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

MSDS No: M00038

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: PhosVer ® 3 Phosphate Reagent
Catalog Number: 220999

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: M00038
Chemical Name: Not applicable
CAS No.: Not applicable
Chemical Formula: Not applicable
Chemical Family: Not applicable
PIN: NA
Intended Use: Phosphate determination
Date of MSDS Preparation:
Day: 15
Month: October
Year: 2009
MSDS Prepared: MSDS prepared by Product Compliance Department extension 3350

2. COMPOSITION / INFORMATION ON INGREDIENTS

Potassium Pyrosulfate
Percent Range: 70.0 - 80.0
Percent Range Units: weight / weight
CAS No.: 7790-62-7
LD50: Oral rat LD50 = 2340 mg/kg
LC50: None reported
TLV: Not established
PEL: Not established
Ingredient WHMIS Symbol: Other Toxic Effects

Ascorbic Acid
Percent Range: 20.0 - 30.0
Percent Range Units: weight / weight
CAS No.: 50-81-7
LD50: Oral rat LD50 = 11900 mg/kg
LC50: None reported
TLV: Not established
PEL: Not established
Ingredient WHMIS Symbol: Not applicable

Sodium Molybdate
Percent Range: 1.0 - 10.0
Percent Range Units: weight / weight
CAS No.: 10102-40-6
LD50: Oral rat LD_{50} = 4000 mg/kg.
LC50: Inhalation rat LC50 = > 2080 mg/m^3/4 hrs

TLV: 5 mg/m³ (as Mo)
PEL: 5 mg/m³ (as Mo)
Ingredient WHMIS Symbol: Not applicable

Other components, each
Percent Range: < 1.0
Percent Range Units: weight / weight
CAS No.: Not applicable
LD50: Not applicable
LC50: Not applicable
TLV: Not established
PEL: Not established
Ingredient WHMIS Symbol: Not applicable

3. HAZARDS IDENTIFICATION

Emergency Overview:
Appearance: White to off-white powder
Physical State: Solid
Odor: None
CAUSES EYE BURNS MAY CAUSE RESPIRATORY TRACT IRRITATION

HMIS:
Health: 3
Flammability: 1
Reactivity: 0
Protective Equipment: X - See protective equipment, Section 8.
Potential Health Effects:
Eye Contact: Causes eye burns.
Skin Contact: No effects are anticipated
Skin Absorption: None Reported
Target Organs: None Reported
Ingestion: May cause: copper deficiency anemia gout loss of coordination loss of appetite listlessness diarrhea liver damage May effect enzyme activity.
Target Organs: Blood Liver
Inhalation: May cause: respiratory tract irritation 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 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
WHMIS Hazard Classification: Class D, Division 2, Subdivision B - Toxic material (other toxic effects)
WHMIS Symbols: Other Toxic Effects

4. FIRST AID

Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.
Skin Contact (First Aid): Wash skin with plenty of water.

Ingestion (First Aid): Do not induce vomiting. Give 1-2 glasses of water. Call physician immediately. Never give anything by mouth to an unconscious person.
Inhalation: Remove to fresh air. Give artificial respiration if necessary. Call physician.

5. FIRE FIGHTING MEASURES

Flammable Properties: Can burn in fire, releasing toxic vapors.
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
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 should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.
Containment Technique: Stop spilled material from being released to the environment.
Clean-up Technique: Scoop up spilled material into a large beaker and dissolve with water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Flush reacted material to the drain with a large excess of water. 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.
D.O.T. Emergency Response Guide Number: NONE

7. HANDLING / STORAGE

Handling: Avoid contact with eyes clothing Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.
Storage: Store between 10° and 25°C.

8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

Engineering Controls: Have a safety shower nearby. Maintain general industrial hygiene practices when using this product.
Personal Protective Equipment:
Eye Protection: safety glasses with top and side shields
Skin Protection: disposable latex gloves lab coat
Inhalation Protection: adequate ventilation
Precautionary Measures: Avoid contact with: eyes Do not breathe: dust Wash thoroughly after handling. Protect from: heat
TLV: Not established
PEL: Not established

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: White to off-white powder
Physical State: Solid
Molecular Weight: Not applicable
Odor: None
pH: of a 5% Solution = 1.1

Vapor Pressure: Not applicable
Vapor Density (air = 1): Not applicable
Boiling Point: Not applicable
Melting Point: 190 °C (374 °F)
Specific Gravity (water = 1): 2.17
Evaporation Rate (water = 1): Not applicable
Volatile Organic Compounds Content: Not applicable
Coefficient of Water / Oil: 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
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Product Toxicological Data:
LD50: None reported
LC50: None reported
Dermal Toxicity Data: None reported
Skin and Eye Irritation Data: None reported
Mutation Data: None reported
Reproductive Effects Data: None reported
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Ingredient Toxicological Data: Potassium Pyrosulfate Oral rat LD50 = 2340 mg/kg; Sodium Molybdate Oral rat LD50 = 4000 mg/kg, Inhalation rat LC50 > 2080mg/m^3/4hr; Ascorbic Acid Oral rat LD50 = 11.9 g/kg

12. ECOLOGICAL INFORMATION

Product Ecological Information: --
No ecological data available for this product.
Ingredient Ecological Information: --
No ecological data available for the ingredients of this product.

13. DISPOSAL CONSIDERATIONS

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. 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.
Empty Containers: Rinse three times with an appropriate solvent. 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

T.D.G.:
Proper Shipping Name: Not Currently Regulated
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Hazard Class: NA
PIN: NA
Group: NA
Subsidiary Risk: 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

National Inventories:

Canadian Inventory Status: All ingredients of this product are DSL Listed.

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

16. OTHER INFORMATION

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.

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.

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