

The following list contains the Material Safety Data Sheets you requested. Please scroll down to view the requested MSDS(s).

Product	MSDS	Distributor	Format	Language	Quantity
P3103	2499049	Hach Company	OSHA	English	1

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Total Enclosures: 1

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

MSDS No: M00048

# MATERIAL SAFETY DATA SHEET

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## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** ZincoVer® 5 Zinc Reagent

**Catalog Number:** 2499049

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:** M00048

**Chemical Name:** Not applicable

**CAS No.:** Not applicable

**Chemical Formula:** Not applicable

**Chemical Family:** Not applicable

**Hazard:** Toxic.

**Date of MSDS Preparation:**

**Day:** 28

**Month:** January

**Year:** 2009

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## 2. COMPOSITION / INFORMATION ON INGREDIENTS

### Potassium Borate

**CAS No.:** 1332-77-0

**TSCA CAS Number:** 1332-77-0

**Percent Range:** 50.0 - 60.0

**Percent Range Units:** weight / weight

**LD50:** Oral rat LD50 = 3690 mg/kg

**LC50:** None reported

**TLV:** Not established

**PEL:** Not established

**Hazard:** May cause irritation.

### Other component

**CAS No.:** Not applicable

**TSCA CAS Number:** Not applicable

**Percent Range:** 0.01 - 0.1

**Percent Range Units:** weight / weight

**LD50:** Not applicable

**LC50:** Not applicable

**TLV:** Not established

**PEL:** Not established

**Hazard:** Any ingredient(s) of this product listed as "Other component(s)" is not considered a health hazard to the user of this product.

### Boron Oxide

**CAS No.:** 1303-86-2

**TSCA CAS Number:** 1303-86-2  
**Percent Range:** 15.0 - 25.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral mouse LD50 = 3163 mg/kg  
**LC50:** None reported  
**TLV:** 10 mg/m<sup>3</sup>  
**PEL:** 15 mg/m<sup>3</sup>  
**Hazard:** May cause irritation.

#### **Sodium Ascorbate**

**CAS No.:** 134-03-2  
**TSCA CAS Number:** 134-03-2  
**Percent Range:** 20.0 - 30.0  
**Percent Range Units:** weight / weight  
**LD50:** None reported  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** May cause irritation.

#### **Potassium Cyanide**

**CAS No.:** 151-50-8  
**TSCA CAS Number:** 151-50-8  
**Percent Range:** 1.0 - 10.0  
**Percent Range Units:** weight / weight  
**LD50:** Oral human LD Lo = 2.857 mg/kg; Oral rat LD<sub>50</sub> = 5 mg/kg; Ocular rabbit LD<sub>50</sub> = 7.87 mg/kg.  
**LC50:** None reported  
**TLV:** 5 mg/m<sup>3</sup> (skin)  
**PEL:** 5 mg/m<sup>3</sup> (skin)  
**Hazard:** Fast-acting poison.

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### **3. HAZARDS IDENTIFICATION**

#### ***Emergency Overview:***

**Appearance:** Purple

**Odor:** Not determined

MAY BE FATAL IF SWALLOWED HARMFUL IF INHALED OR ABSORBED THROUGH SKIN  
MAY CAUSE EYE AND RESPIRATORY TRACT IRRITATION

#### **CONTACT WITH ACIDS FORMS TOXIC FUMES**

Emergency response to cyanide exposure should be planned and practiced prior to work with cyanides. First responders should start treatment and get medical attention immediately. Antidote: break an amyl nitrite pearl in cloth and hold lightly under nose for 15 seconds. Repeat 5 times at 15 second intervals. Transport to hospital immediately. Note to Physician: Have a cyanide first aid kit available. If patient has not responded to amyl nitrite, inject intravenously 10 ml of a 3% solution of sodium nitrite at a rate not greater than 2.5 - 5 ml/min. Follow directly with 50 ml of a 25 % solution of sodium thiosulfate at the same rate by the same route. Keep patient under observation. If signs of poisoning persist or reappear, repeat nitrite and thiosulfate injections 1 hour later in one-half the original doses.

#### ***HMIS:***

**Health:** 3

**Flammability:** 0

**Reactivity:** 1

**Protective Equipment:** X - See protective equipment, Section 8.

**NFPA:**

**Health:** 3

**Flammability:** 0

**Reactivity:** 1

**Symbol:** Not applicable

**Potential Health Effects:**

**Eye Contact:** May cause irritation

**Skin Contact:** May cause irritation

**Skin Absorption:** Harmful if absorbed through the skin

**Target Organs:** Brain

**Ingestion:** May be rapidly fatal. May cause: gastrointestinal irritation confusion irregular heartbeat

**Target Organs:** Brain

**Inhalation:** May cause: irritation of nose and throat irregular heartbeat confusion

**Target Organs:** Brain

**Medical Conditions Aggravated:** Pre-existing: Respiratory conditions Skin conditions

**Chronic Effects:** Chronic overexposure may cause brain damage

**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. an experimental teratogen.

**Toxicologically Synergistic Products:** None reported

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## 4. FIRST AID

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

**Skin Contact (First Aid):** Wash skin with soap and plenty of water for 15 minutes. Remove contaminated clothing. Call physician immediately.

**Ingestion (First Aid):** Break an amyl nitrite pearl in cloth and hold lightly under nose for 15 seconds. Repeat every five minutes. Administer artificial respiration with 100% oxygen. Transport to hospital immediately.

**Inhalation:** Break an amyl nitrite pearl in cloth and hold lightly under nose for 15 seconds. Repeat 5 times at 15 second intervals. Transport to hospital immediately.

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## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Combustion generates toxic fumes. Dusts at sufficient concentrations can form explosive mixtures with air.

**Flash Point:** Not applicable

**Method:** Not applicable

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Autoignition Temperature:** Not applicable

**Hazardous Combustion Products:** Toxic fumes of: cyanide compounds nitrogen oxides. potassium oxides boron compounds

**Fire / Explosion Hazards:** High concentrations of dust may form an explosive mixture with air.

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Alkali dry chemical. Do NOT use carbon dioxide.

**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear. Evacuate area and fight fire from a safe distance. Water runoff can cause environmental damage. Dike and collect water used to fight fire.

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## 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.

***Containment Technique:*** Releases of this material may contaminate the environment. Stop spilled material from being released to the environment.

***Clean-up Technique:*** Carefully mist spill with bleach until saturated. Scoop up slurry into a large beaker. Oxidize spilled material with a 50% excess of bleach containing at least 5% sodium hypochlorite. Allow to react for 24 hours in a fume hood. Flush reacted material to the drain with a large excess of water. Decontaminate area with bleach solution.

***Evacuation Procedure:*** Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: any quantity is spilled. If conditions warrant, increase the size of the evacuation.

***Special Instructions (for accidental release):*** Mixture contains a component which is regulated as hazardous waste. Mixture contains a component which is regulated as a hazardous air pollutant. Mixture contains a component which is regulated as a water pollutant.

***304 EHS RQ (40 CFR 355):*** Potassium Cyanide 10 lbs

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

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## 7. HANDLING / STORAGE

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

***Storage:*** Protect from: moisture Keep away from: acids

***Flammability Class:*** Not applicable

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## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

***Engineering Controls:*** Have an eyewash station nearby. Use a fume hood to avoid exposure to dust, mist or vapor. 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:*** laboratory fume hood

***Precautionary Measures:*** Avoid contact with: eyes skin clothing Do not breathe: dust Wash thoroughly after handling. Keep away from: acids/acid fumes Protect from: moisture

***TLV:*** Not established

***PEL:*** Not established

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## 9. PHYSICAL / CHEMICAL PROPERTIES

***Appearance:*** Purple

***Physical State:*** Solid

***Molecular Weight:*** Not applicable

***Odor:*** Not determined

***pH:*** of 5% solution = 8.7

***Vapor Pressure:*** Not applicable

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

***Boiling Point:*** Not applicable

***Melting Point:*** 155°C 311°F

***Specific Gravity (water = 1):*** 1.83

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

**Volatile Organic Compounds Content:** Not determined

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

**Solubility:**

**Water:** Soluble

**Acid:** Generates HCN

**Other:** Not determined

**Metal Corrosivity:**

**Steel:** Not determined

**Aluminum:** Not determined

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## 10. STABILITY / REACTIVITY

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

**Conditions to Avoid:** Excess moisture Heating to decomposition.

**Reactivity / Incompatibility:** Incompatible with: acids

**Hazardous Decomposition:** Toxic fumes of: cyanide boron compounds nitrogen oxides potassium oxide  
Contact with acids/acid fumes releases toxic cyanide gas.

**Hazardous Polymerization:** Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**

**LD50:** Oral rat LD<sub>50</sub> = 383 mg/kg

**LC50:** None reported

**Dermal Toxicity Data:** None reported

**Skin and Eye Irritation Data:** None reported

**Mutation Data:** None reported

**Reproductive Effects Data:** None reported

**Ingredient Toxicological Data:** Boron Oxide: Oral mouse LD<sub>50</sub> = 3163 mg/kg, Potassium Cyanide: Oral human LDLo = 2.857 mg/kg, Oral rat LD<sub>50</sub> = 5mg/kg, Potassium Borate: Oral rat LD<sub>50</sub> = 3690 mg/kg

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## 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.

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## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** D003

**Special Instructions (Disposal):** Dispose of material in an E.P.A. approved hazardous waste facility.

**Empty Containers:** Rinse three times with an appropriate solvent. Rinsate from empty containers may contain sufficient product to require disposal as hazardous waste. 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.

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## 14. TRANSPORT INFORMATION

**D.O.T.:**

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

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*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

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*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

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*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. ALSO NOTE: If the National Competent Authority declares this product an environmental hazard by Special Provision 909 (IMDG) and Special Provision A97 (IATA) the classification may be UN3077 or UN3082.

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## 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 contains a chemical(s) subject to the reporting requirements of Section 313 of Title III of SARA.

Potassium Cyanide

**302 (EHS) TPQ (40 CFR 355):** Potassium Cyanide - RQ 100 lbs.

**304 CERCLA RQ (40 CFR 302.4):** Potassium cyanide 10 lbs.

**304 EHS RQ (40 CFR 355):** Potassium Cyanide 10 lbs

**Clean Water Act (40 CFR 116.4):** Potassium cyanide - RQ 10 lbs.

**RCRA:** Contains RCRA regulated substances. See Section 13, EPA Waste ID Number.

**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):** Not applicable

**California Perchlorate Rule CCR Title 22 Chap 33:**

**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

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## 16. OTHER INFORMATION

**Intended Use:** Determination of zinc

**References:** 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. In-house information. Technical Judgment. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992.

**Revision Summary:** Updates in Section(s) 14,

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**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.**

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