicity 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 Acute Toxicity Data

<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>1,2-Propanediol</td>
<td>Rat</td>
<td>20000 mg/kg</td>
<td>None</td>
<td>None reported</td>
<td>RTECS (Registry of Toxic</td>
</tr>
</tbody>
</table>
### Toxicological data for ingredients is not indicative of likely harm.

<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>1,2-Propanediol (20 - 30%) CAS#: 57-55-6</td>
<td>Rabbit LD50</td>
<td>20800 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
<tr>
<td>Hydrochloric acid (&lt;0.1%) CAS#: 7647-01-0</td>
<td>Rabbit LD50</td>
<td>&gt; 5010 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
</tbody>
</table>

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

No data available.

**Inhalation (Vapor) 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>Hydrochloric acid (&lt;0.1%) CAS#: 7647-01-0</td>
<td>Rat LC50</td>
<td>16.8 mg/L</td>
<td>4 hours</td>
<td>None reported</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
</tbody>
</table>

**Inhalation (Gas) Exposure Route**

No data available.

**Product Skin Corrosion/Irritation Data**

No data available.

**Ingredient Skin Corrosion/Irritation Data**

<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>1,2-Propanediol (20 - 30%) CAS#: 57-55-6</td>
<td>Standard Draize Test</td>
<td>Human</td>
<td>500 mg</td>
<td>7 days</td>
<td>Mild skin irritant</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>Hydrochloric acid (&lt;0.1%) CAS#: 7647-01-0</td>
<td>Existing human experience</td>
<td>Human</td>
<td>None reported</td>
<td>None reported</td>
<td>Corrosive to skin</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Test method</th>
<th>Species</th>
<th>Reported Exposure</th>
<th>Results</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
</table>
Product Code(s) 42632
Issue Date 25-May-2016
Version 4

Product Name Titrant Solution Hardness 3 0.015 M EDTA
Revision Date 25-Oct-2016
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<table>
<thead>
<tr>
<th>Substance</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>1,2-Propanediol (20 - 30%) CAS#: 57-55-6</td>
<td>Standard Draize Test</td>
<td>Human</td>
<td>104 mg</td>
<td>72 hours</td>
<td>Skin irritant</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>Hydrochloric acid (&lt;0.1%) CAS#: 7647-01-0</td>
<td>Existing human experience</td>
<td>Human</td>
<td>None reported</td>
<td>None reported</td>
<td>Corrosive to eyes</td>
<td>No information available</td>
</tr>
</tbody>
</table>

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

**Ingredient Eye Damage/Eye Irritation Data**

<table>
<thead>
<tr>
<th>Substance</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>1,2-Propanediol (20 - 30%) CAS#: 57-55-6</td>
<td>Standard Draize Test</td>
<td>Rabbit</td>
<td>500 mg</td>
<td>24 hours</td>
<td>Mild eye irritant</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

**Sensitization Information**

**Product Sensitization Data**

Skin Sensitization Exposure Route
No data available.

Respiratory Sensitization Exposure Route
No data available.

**Ingredient Sensitization Data**

Skin Sensitization Exposure Route
No data available.

Respiratory Sensitization Exposure Route
No data available.

**Chronic Toxicity Information**

**Product Repeat Dose Toxicity 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 Repeat Dose Toxicity 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** Toxicological data for ingredients is not indicative of likely harm.

<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>1,2-Propanediol</td>
<td>Rat</td>
<td>2.180 mg/L</td>
<td>90 days</td>
<td>Behavioral</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>
Inhalation (Gas) Exposure Route

<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>1,2-Propanediol</td>
<td>57-55-6</td>
<td>-</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>7647-01-0</td>
<td>-</td>
<td>Group 3</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)  
IARC (International Agency for Research on Cancer)  
NTP (National Toxicology Program)  
OSHA (Occupational Safety and Health Administration of the US Department of Labor)

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

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

Product Germ Cell Mutagenicity/invitroData
No data available.

Ingredient Germ Cell Mutagenicity/invitroData
Toxicological data for ingredients is not indicative of likely harm.
<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>1,2-Propanediol (20 - 30%)</td>
<td>Cytogenetic analysis</td>
<td>Hamster fibroblast</td>
<td>32000 mg/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>Hydrochloric acid (&lt;0.1%)</td>
<td>Cytogenetic analysis</td>
<td>Hamster lung</td>
<td>30 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>Hydrochloric acid (&lt;0.1%)</td>
<td>Cytogenetic analysis</td>
<td>Hamster ovary</td>
<td>8 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>Hydrochloric acid (&lt;0.1%)</td>
<td>DNA repair</td>
<td>Escherichia coli</td>
<td>0.025 mg/well</td>
<td>None reported</td>
<td>Positive test result for mutagenicity</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

**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 Germ Cell Mutagenicity/in vivo 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
- Oral Exposure Route: No data available

**Ingredient Reproductive Toxicity Data**

- Oral Exposure Route: No data available
### Dermal Exposure Route
No data available

### Inhalation (Dust/Mist) Exposure Route
No data available

<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>Hydrochloric acid (&lt;0.1%)</td>
<td>Rat TC&lt;sub&gt;10&lt;/sub&gt;</td>
<td>0.450 mg/L</td>
<td>1 hours</td>
<td>Effects on Embryo or Fetus: Fetal toxicity (except death e.g. stunted fetus) Specific Developmental Abnormalities Homeostasis</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

### Inhalation (Vapor) Exposure Route
No data available

### Inhalation (Gas) Exposure Route
No data available

---

### 12. ECOLOGICAL INFORMATION

#### Ecotoxicity
Based on the classification principles, not classified as hazardous to the environment.

#### Product Ecological Data

##### Aquatic toxicity

- **Fish**
  - No data available

- **Crustacea**
  - No data available

- **Algae**
  - No data available

##### Terrestrial toxicity

- **Soil**
  - No data available

- **Vertebrates**
  - No data available

- **Invertebrates**
  - No data available

#### Ingredient Ecological Data

##### Aquatic toxicity

- **Fish**
  - Toxicological data for ingredients is not indicative of likely harm.

<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>1,2-Propanediol (20 - 30%)</td>
<td>96 hours</td>
<td>Pimephales promelas</td>
<td>LC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>51400 mg/L</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
<tr>
<td>Hydrochloric acid (&lt;0.1%)</td>
<td>96 hours</td>
<td>Gambusia affinis</td>
<td>LC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>282 mg/L</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
</tbody>
</table>

- **Crustacea**
  - Toxicological data for ingredients is not indicative of likely harm.

<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>1,2-Propanediol (20 - 30%)</td>
<td>48 Hours</td>
<td>Daphnia magna</td>
<td>LC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>34400 mg/L</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
<tr>
<td>Hydrochloric acid (&lt;0.1%)</td>
<td>48 Hours</td>
<td>None reported</td>
<td>LC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>240 mg/L</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
</tbody>
</table>
Product Code(s) 42632  
Issue Date 25-May-2016  
Version 4  

Product Name Titrant Solution Hardness 3  
Revision Date 26-Oct-2016  
Page 13 / 17

CAS#: 7647-01-0  

Algae  
Toxicological data for ingredients is not indicative of likely harm.  

<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>1,2-Propanediol (20 - 30%) CAS#: 57-55-6</td>
<td>96 hours</td>
<td><em>Selenastrum capricornutum</em></td>
<td>EC50</td>
<td>19000 mg/L</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
</tbody>
</table>

Terrestrial toxicity  

Soil  
No data available  

Vertebrates  
No data available  

Invertebrates  
No data available  

Other Information  

Persistence and degradability  
None known.  

Product Biodegradability Data  
If available, see ingredient data below.  

Ingredient Biodegradability Data  
Test data reported below  

Bioaccumulation  
If available, see ingredient data below.  

Product Bioaccumulation Data  
Test data reported below.  

Ingredient Bioaccumulation Data  
No data available  

Additional information  

Product Information  

Partition Coefficient (n-octanol/water)  
Not applicable  

Ingredient Information  

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition Coefficient (n-octanol/water)</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Propanediol (20 - 30%) CAS#: 57-55-6</td>
<td>log Kow = -0.92</td>
<td>No information available</td>
</tr>
<tr>
<td>Hydrochloric acid (&lt;0.1%) CAS#: 7647-01-0</td>
<td>log Kow = 0.25</td>
<td>No information available</td>
</tr>
</tbody>
</table>

Mobility  
Mobility in soil: High mobility. If available, see ingredient data below.  

Product Information
### Soil Organic Carbon-Water Partition Coefficient

**Ingredient Information**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Soil Organic Carbon-Water Partition Coefficient</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Propanediol</td>
<td>( \log K_{oc} = -0.41 )</td>
<td>No information available</td>
</tr>
<tr>
<td>(20 - 30%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS#: 57-55-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>( \log K_{oc} = 0.8 )</td>
<td>No information available</td>
</tr>
<tr>
<td>(&lt;0.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS#: 7647-01-0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Information

**Water solubility**

**Product Information**

<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>

**Ingredient Information**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Water solubility classification</th>
<th>Water solubility</th>
<th>Water solubility temperature °C</th>
<th>Water solubility temperature °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Propanediol</td>
<td>Completely soluble</td>
<td>100000 mg/L</td>
<td>20 °C</td>
<td>68 °F</td>
</tr>
<tr>
<td>CAS#: 57-55-6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>Soluble</td>
<td>&gt; 1000 mg/L</td>
<td>25 °C</td>
<td>77 °F</td>
</tr>
<tr>
<td>CAS#: 7647-01-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Other adverse effects

No information available.

### 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

**Disposal of wastes**

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

**Contaminated packaging**

Working in a well-ventilated area. Rinse three times with an appropriate solvent. Collect rinsate and dispose of according to local, state, or federal regulations. Dispose of empty container as normal trash. In the US, rinsate from empty containers is classified as hazardous waste and should be disposed of at an E.P.A. approved facility. Rinsate from empty containers may contain sufficient product to require disposal as hazardous waste in countries other than the US. Improper disposal or reuse of this container may be dangerous and illegal. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

**Special instructions for disposal**

Open cold water tap completely, slowly pour the material to the drain. Allow cold water to run for 5 minutes to completely flush the system. Dispose of material in an E.P.A. approved hazardous waste facility.

### 14. TRANSPORT INFORMATION
DOT: Not regulated
TDG: Not regulated
IATA: Not regulated
IMDG: Not regulated

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

TSCA- United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL- Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories
EINECS/ELINCS Complies
ENCS Complies
IECSCE 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 does not contain any 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>Hydrochloric acid (CAS #: 7647-01-0)</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories

- Acute health hazard: Yes
- Chronic Health Hazard: No
- 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)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>5000 lb</td>
<td>-</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>7647-01-0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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>Hydrochloric acid</td>
<td>5000 lb</td>
<td>5000 lb</td>
<td>RQ 5000 lb final RQ</td>
</tr>
<tr>
<td>7647-01-0</td>
<td></td>
<td></td>
<td>RQ 2270 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>Hydrochloric acid (&lt;0.1%)</td>
<td>Release - Toxic (concentration &gt;=37%); Release - Toxic (anhydrous); Theft - Weapons of Mass Effect (anhydrous)</td>
</tr>
<tr>
<td>CAS#: 7647-01-0</td>
<td></td>
</tr>
</tbody>
</table>

U.S. - DEA (Drug Enforcement Administration) List I & List II

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>U.S. - DEA (Drug Enforcement Administration) - List I or Precursor Chemicals</th>
<th>U.S. - DEA (Drug Enforcement Administration) - List II or Essential Chemicals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid (&lt;0.1%)</td>
<td>Not Listed</td>
<td>0.0 kg Domestic Sales Weight (listed under Anhydrous hydrogen chloride); 50 gallon Export Volume (exports, transshipments and international transactions to designated countries); 27 kg Export Weight (exports, transshipments and international transactions to designated countries, listed under Anhydrous hydrogen chloride)</td>
</tr>
<tr>
<td>CAS#: 7647-01-0</td>
<td></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>1,2-Propanediol 57-55-6</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>Hydrochloric acid 7647-01-0</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

U.S. EPA Label Information
EPA Pesticide Registration Number Not applicable
16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA and HMIS Classifications

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical and Chemical Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- 0</td>
<td>- 0</td>
<td>- 0</td>
<td></td>
</tr>
<tr>
<td>HMIS</td>
<td>Health hazards</td>
<td>Flammability</td>
<td>Physical hazards</td>
<td>Personal protection - X</td>
</tr>
<tr>
<td></td>
<td>- 0</td>
<td>- 0</td>
<td>- 0</td>
<td>See section 8 for more information</td>
</tr>
</tbody>
</table>

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)  STEL: STEL (Short Term Exposure Limit)
MAC: Maximum Allowable Concentration  Ceiling: Ceiling Limit Value
X: Listed  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.

Skin designation
SKN+  Skin sensitization
SKN++  %
RSP+: Respiratory sensitization  **
C: Carcinogen  R  Hazard Designation
M: mutagen  Reproductive toxicant

Prepared By  Hach Product Compliance Department
Issue Date  25-May-2016
Revision Date  25-Oct-2016
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