SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier
Product Name NitraVer® 5 Nitrate Reagent

Other means of identification
Product Code(s) 2106169

Safety data sheet number M00049

UN/ID no UN3077

Recommended use of the chemical and restrictions on use
Recommended Use Laboratory reagent. Determination of nitrate.
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 considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Hazard Classification</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>4</td>
</tr>
<tr>
<td>Acute toxicity - Inhalation (Dusts/Mists)</td>
<td>3</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>2</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>2A</td>
</tr>
<tr>
<td>Skin sensitzation</td>
<td>1</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>2</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>1B</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>2</td>
</tr>
<tr>
<td>Specific target organ toxicity (repeated exposure)</td>
<td>1</td>
</tr>
</tbody>
</table>

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word - Danger
Hazard statements
H302 - Harmful if swallowed
H331 - Toxic if inhaled
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H317 - May cause an allergic skin reaction
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H361 - Suspected of damaging fertility or the unborn child
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary statements
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P281 - Use personal protective equipment as required
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P311 - Call a POISON CENTER or doctor/physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P362 - Take off contaminated clothing and wash before reuse
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P405 - Store locked up
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/ container to an approved waste disposal plant

Other Information
Very toxic to aquatic life with long lasting effects
Very toxic to aquatic life

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 Range</th>
<th>HMRC #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, potassium salt (1:1)</td>
<td>7778-77-0</td>
<td>30 - 50%</td>
<td>-</td>
</tr>
<tr>
<td>Benzenesulfonic acid, 4-amino-</td>
<td>121-57-3</td>
<td>10 - 30%</td>
<td>-</td>
</tr>
<tr>
<td>Benzoic acid, 2,5-dihydroxy-</td>
<td>490-79-9</td>
<td>10 - 30%</td>
<td>-</td>
</tr>
<tr>
<td>Cadmium</td>
<td>7440-43-9</td>
<td>3 - 7%</td>
<td>-</td>
</tr>
<tr>
<td>Copper, [propanedioato(2-)-O,O]-</td>
<td>7268-92-0</td>
<td>0.1 - 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. Call a physician immediately.

**Ingestion**
IF SWALLOWED: Rinse Mouth. Call a physician immediately.

**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**
Water. Carbon dioxide. Dry chemical.

**Unsuitable extinguishing media**
Caution: Use of water spray when fighting fire may be inefficient.

**Flammable properties**
Can burn in fire, releasing toxic vapors.

**Specific hazards arising from the chemical**
May react violently with. Strong oxidizers. Hydrazoic acid. Ammonium Nitrate. In the event of fire and/or explosion do not breathe fumes. May cause sensitization in susceptible persons. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

**Hazardous combustion products**

**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

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. Cover with plastic sheet to prevent spreading.

Methods for cleaning up
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
171

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on 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 in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep in properly labeled containers.

Flammability class
Not applicable

Incompatible materials

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>Cadmium 3 - 7%</td>
<td>TWA: 0.01 mg/m³&lt;br&gt;TWA: 0.002 mg/m³</td>
<td>TWA: 0.1 mg/m³&lt;br&gt;TWA: 0.2 mg/m³&lt;br&gt;TWA: 5 µg/m³&lt;br&gt;(vacated) STEL: 0.3 ppm&lt;br&gt;Ceiling: 0.3 mg/m³&lt;br&gt;Ceiling: 0.6 mg/m³</td>
<td>IDLH: 9 mg/m³ dust IDLH: 9 mg/m³ Cd dust and fume</td>
</tr>
<tr>
<td>Copper, [propanedioato(2-)-O,O]-0.1 - 1%</td>
<td>TWA: 1 mg/m³</td>
<td>NDF</td>
<td>IDLH: 100 mg/m³ Cu dust and mist&lt;br&gt;TWA: 1 mg/m³ Cu dust and mist</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Alberta OEL</th>
<th>British Columbia OEL</th>
<th>Manitoba OEL</th>
<th>New Brunswick OEL</th>
<th>New Foundland &amp; Labrador OEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium 3 - 7%</td>
<td>TWA: 0.01 mg/m³&lt;br&gt;TWA: 0.002 mg/m³</td>
<td>TWA: 0.01 mg/m³&lt;br&gt;TWA: 0.002 mg/m³</td>
<td>TWA: 0.002 mg/m³&lt;br&gt;TWA: 0.01 mg/m³</td>
<td>TWA: 0.01 mg/m³&lt;br&gt;TWA: 0.002 mg/m³&lt;br&gt;TWA: 0.01 mg/m³</td>
<td>TWA: 0.002 mg/m³&lt;br&gt;TWA: 0.01 mg/m³</td>
</tr>
<tr>
<td>Copper, [propanedioato(2-)-O,O]-0.1 - 1%</td>
<td>NDF</td>
<td>NDF</td>
<td>TWA: 1 mg/m³</td>
<td>NDF</td>
<td>TWA: 1 mg/m³</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>Cadmium 3 - 7%</td>
<td>TWA: 0.01 mg/m³&lt;br&gt;TWA: 0.002 mg/m³&lt;br&gt;STEL: 0.03 mg/m³&lt;br&gt;STEL: 0.006 mg/m³</td>
<td>TWA: 0.002 mg/m³&lt;br&gt;TWA: 0.01 mg/m³</td>
<td>TWA: 0.01 mg/m³&lt;br&gt;TWA: 0.002 mg/m³&lt;br&gt;STEL: 0.03 mg/m³&lt;br&gt;STEL: 0.006 mg/m³</td>
<td>TWA: 0.01 mg/m³&lt;br&gt;TWA: 0.002 mg/m³&lt;br&gt;TWA: 0.01 mg/m³</td>
<td>TWA: 0.002 mg/m³&lt;br&gt;TWA: 0.01 mg/m³</td>
</tr>
<tr>
<td>Copper, [propanedioato(2-)-O,O]-0.1 - 1%</td>
<td>NDF</td>
<td>TWA: 1 mg/m³</td>
<td>NDF</td>
<td>NDF</td>
<td>TWA: 1 mg/m³</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>Cadmium 3 - 7%</td>
<td>TWA: 0.025 mg/m³</td>
<td>TWA: 0.01 mg/m³&lt;br&gt;TWA: 0.002 mg/m³&lt;br&gt;STEL: 0.03 mg/m³&lt;br&gt;STEL: 0.006 mg/m³</td>
<td>STEL: 0.15 mg/m³&lt;br&gt;TWA: 0.05 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<br>Eyewash stations<br>Ventilation systems

Individual protection measures, such as personal protective equipment:

Eye/face protection: Wear tight sealing safety goggles and/or face protection shield.

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
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. Prevent product from entering drains. Avoid creating dust.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state: Solid
Gas Under Pressure: Not classified according to GHS criteria
Appearance: powder
Color: Gray
Odor: Odorless
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>2.8</td>
<td>5% Solution</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>180 °C / 356 °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>
<tr>
<td>Vapor density (air = 1)</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Specific gravity (water = 1 / air = 1)</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient (n-octanol/water)</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Soil Organic Carbon-Water Partition Coefficient</td>
<td>No data available</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>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Kinematic viscosity</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
Not classified as corrosive to metal according to GHS criteria

Steel Corrosion Rate
2.06 mm/yr / 0.08 in/yr

Aluminum Corrosion Rate

Volatile Organic Compounds (VOC) Content
Not applicable.

Bulk density
No data available

Explosive properties
Not classified according to GHS criteria.

Explosion data
Can burn in fire, releasing toxic vapors.

Upper explosion limit
No data available

Lower explosion limit
No data available

Flammable properties
Can burn in fire, releasing toxic vapors.

Flammability Limit in Air

Upper flammability limit:
No data available

Lower flammability limit:
No data available

Flash point
Not applicable

Method
No information available

Oxidizing properties
Not classified according to GHS criteria.

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

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
Heat. Poor Ventilation.

Incompatible materials

**Hazardous Decomposition Products**

**Explosive properties**
Not classified according to GHS criteria. Can burn in fire, releasing toxic vapors.

- **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>Toxic if inhaled. Causes skin irritation. Causes serious eye irritation. Harmful if swallowed. Skin sensitizer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>Avoid breathing dust/fume/gas/mist/vapors/spray. Toxic by inhalation. Immediate medical attention is required.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>Contact with eyes may cause irritation. Severely irritating to eyes.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Causes skin irritation. May cause sensitization by skin contact.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Harmful if swallowed. Ingestion may cause irritation to mucous membranes.</td>
</tr>
<tr>
<td>Aggravated Medical Conditions</td>
<td>Skin disorders. Eye disorders.</td>
</tr>
<tr>
<td>Toxico logically 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>Benzenesulfonic acid, 4-amino- (10 - 30%) CAS#: 121-57-3</td>
<td>The only metabolite found in the urine of rat, rabbits, guinea-pigs is the N-acetylated derivative. In rats and rabbits the compound is only partly metabolized, whereas in guinea-pigs ca. 75% are excreted as N-acetyl derivative.</td>
</tr>
<tr>
<td>Benzoic acid, 2,5-dihydroxy- (10 - 30%) CAS#: 490-79-9</td>
<td>Aspirin metabolite.</td>
</tr>
</tbody>
</table>

**Product Acute Toxicity Data**
Test data reported below

<table>
<thead>
<tr>
<th>Endpoint type</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rat LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>Outside testing</td>
</tr>
</tbody>
</table>
Product Code(s) 2106169
Issue Date 09-Jun-2016
Version 4

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

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

<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>Phosphoric acid, potassium salt (1:1)</td>
<td>Mouse LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>1700 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
<tr>
<td>Benzenesulfonic acid, 4-amino-</td>
<td>Rat LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>12300 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
<tr>
<td>Benzoic acid, 2,5-dihydroxy-</td>
<td>Rat LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>800 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>Cadmium (3 - 7%)</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>GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)</td>
</tr>
<tr>
<td>Benzoic acid, 2,5-dihydroxy-</td>
<td>Mouse LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>4500 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>Vendor SDS</td>
</tr>
<tr>
<td>Cadmium (3 - 7%)</td>
<td>Mouse LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>8 mg/kg</td>
<td>None reported</td>
<td>Musculoskeletal Osteoporosis</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</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>Phosphoric acid, potassium salt (1:1)</td>
<td>Rabbit LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>&gt; 4640 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>Cadmium (3 - 7%)</td>
<td>Rat LC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>0.0125 mg/L</td>
<td>4 hours</td>
<td>None reported</td>
<td>ERMA (New Zealands Environmental Risk Management Authority)</td>
</tr>
</tbody>
</table>

ATEmix (inhalation-dust/mist) 0.89 mg/L

Ingredient Acute Toxicity Data

Oral Exposure Route

Inhalation (Dust/Mist) Exposure Route

Inhalation (Vapor) Exposure Route

Inhalation (Gas) Exposure Route

The following values are calculated based on chapter 3.1 of the GHS document
Cadmium
(3 - 7%)
CAS#: 7440-43-9
0.468 mg/L
4 hours
Vascular
Thromobosis distant from injection site
RTECS (Registry of Toxic Effects of Chemical Substances)

Inhalation (Vapor) Exposure Route
No data available

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>Benzenesulfonic acid, 4-amino-</td>
<td>Standard Draize Test</td>
<td>Rabbit</td>
<td>500 mg</td>
<td>24 hours</td>
<td>Mild skin irritant</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>(10 - 30%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS#: 121-57-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Ingredient Eye Damage/Eye 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>Benzenesulfonic acid, 4-amino-</td>
<td>Standard Draize Test</td>
<td>Rabbit</td>
<td>100 mg</td>
<td>24 hours</td>
<td>Eye irritant</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>(10 - 30%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS#: 121-57-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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

<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>Benzenesulfonic acid, 4-amino-</td>
<td>OECD Test No. 406: Skin Sensitization</td>
<td>Guinea pig</td>
<td>Confirmed to be a skin sensitizer</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
<tr>
<td>(10 - 30%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS#: 121-57-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<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>Cadmium (3 - 7%) CAS#: 7440-43-9</td>
<td>Rat TDL₀</td>
<td>37.5 mg/kg</td>
<td>30 days</td>
<td><strong>Biochemical</strong> Enzyme inhibition, induction, or change in blood or tissue levels (other enzymes) <strong>Blood</strong> Other changes <strong>Kidney, Ureter, or Bladder</strong> Other changes in urine composition</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

#### Dermal Exposure Route
No data available

#### 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>Cadmium (3 - 7%) CAS#: 7440-43-9</td>
<td>Man TDL₀</td>
<td>0.000088 mg/L</td>
<td>3139 days</td>
<td><strong>Kidney, Ureter, or Bladder</strong> Proteinuria</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

### Chemical Name 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>Phosphoric acid, potassium salt (1:1)</td>
<td>7778-77-0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Benzenesulfonic acid, 4-amino-</td>
<td>121-57-3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Benzoic acid, 2,5-dihydroxy-</td>
<td>490-79-9</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cadmium</td>
<td>7440-43-9</td>
<td>A2</td>
<td>Group 1</td>
<td>Known</td>
<td>X</td>
</tr>
<tr>
<td>Copper, [propanedioato(2-)-O,O]-</td>
<td>7268-92-0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Legend

| ACGIH (American Conference of Governmental Industrial Hygienists) | A2 - Suspected Human Carcinogen |
| IARC (International Agency for Research on Cancer) | Group 1 - Carcinogenic to Humans |
| NTP (National Toxicology Program) | Known - Known Carcinogen |
| OSHA (Occupational Safety and Health Administration of the US Department of Labor) | X - Present |

### Product Carcinogenicity Data
No data available
Product Code(s) 2106169
Issue Date 09-Jun-2016
Version 4

Product Name NitraVer® 5 Nitrate Reagent
Revision Date 06-Oct-2016
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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

### Ingredient Germ Cell Mutagenicity *in vitro* Data

No data available.

### Ingredient Germ Cell Mutagenicity *in vitro* Data

<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>
</table>
| Benzenesulfonic acid, 4-amino-(10 - 30%)
CAS#: 121-57-3 | Mutation in microorganisms
Salmonella typhimurium | None reported | None reported | Negative test result for mutagenicity | IUCLID (The International Uniform Chemical Information Database) |
| Benzoic acid, 2,5-dihydroxy-(10 - 30%)
CAS#: 490-79-9 | DNA inhibition
Human lymphocyte | 1 mmol/L | None reported | Positive test result for mutagenicity | RTECS (Registry of Toxic Effects of Chemical Substances) |
| Cadmium (3 - 7%)
CAS#: 7440-43-9 | DNA damage
Human lymphocyte | 0.25 mmol/L | 1 hours | Positive test result for mutagenicity | RTECS (Registry of Toxic Effects of Chemical Substances) |
| Cadmium (3 - 7%)
CAS#: 7440-43-9 | Micronucleus test
Mouse embryo | 0.006 mmol/L | None reported | Positive test result for mutagenicity | RTECS (Registry of Toxic Effects of Chemical Substances) |

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**

*invivo 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

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 Reproductive 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>Cadmium (3 - 7%) CAS#: 7440-43-9</td>
<td>Rat TDLo</td>
<td>23 mg/kg</td>
<td>22 days</td>
<td>Specific Developmental Abnormalities Blood and lymphatic systems (including spleen and marrow)</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

**12. ECOLOGICAL INFORMATION**

Ecotoxicity
Very toxic to aquatic life with long lasting effects.

**Product Ecological Data**

Aquatic toxicity

Fish
No data available

Crustacea
No data available

Algae
No data available

Terrestrial toxicity

Soil
No data available
**Product Code(s)** 2106169  
**Product Name** NitraVer® 5 Nitrate Reagent  
**Issue Date** 09-Jun-2016  
**Revision Date** 06-Oct-2016  
**Version** 4  
**Page** 14 / 20

Vertebrates  
No data available

Invertebrates  
No data available

**Ingredient Ecological Data**

**Aquatic toxicity**

**Fish**

<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>Benzenesulfonic acid, 4-amino- (10 - 30%)</td>
<td>96 hours</td>
<td><em>Pimephales promelas</em></td>
<td>LC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>100.4 mg/L</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
<tr>
<td>CAS#: 121-57-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzoic acid, 2,5-dihydroxy- (10 - 30%)</td>
<td>96 hours</td>
<td>None reported</td>
<td>LC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>1140 mg/L</td>
<td>Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™</td>
</tr>
<tr>
<td>CAS#: 490-79-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium (3 - 7%)</td>
<td>96 hours</td>
<td><em>Morone saxatilis</em></td>
<td>LC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>0.019 mg/L</td>
<td>PEEN (Pan European Ecological Network)</td>
</tr>
<tr>
<td>CAS#: 7440-43-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Crustacea**

<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>Benzenesulfonic acid, 4-amino- (10 - 30%)</td>
<td>48 Hours</td>
<td><em>Daphnia magna</em></td>
<td>EC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>85.66 mg/L</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
<tr>
<td>CAS#: 121-57-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzoic acid, 2,5-dihydroxy- (10 - 30%)</td>
<td>48 Hours</td>
<td>None reported</td>
<td>EC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>9811 mg/L</td>
<td>Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™</td>
</tr>
<tr>
<td>CAS#: 490-79-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium (3 - 7%)</td>
<td>48 Hours</td>
<td>None reported</td>
<td>EC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>0.58 mg/L</td>
<td>PEEN (Pan European Ecological Network)</td>
</tr>
<tr>
<td>CAS#: 7440-43-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Algae**

<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>Benzenesulfonic acid, 4-amino- (10 - 30%)</td>
<td>72 Hours</td>
<td><em>Scenedesmus subspicatus</em></td>
<td>EC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>91 mg/L</td>
<td>IUCLID (The International Uniform Chemical Information Database)</td>
</tr>
<tr>
<td>CAS#: 121-57-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benzoic acid, 2,5-dihydroxy- (10 - 30%)</td>
<td>96 hours</td>
<td>None reported</td>
<td>EC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>388 mg/L</td>
<td>Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™</td>
</tr>
<tr>
<td>CAS#: 490-79-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadmium</td>
<td>72 Hours</td>
<td>None reported</td>
<td>EC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>0.132 mg/L</td>
<td>PEEN (Pan European Ecological Network)</td>
</tr>
</tbody>
</table>
(3 - 7%)  
CAS#: 7440-43-9

Terrestrial toxicity

Soil  
No data available

Vertebrates  
No data available

Invertebrates  
No data available

Other Information

Canadian Environmental Protection Act (CEPA) - Domestic Substances List (DSL): Environmentally Hazardous Substances Categorizations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Category</th>
<th>Persistent</th>
<th>Bioaccumulation</th>
<th>Inherently Toxic to Aquatic Organisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, potassium salt (1:1)</td>
<td>7778-77-0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Benzenesulfonic acid, 4-amino-</td>
<td>121-57-3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Benzoic acid, 2,5-dihydroxy-</td>
<td>490-79-9</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cadmium</td>
<td>7440-43-9</td>
<td>Organic - metal salt</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Copper, [propanedioato(2-)-O,O]-</td>
<td>7268-92-0</td>
<td>Organic - metal salt</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Persistence and degradability

None known.

Product Biodegradability Data

If available, see ingredient data below.

Ingredient Biodegradability Data

Test data reported below

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Test method</th>
<th>Biodegradation</th>
<th>Exposure time</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoic acid, 2,5-dihydroxy-</td>
<td>None reported</td>
<td>97.6%</td>
<td>20 days</td>
<td>Readily biodegradable</td>
</tr>
<tr>
<td>(10 - 30%) CAS#: 490-79-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Bioaccumulation

If available, see ingredient data below.

Product Bioaccumulation Data

No data available.

Ingredient Bioaccumulation Data

No data available

Additional information

Product Information

No data available

Partition Coefficient (n-octanol/water)

No data available
**Ingredient Information**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition Coefficient (n-octanol/water)</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoic acid, 2,5-dihydroxy- (10 - 30%) CAS#: 490-79-9</td>
<td>log $K_{ow} = 1.74$</td>
<td>No information available</td>
</tr>
</tbody>
</table>

**Mobility**

Mobility in soil: Moderate to high mobility. If available, see ingredient data below.

**Product Information**

No data available

**Soil Organic Carbon-Water Partition Coefficient**

No data available

**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>Benzoic acid, 2,5-dihydroxy- (10 - 30%) CAS#: 490-79-9</td>
<td>log $K_{oc} = 1.45$</td>
<td>Estimation through KOCWIN v2.00 part of the Estimation Programs Interface (EPI) Suite™</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>$25 ^{\circ}C / 77 ^{\circ}F$</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 $^{\circ}C$</th>
<th>Water solubility temperature $^{\circ}F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphoric acid, potassium salt (1:1) CAS#: 7778-77-0</td>
<td>Soluble</td>
<td>$&gt; 1000$ mg/L</td>
<td>$25 ^{\circ}C$</td>
<td>$77 ^{\circ}F$</td>
</tr>
<tr>
<td>Benzenesulfonic acid, 4-amino- CAS#: 121-57-3</td>
<td>Slightly soluble</td>
<td>$10$ mg/L</td>
<td>$20 ^{\circ}C$</td>
<td>$68 ^{\circ}F$</td>
</tr>
<tr>
<td>Benzoic acid, 2,5-dihydroxy- CAS#: 490-79-9</td>
<td>Soluble</td>
<td>$5000$ mg/L</td>
<td>$20 ^{\circ}C$</td>
<td>$68 ^{\circ}F$</td>
</tr>
<tr>
<td>Cadmium CAS#: 7440-43-9</td>
<td>Insoluble</td>
<td>$&lt; 0.1$ mg/L</td>
<td>$25 ^{\circ}C$</td>
<td>$77 ^{\circ}F$</td>
</tr>
<tr>
<td>Copper, [propanedioato(2-)-O,O]- CAS#: 7268-92-0</td>
<td>Slightly soluble</td>
<td>$&gt; 0.1$ mg/L</td>
<td>$25 ^{\circ}C$</td>
<td>$77 ^{\circ}F$</td>
</tr>
</tbody>
</table>

**Other adverse effects**

Contains a substance with an endocrine-disrupting potential.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>EU - Endocrine Disrupters Candidate List</th>
<th>EU - Endocrine Disruptors - Evaluated Substances</th>
<th>Endocrine disrupting potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoic acid, 2,5-dihydroxy- (10 - 30%) CAS#: 490-79-9</td>
<td>Group III Chemical</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**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.

### Chemical Name

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>RCRA</th>
<th>RCRA - Basis for Listing</th>
<th>RCRA - D Series Wastes</th>
<th>RCRA - U Series Wastes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium 7440-43-9</td>
<td>-</td>
<td>Included in waste streams: F006, F039, K061, K069, K100</td>
<td>1.0 mg/L regulatory level</td>
<td>-</td>
</tr>
</tbody>
</table>

Special instructions for disposal
Dispose of material in an E.P.A. approved hazardous waste facility.

### 14. TRANSPORT INFORMATION

#### DOT

<table>
<thead>
<tr>
<th>UN/ID no</th>
<th>UN3077</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>Environmentally hazardous substances, solid, n.o.s.</td>
</tr>
<tr>
<td>DOT Technical Name</td>
<td>(Cadmium mixture)</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>9</td>
</tr>
<tr>
<td>Subsidiary class</td>
<td>6.1</td>
</tr>
<tr>
<td>Packing Group</td>
<td>III</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>This product contains a chemical which is listed as a severe marine pollutant according to DOT.</td>
</tr>
<tr>
<td>Emergency Response Guide Number</td>
<td>171</td>
</tr>
</tbody>
</table>

#### TDG

<table>
<thead>
<tr>
<th>UN/ID no</th>
<th>UN3077</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>Environmentally hazardous substances, solid, n.o.s.</td>
</tr>
<tr>
<td>TDG Technical Name</td>
<td>(Cadmium mixture)</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>9</td>
</tr>
<tr>
<td>Subsidiary class</td>
<td>6.1</td>
</tr>
<tr>
<td>Packing Group</td>
<td>III</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>This product contains a chemical which is listed as a severe marine pollutant according to TDG. Lead compounds.</td>
</tr>
<tr>
<td>ERG Code</td>
<td>171</td>
</tr>
</tbody>
</table>

#### IATA

<table>
<thead>
<tr>
<th>UN/ID no</th>
<th>UN3077</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>Environmentally hazardous substances, solid, n.o.s.</td>
</tr>
<tr>
<td>IATA Technical Name</td>
<td>(Cadmium mixture)</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>9</td>
</tr>
<tr>
<td>Subsidiary hazard class</td>
<td>6.1</td>
</tr>
<tr>
<td>Packing Group</td>
<td>III</td>
</tr>
<tr>
<td>ERG Code</td>
<td>171</td>
</tr>
</tbody>
</table>

#### IMDG

<table>
<thead>
<tr>
<th>UN/ID no</th>
<th>UN3077</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMDG Technical Name</td>
<td>(Cadmium mixture)</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>9</td>
</tr>
<tr>
<td>Subsidiary hazard class</td>
<td>6.1</td>
</tr>
</tbody>
</table>
Packing Group: III
Marine pollutant: This material meets the definition of a marine pollutant

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
IIECSC: Complies
KECL: Does not comply
PICCS: Complies
TCSE: 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
IIECSC- China Inventory of Existing Chemical Substances
KECL- Korean Existing and Evaluated Chemical Substances
PICCS- Philippines Inventory of Chemicals and Chemical Substances
TCSE- 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>Cadmium (CAS #: 7440-43-9)</td>
<td>0.1</td>
</tr>
<tr>
<td>Copper, [propanedioato(2-)-O,O]- (CAS #: 7268-92-0)</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)
**Chemical Name** | **CWA - Reportable Quantities** | **CWA - Toxic Pollutants** | **CWA - Priority Pollutants** | **CWA - Hazardous Substances**
--- | --- | --- | --- | ---
Cadmium 7440-43-9 | - | X | X | -
Copper, [propanedioato(2-)-O,O]- 7268-92-0 | - | X | - | -

**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>Cadmium 7440-43-9</td>
<td>10 lb</td>
<td>-</td>
<td>RQ 10 lb final RQ RQ 4.54 kg final RQ</td>
</tr>
</tbody>
</table>

**US State Regulations**

**California Proposition 65**
This product contains the following Proposition 65 chemicals

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Proposition 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium (CAS #: 7440-43-9)</td>
<td>Carcinogen Developmental Male Reproductive</td>
</tr>
</tbody>
</table>

**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>Cadmium 7440-43-9</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Copper, [propanedioato(2-)-O,O]- 7268-92-0</td>
<td>X</td>
<td>-</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 - 2</th>
<th>Flammability - 0</th>
<th>Instability - 0</th>
<th>Physical and Chemical Properties -</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS</td>
<td>Health hazards - 2</td>
<td>Flammability - 0</td>
<td>Physical hazards - 0</td>
<td>Personal protection - X</td>
</tr>
</tbody>
</table>

- See section 8 for more information

**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**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>TWA (time-weighted average)</td>
<td></td>
</tr>
<tr>
<td>MAC</td>
<td>Maximum Allowable Concentration</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Listed</td>
<td>Vacated</td>
</tr>
</tbody>
</table>

- **STEL (Short Term Exposure Limit)**
- **Ceiling Limit Value**

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 designation
- **SKN+**
  - Skin sensitization

- **RSP+**
  - Respiratory sensitization
- **R**
  - Reproductive toxicant

**Hazard Designation**

- **C**
  - Carcinogen
- **M**
  - Mutagen

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**Prepared By**
Hach Product Compliance Department

**Issue Date**
09-Jun-2016

**Revision Date**
06-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.

HACH COMPANY® 2016

End of Safety Data Sheet