1. IDENTIFICATION

Product identifier
Product Name PhosVer® 3 Phosphate Reagent

Other means of identification
Product Code(s) 2106069

Safety data sheet number M00035

Recommended use of the chemical and restrictions on use
Recommended Use Laboratory Use. Phosphate 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 +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)

<table>
<thead>
<tr>
<th>Skin corrosion/irritation</th>
<th>Category 2  Sub-category A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
</tbody>
</table>

Hazards not otherwise classified (HNOC)
Not applicable

Label elements

Signal word - Danger
H315 - Causes skin irritation
H318 - Causes serious eye damage

Precautionary statements
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P363 - Wash contaminated clothing before reuse
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P405 - Store locked up
P501 - Dispose of contents/container to an approved waste disposal plant
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

Other Hazards Known
May be harmful if swallowed

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Substance
Not applicable

#### Mixture

<table>
<thead>
<tr>
<th>Chemical Family</th>
<th>Chemical nature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture</td>
<td>No information available</td>
</tr>
</tbody>
</table>

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>Potassium pyrosulfate</td>
<td>7790-62-7</td>
<td>80 - 90%</td>
<td>-</td>
</tr>
<tr>
<td>L-Ascorbic acid</td>
<td>50-81-7</td>
<td>10 - 20%</td>
<td>-</td>
</tr>
<tr>
<td>Sodium molybdate</td>
<td>7631-95-0</td>
<td>1 - 5%</td>
<td>-</td>
</tr>
<tr>
<td>Tetrasodium EDTA</td>
<td>64-02-8</td>
<td>&lt;1%</td>
<td>-</td>
</tr>
<tr>
<td>Antimonate(2-), bis[.mu.-(2,3-dihydroxybutanedioato(4-)-O1,O2:O3,O4)]di-, dipotassium, trihydrate, stereoisomer</td>
<td>28300-74-5</td>
<td>&lt;1%</td>
<td>-</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

Description of first aid measures

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

Inhalation
Remove to fresh air. Get medical attention immediately if symptoms occur.

Eye contact
Get immediate medical advice/attention. 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.

Skin contact
Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Ingestion
Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.

Self-protection of the first aider
Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms
Burning sensation.

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.

Specific hazards arising from the chemical
No information available.

Hazardous combustion products

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. Use personal protective equipment as required. Ensure adequate ventilation.

Other Information
Refer to protective measures listed in Sections 7 and 8.
Environmental precautions

Prevent further leakage or spillage if safe to do so.

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. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

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>Sodium molybdate</td>
<td>TWA: 0.5 mg/m³</td>
<td>TWA: 5 mg/m³</td>
<td>IDLH: 1000 mg/m³ Mo</td>
</tr>
<tr>
<td>CAS#: 7631-95-0</td>
<td>(vacated) TWA: 5 mg/m³</td>
<td>(vacated) TWA: 0.5 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Antimonate(2-), bis[.mu.-{(2,3-dihydroxybutanedioato(4-)O1,O2,O3,O4)}di-, dipotassium, trihydrate, stereoisomer</td>
<td>TWA: 0.5 mg/m³</td>
<td>TWA: 0.5 mg/m³</td>
<td>IDLH: 50 mg/m³ Sb</td>
</tr>
<tr>
<td>CAS#: 28300-74-5</td>
<td>(vacated) TWA: 0.5 mg/m³</td>
<td>TWA: 0.5 mg/m³</td>
<td>TWA: 0.5 mg/m³ Sb</td>
</tr>
</tbody>
</table>

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

Tight sealing safety goggles.
Skin and body protection
Wear suitable protective clothing. Long sleeved clothing.

General Hygiene Considerations
Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.

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>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>powder</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>white</td>
<td></td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>Molecular weight</td>
<td>Not applicable</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
<td></td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>105 °C / 221 °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>2.22</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient (n-octanol/water)</td>
<td>log K&lt;sub&gt;ow&lt;/sub&gt; ~ -0.42</td>
<td></td>
</tr>
<tr>
<td>Soil Organic Carbon-Water Partition Coefficient</td>
<td>log K&lt;sub&gt;oc&lt;/sub&gt; ~ -0.23</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

Steel Corrosion Rate
No data available /

Aluminum Corrosion Rate
No data available /

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>Potassium pyrosulfate</td>
<td>7790-62-7</td>
<td>No data available</td>
<td>-</td>
</tr>
<tr>
<td>L-Ascorbic acid</td>
<td>50-81-7</td>
<td>No data available</td>
<td>-</td>
</tr>
<tr>
<td>Sodium molybdate</td>
<td>7631-95-0</td>
<td>No data available</td>
<td>-</td>
</tr>
<tr>
<td>Tetrasodium EDTA</td>
<td>64-02-8</td>
<td>No data available</td>
<td>-</td>
</tr>
</tbody>
</table>
| Antimonate(2-), bis[.mu.-/(2,3-dihydroxybutanedioato(4-)
  -O1,O2;O3,O4)]di-, dipotassium, trihydrate, stereoisomer | 28300-74-5| No data available                              | -                  |

Explosive properties

Upper explosion limit
No data available

Lower explosion limit
No data available

Flammable properties

Flame 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.

Bulk density
No data available

Particle Size
No information available

Particle Size Distribution
No information available

10. STABILITY AND REACTIVITY

Reactivity
Not applicable.

Chemical stability
Stable under normal conditions.

Explosion data

- Sensitivity to Mechanical Impact: None
- Sensitivity to Static Discharge: None.

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

Conditions to avoid
None known based on information supplied.

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
May cause irritation of respiratory tract.

Eye contact
Severely irritating to eyes. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact
Causes skin irritation.

Ingestion
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms
Redness. Burning. May cause blindness. May cause redness and tearing of the eyes.

Aggravated Medical Conditions

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>L-Ascorbic acid (10 - 20%) CAS#: 50-81-7</td>
<td>L-Ascorbic acid is an essential vitamin and plays a role in synthesis of collagen.</td>
</tr>
<tr>
<td>Antimonate(2-), bis[mu,-&gt;(2,3-dihydroxybutanedioato(4-)O1,02,O3,O4)di-, dipotassium, trihydrate, stereoisomer (&lt;1%) CAS#: 28300-74-5</td>
<td>Antimony compounds can cause dermatitis, conjunctivitis, nasal-septum ulceration through direct contact or by inhalation of dust or fumes. Antimony is also connected with kidney and liver degeneration and adverse reproductive effects.</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

Unknown Acute Toxicity
0% of the mixture consists of ingredient(s) of unknown toxicity.
### Acute Toxicity Estimations (ATE)

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

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEmix (oral)</td>
<td>2,775.00 mg/kg</td>
</tr>
<tr>
<td>ATEmix (dermal)</td>
<td>No information available</td>
</tr>
<tr>
<td>ATEmix (inhalation-dust/mist)</td>
<td>No information available</td>
</tr>
<tr>
<td>ATEmix (inhalation-vapor)</td>
<td>No information available</td>
</tr>
<tr>
<td>ATEmix (inhalation-gas)</td>
<td>No information available</td>
</tr>
</tbody>
</table>

### 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>Potassium pyrosulfate (80 - 90%) CAS#: 7790-62-7</td>
<td>Rat LD₅₀</td>
<td>2340 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>Vendor SDS</td>
</tr>
<tr>
<td>L-Ascorbic acid (10 - 20%) CAS#: 50-81-7</td>
<td>Rat LD₅₀</td>
<td>11900 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 molybdate (1 - 5%) CAS#: 7631-95-0</td>
<td>Rat LD₅₀</td>
<td>4000 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>Tetrasodium EDTA (&lt;1%) CAS#: 64-02-8</td>
<td>Rat LD₅₀</td>
<td>1658 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>ERMA (New Zealand Environmental Risk Management Authority)</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>Sodium molybdate (1 - 5%) CAS#: 7631-95-0</td>
<td>Guinea pig LD₅₀</td>
<td>310 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
<tr>
<td>Antimonate(2-), bis[.µ-(2,3-dihydroxybutanedicarboxylic-O1 ,O2:O3,O4)di-, dipotassium, trihydrate, stereoisomer (&lt;1%)] CAS#: 28300-74-5</td>
<td>Mouse LD₅₀</td>
<td>600 mg/kg</td>
<td>None reported</td>
<td>None reported</td>
<td>HSDB (Hazardous Substances Data Bank)</td>
</tr>
</tbody>
</table>

#### Dermal Exposure Route

If available, see data below

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

If available, see data below
### Sodium molybdate (1 - 5%)
CAS#: 7631-95-0

<table>
<thead>
<tr>
<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>Rat LC$_{50}$</td>
<td>&gt; 2.08 mg/L</td>
<td>4 hours</td>
<td>No deaths occurred at reported dose</td>
<td>ECHA (The European Chemicals Agency)</td>
<td></td>
</tr>
</tbody>
</table>

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

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

### Product Specific Target Organ Toxicity Single Exposure 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 Specific Target Organ Toxicity Single Exposure 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>

### Aspiration toxicity
If available, see data below

### Kinematic viscosity
Not applicable

### Product Skin Corrosion/Irritation Data
No data available.

<table>
<thead>
<tr>
<th>Test method</th>
<th>Species</th>
<th>Results</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Draize Test</td>
<td>Rabbit</td>
<td>Not corrosive or irritating to skin</td>
<td>Outside testing</td>
</tr>
</tbody>
</table>

### 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>Potassium pyrosulfate (80 - 90%) CAS#: 7790-62-7</td>
<td>Standard Draize Test</td>
<td>Rabbit</td>
<td>500 mg</td>
<td>4 hours</td>
<td>Not corrosive or irritating 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 pyrosulfate (80 - 90%) CAS#: 7790-62-7</td>
<td>None reported</td>
<td>None reported</td>
<td>None reported</td>
<td>None reported</td>
<td>Corrosive to eyes</td>
<td>Vendor SDS</td>
</tr>
</tbody>
</table>

### Antimonate(2-)

<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>Antimonate(2-), CAS#: 7831-95-0</td>
<td>None reported</td>
<td>Rabbit</td>
<td>100 mg</td>
<td>24 hours</td>
<td>Eye irritant</td>
<td>No information</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 | 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>Sodium molybdate (1 - 5%)</td>
<td>OECD Test No. 406: Skin Sensitization</td>
<td>Guinea pig</td>
<td>Not confirmed to be a skin sensitizer</td>
<td>Vendor SDS</td>
</tr>
</tbody>
</table>

**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>Potassium pyrosulfate</td>
<td>7790-62-7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>L-Ascorbic acid</td>
<td>50-81-7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sodium molybdate</td>
<td>7631-95-0</td>
<td>A3</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tetrasodium EDTA</td>
<td>64-02-8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Antimonate(2-), bis[mu.-(2,3-dihydroxybutanedioato(4-)-O1,02:O3,O4)di-, dipotassium, trihydrate, stereoisomer]</td>
<td>28300-74-5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Legend**
Product Code(s) 2106069          Product Name PhosVer® 3 Phosphate Reagent
Issue Date 27-Sep-2016           Revision Date 13-Feb-2018
Version 7    Page 11 / 17

| ACGIH (American Conference of Governmental Industrial Hygienists) | A3 - Animal Carcinogen |
| 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  
Dermal Exposure Route  
Inhalation (Dust/Mist) Exposure Route  
Inhalation (Vapor) Exposure Route  
Inhalation (Gas) Exposure Route  

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>L-Ascorbic acid (10 - 20%) CAS#: 50-81-7</td>
<td>DNA damage</td>
<td>Human fibroblast</td>
<td>0.2 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 molybdate (1 - 5%) CAS#: 7631-95-0</td>
<td>Phage inhibition capacity</td>
<td>Escherichia coli</td>
<td>16 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>
</tbody>
</table>

**Product 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 |

**Ingredient Germ Cell Mutagenicity *invivo* Data**
If available, see data below

| 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 Reproductive 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 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>L-Ascorbic acid (10 - 20%) CAS#: 50-81-7</td>
<td>Guinea pig TD&lt;sub&gt;Lo&lt;/sub&gt;</td>
<td>19500 mg/kg</td>
<td>28 days</td>
<td>None reported</td>
<td>RTECS (Registry of Toxic Effects of Chemical Substances)</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

Ecotoxicity

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>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 pyrosulfate (80 - 90%) CAS#: 7790-62-7</td>
<td>96 hours</td>
<td>Oncorhynchus mykiss</td>
<td>LC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>420 mg/L</td>
<td>ERMA (New Zealand's Environmental Risk Management Authority)</td>
</tr>
<tr>
<td>L-Ascorbic acid (10 - 20%) CAS#: 50-81-7</td>
<td>96 hours</td>
<td>None reported</td>
<td>LC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>44200 mg/L</td>
<td>Estimation through ECOSARs v1.11 part of the Estimation Programs Interface (EPI) Suite™</td>
</tr>
<tr>
<td>Sodium molybdate (1 - 5%) CAS#: 7631-95-0</td>
<td>96 hours</td>
<td>Oncorhynchus mykiss</td>
<td>LC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>800 mg/L</td>
<td>GESTIS (Information System on Hazardous Substances of the German Social Accident Insurance)</td>
</tr>
<tr>
<td>Antiminate(2-), bis[mu-.(2,3-dihydroxybutanedioato(4-)-O1,02:3,04)]dili-, dipotassium, trihydrate, stereoisomer (&lt;1%) CAS#: 28300-74-5</td>
<td>96 hours</td>
<td>None reported</td>
<td>LC&lt;sub&gt;50&lt;/sub&gt;</td>
<td>12.5 mg/L</td>
<td>Vendor SDS</td>
</tr>
</tbody>
</table>

Crustacea

If available, see ingredient data below

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Endpoint type</th>
<th>Reported dose</th>
<th>Key literature references and sources for data</th>
</tr>
</thead>
</table>

EN / AGHS
Potassium pyrosulfate (80 - 90%) CAS#: 7790-62-7

<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>L-Ascorbic acid (10 - 20%) CAS#: 50-81-7</td>
<td>48 Hours</td>
<td>Daphnia magna</td>
<td>EC₅₀</td>
<td>140 mg/L</td>
<td>ERMA (New Zealands Environmental Risk Management Authority)</td>
</tr>
<tr>
<td>L-Ascorbic acid (10 - 20%) CAS#: 50-81-7</td>
<td>96 hours</td>
<td>None reported</td>
<td>LC₅₀</td>
<td>17500 mg/L</td>
<td>Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™</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 K_{ow} ~ -0.42

Ingredient Bioaccumulation Data

Mobility

Soil Organic Carbon-Water Partition Coefficient log K_{oc} ~ -0.23

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
14. TRANSPORT INFORMATION

**U.S. 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

**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 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>Antimonate(2-), bis[mu-,(2,3-dihydroxybutanedioato(4-)O1,O2,O3,O4)]di-, dipotassium, trihydrate, stereoisomer (CAS #: 28300-74-5)</td>
<td>1.0</td>
</tr>
</tbody>
</table>

EN / AGHS
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).

<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>Antimonate(2-), bis[mu-(2,3-dihydroxybutanedioato(4-)-O1,O2,O3, O4)]di-, dipotassium, trihydrate, stereoisomer 28300-74-5</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</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>Antimonate(2-), bis[mu-(2,3-dihydroxybutanedioato(4-)-O1,O2,O3,O4)]di-, dipotassium, trihydrate, stereoisomer 28300-74-5</td>
<td>100 lb</td>
<td>-</td>
<td>RQ 100 lb final RQ&lt;br&gt;RQ 45.4 kg final RQ</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>Antimonate(2-), bis[mu-(2,3-dihydroxybutanedioato(4-)-O1,O2,O3,O4)]di-, dipotassium, trihydrate, stereoisomer 28300-74-5</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>L-Ascorbic acid</td>
<td>180.0950</td>
<td>21 CFR 182.3013, 21 CFR 182.8013</td>
</tr>
<tr>
<td>Sodium molybdate</td>
<td>180.0920</td>
<td>-</td>
</tr>
<tr>
<td>Tetrasodium EDTA</td>
<td>180.0910</td>
<td>-</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)
Not applicable

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>- 3</td>
<td>- 0</td>
<td>- 0</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Physical Hazards</th>
<th>Personal protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- 3</td>
<td>- 0</td>
<td>- 0</td>
<td>- 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

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.

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

Prepared By Hach Product Compliance Department

Issue Date 27-Sep-2016
Revision Date 13-Feb-2018
Revision Note SDS sections updated 2

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