

World Headquarters  
Hach Company  
P.O.Box 389  
Loveland, CO USA 80539  
(970) 669-3050

MSDS No: M00035

# MATERIAL SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** PhosVer ® 3 Phosphate Reagent  
**Catalog Number:** 2106069

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

Emergency Telephone Numbers:  
(Medical and Transportation)  
(303) 623-5716 24 Hour Service  
(515)232-2533 8am - 4pm CST

**MSDS Number:** M00035  
**Chemical Name:** Not applicable  
**CAS No.:** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Mixture  
**Hazard:** Causes eye burns.  
**Date of MSDS Preparation:**  
**Day:** 11  
**Month:** April  
**Year:** 2014

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

### Potassium Pyrosulfate

**CAS No.:** 7790-62-7  
**TSCA CAS Number:** 7790-62-7  
**Percent Range:** 75.0 - 85.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD50 = 2340 mg/kg  
**LC50:** None reported  
**TLV:** 10 mg/m<sup>3</sup> as inhalable dust; 3 mg/m<sup>3</sup> as respirable dust  
**PEL:** 15 mg/m<sup>3</sup> as inhalable dust; 5 mg/m<sup>3</sup> as respirable dust  
**Hazard:** Causes eye burns.

### Ascorbic Acid

**CAS No.:** 50-81-7  
**TSCA CAS Number:** 50-81-7  
**Percent Range:** 15 - 20  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD50 = 11900 mg/kg  
**LC50:** None reported  
**TLV:** 10 mg/m<sup>3</sup> as inhalable dust; 3 mg/m<sup>3</sup> as respirable dust  
**PEL:** 15 mg/m<sup>3</sup> as total dust; 5 mg/m<sup>3</sup> as respirable dust  
**Hazard:** Practically non-toxic.

### Potassium Antimonyl Tartrate

**CAS No.:** 28300-74-5  
**TSCA CAS Number:** 11071-15-1  
**Percent Range:** <0.2  
**Percent Range Units:** weight / weight  
**LD50:** Oral rat LD<sub>50</sub> = 115 mg/kg; Oral human LDLo = 2 mg/kg.  
**LC50:** None reported.  
**TLV:** 0.5 mg/m<sup>3</sup> (as Sb)

*PEL:* 0.5 mg/m<sup>3</sup> (as Sb)  
*Hazard:* Toxic.Experimental mutagen.

#### Sodium Molybdate

*CAS No.:* 7631-95-0  
*TSCA CAS Number:* 7631-95-0  
*Percent Range:* <2  
*Percent Range Units:* weight / weight  
*LD50:* Oral Rat LD50 = 250-4000 mg/kg; Oral Guinea Pig LD50 = 310 mg/kg  
*LC50:* Inhalation Rat LC50 > 2080 mg/m<sup>3</sup>/4 hrs (2.08 mg/L/4 hr)  
*TLV:* 5 mg/m<sup>3</sup> (as Mo)  
*PEL:* 5 mg/m<sup>3</sup> (as Mo)  
*Hazard:* Harmful if swallowedHarmful if inhaled.May cause eye irritation.

#### EDTA Tetrasodium Salt

*CAS No.:* 64-02-8  
*TSCA CAS Number:* 64-02-8  
*Percent Range:* < 0.5  
*Percent Range Units:* weight / weight  
*LD50:* Oral Rat: 1700 to 2700 mg/kg; LD50 Oral rat = 630-1,260 mg/kg  
*LC50:* None reported  
*TLV:* 10 mg/m<sup>3</sup> as inhalable dust; 3 mg/m<sup>3</sup> as respirable dust  
*PEL:* 15 mg/m<sup>3</sup> as total dust; 5 mg/m<sup>3</sup> as respirable dust  
*Hazard:* Harmful if swallowedCauses eye burns.

---

### 3. HAZARDS IDENTIFICATION

#### *Emergency Overview:*

*Appearance:* White to off-white powder  
*Odor:* Odorless  
CAUSES EYE BURNS MAY CAUSE RESPIRATORY TRACT IRRITATION

#### *HMIS:*

*Health:* 1  
*Flammability:* 1  
*Reactivity:* 0  
*Protective Equipment:* X - See protective equipment, Section 8.

#### *NFPA:*

*Health:* 3  
*Flammability:* 1  
*Reactivity:* 0  
*Symbol:* Not applicable

#### *Potential Health Effects:*

*Eye Contact:* May cause irritation  
*Skin Contact:* No effects are anticipated  
*Skin Absorption:* None reported  
*Target Organs:* None reported  
*Ingestion:* May be harmful if swallowed May cause: copper deficiency anemia gout loss of appetite loss of coordination listlessness diarrhea liver damage May effect enzyme activity.  
*Target Organs:* Blood Liver  
*Inhalation:* Large doses may cause: Effects similar to those of ingestion.  
*Target Organs:* Blood Liver  
*Medical Conditions Aggravated:* Pre-existing: Eye conditions Respiratory conditions Gout  
*Chronic Effects:* Chronic overexposure may cause copper deficiency enzyme activity effects liver damage Molybdenum poisoning signs include loss of appetite, listlessness and reduced growth rate. Excessive exposure to molybdenum compounds may cause gout and anemia.

#### *Cancer / Reproductive Toxicity Information:*

This product does NOT contain any OSHA listed carcinogens.  
This product does NOT contain any IARC listed chemicals.  
This product does NOT contain any NTP listed chemicals.

*Additional Cancer / Reproductive Toxicity Information:* Contains: an experimental mutagen.  
*Toxicologically Synergistic Products:* None reported

---

#### 4. FIRST AID

**Eye Contact:** Immediately flush eyes with water for 15 minutes. Call physician if irritation develops.

**Skin Contact (First Aid):** Wash skin with plenty of water.

**Ingestion (First Aid):** Never give anything by mouth to an unconscious person. Do not induce vomiting. Give 1-2 glasses of water. If you feel unwell, contact a physician.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary.

---

#### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Can burn in fire, releasing toxic vapors. Material is not classified as flammable according to GHS criteria.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not determined

**Hazardous Combustion Products:** Toxic fumes of: sulfur oxides, carbon monoxide, carbon dioxide, sodium monoxide, potassium oxides

**Fire / Explosion Hazards:** None reported

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Use media appropriate to surrounding fire conditions

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

---

#### 6. ACCIDENTAL RELEASE MEASURES

**Spill Response 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.

**Containment Technique:** Stop spilled material from being released to the environment.

**Clean-up Technique:** Sweep up material. Dispose of in accordance with local, state and federal regulations or laws. Decontaminate the area of the spill with a soap solution.

**Evacuation Procedure:** Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: any quantity is spilled.

**Special Instructions (for accidental release):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**D.O.T. Emergency Response Guide Number:** None

---

#### 7. HANDLING / STORAGE

**Handling:** Avoid contact with eyes. Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Store between 10° and 25°C.

**Flammability Class:** Not applicable

---

#### 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** safety glasses with top and side shields

**Skin Protection:** nitrile gloves. In the EU, the selected gloves must satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it. lab coat

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes. Do not breathe: dust. Wash thoroughly after handling.

TLV: Not established

PEL: Not established

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** White to off-white powder

**Physical State:** Solid

**Molecular Weight:** Not applicable

**Odor:** Odorless

**pH:** of a 5% solution = 1.5

**Vapor Pressure:** Not applicable

**Vapor Density (air = 1):** Not applicable

**Boiling Point:** Not determined

**Melting Point:** 105 °C (221 °F)

**Specific Gravity/ Relative Density (water = 1; air = 1):** 2.22

**Evaporation Rate (water = 1):** Not applicable

**Volatile Organic Compounds Content:** Not applicable

**Partition Coefficient (n-octanol / water):** Not applicable

**Solubility:**

**Water:** Soluble

**Acid:** Soluble

**Other:** Not determined

**Metal Corrosivity:**

**Steel:** Not applicable

**Aluminum:** Not applicable

---

## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.

**Conditions to Avoid:** Extreme temperatures

**Reactivity / Incompatibility:** Incompatible with: oxidizers dyes alkalies iron copper

**Hazardous Decomposition:** Heating to decomposition releases: carbon dioxide carbon monoxide sulfur oxides potassium oxide sodium oxides

**Hazardous Polymerization:** Will not occur.

---

## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**

**LD50:** ATE Oral Rat LD50 = 2367 mg/kg

**LC50:** ATE Inhalation Rat LC50 > 87 mg/L/4 hr

**Dermal Toxicity Data:** None reported

**Skin and Eye Irritation Data:** Not corrosive to skin, no erythema

**Mutation Data:** None reported

**Reproductive Effects Data:** None reported

**Ingredient Toxicological Data:** Potassium Pyrosulfate: Oral Rat LD50 = 2340 mg/kg. Sodium Molybdate: Oral Rat LD50 = 250-4000 mg/kg; Inhalation Rat LC50 > 2.08 mg/L/4 hr. EDTA Tetrasodium salt: Oral Rat LD50 = 1780 mg/kg. Potassium Antimonyl Tartrate: Oral Rat LD50 = 115 mg/kg.

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product. No bioaccumulation potential. Mobility in soil: High. Based on classification principles, not classified as hazardous to the environment.

**Ingredient Ecological Information:** Potassium Antimonyl Tartrate: 96 hr Fish LC50 = 12.5 mg/L; 48 hr Daphnia magna EC50 = 5 mg/L

CEPA categorization for ingredients are as follows:

Potassium antimonyl tartrate: Persistent and inherently toxic to aquatic organisms.

---

## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** None

**Special Instructions (Disposal):** Work in an approved fume hood. Dilute material with excess water making a weaker than 5% solution. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. If permitted by regulation, Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system. Otherwise, Check with national, local municipal and state authorities and waste contractors for pertinent local information on the disposal of this article.

**Empty Containers:** Rinse three times with an appropriate solvent. Collect rinsate and dispose of according to local, state or federal regulations. In the US, rinsate from empty containers is classified as hazardous waste and should be disposed of at an E.P. A. approved facility. Dispose of empty container as normal trash.

**NOTICE (Disposal):** These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information.

---

## 14. TRANSPORT INFORMATION

### **D.O.T.:**

**D.O.T. Proper Shipping Name:** Not Currently Regulated

--

**DOT Hazard Class:** NA

**DOT Subsidiary Risk:** NA

**DOT ID Number:** NA

**DOT Packing Group:** NA

### **I.C.A.O.:**

**I.C.A.O. Proper Shipping Name:** Not Currently Regulated

--

**ICAO Hazard Class:** NA

**ICAO Subsidiary Risk:** NA

**ICAO ID Number:** NA

**ICAO Packing Group:** NA

### **I.M.O.:**

**I.M.O. Proper Shipping Name:** Not Currently Regulated

--

**I.M.O. Hazard Class:** NA

**I.M.O. Subsidiary Risk:** NA

**I.M.O. ID Number:** NA

**I.M.O. Packing Group:** NA

**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 set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

---

## 15. REGULATORY INFORMATION

### **U.S. Federal Regulations:**

**O.S.H.A.:** This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard. (29 CFR 1910.1200)

### **E.P.A.:**

**S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370):** Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard

**S.A.R.A. Title III Section 313 (40 CFR 372):** This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

--

**302 (EHS) TPQ (40 CFR 355):** Not applicable

**304 CERCLA RQ (40 CFR 302.4):** Not applicable

**304 EHS RQ (40 CFR 355):** Not applicable

**Clean Water Act (40 CFR 116.4):** Not applicable

**RCRA:** Contains no RCRA regulated substances.

**C.P.S.C.:** Not applicable

### **State Regulations:**

**California Prop. 65:** No Prop. 65 listed chemicals are present in this product.

**Identification of Prop. 65 Ingredient(s):** None

**California Perchlorate Rule CCR Title 22 Chap 33:** Not applicable

*Trade Secret Registry:* Not applicable

**National Inventories:**

*U.S. Inventory Status:* All ingredients in this product are listed on the TSCA 8(b) Inventory (40 CFR 710).

*TSCA CAS Number:* Not applicable

---

## 16. OTHER INFORMATION

**Intended Use:** Laboratory Use Phosphate determination

**References:** TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. In-house information. Technical Judgment. Outside Testing. NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards. Cincinnati: Department of Health and Human Services, 1981. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. Vendor Information. Patty, Frank A. Industrial Hygiene and Toxicology, 3rd Revised Edition. Volume 2. New York: A Wiley-Interscience Publication, 1981.

**Revision Summary:** Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3).

---

**Legend:**

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

**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 ©2014