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

Product	MSDS	Distributor	Format	Language	Quantity
2106669	N/A	Hach Company	ROWGHS	English	1

Total Enclosures: 1

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

MSDS No: M00048

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: ZincoVer ® 5 Zinc Reagent
Catalog Number: 2106669

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 Number: Not applicable
Additional CAS No. (for hydrated forms): Not applicable
Chemical Formula: Not applicable
Chemical Family: Not applicable
Intended Use: Laboratory Reagent Determination of zinc

2. HAZARDS IDENTIFICATION

GHS Classification:

Hazard categories: Acute Toxicity: Acute Tox. 4-Orl Acute Toxicity: Acute Tox. 3-Derm Acute Toxicity: Acute Tox. 4-Inh Skin Corrosion/Irritation: Skin Irrit. 2 Serious Eye Damage/Eye Irritation:Eye Irrit. 2 Reproductive Toxicity: Repr. 1B Specific Target Organ Toxicity - Single Exposure: STOT SE 3 Hazardous to the Aquatic Environment: Aquatic Acute 1 Hazardous to the Aquatic Environment: Aquatic Chronic 1

GHS Label Elements:

DANGER

Hazard statements: Toxic if swallowed. Toxic in contact with skin. Harmful if inhaled. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May damage fertility. Suspected of damaging the unborn child. Causes damage to liver through prolonged or repeated exposure by inhalation. Very toxic to aquatic life with long lasting effects. May damage fertility. May damage the unborn child. Harmful if swallowed. Very toxic to aquatic life. Contact with acids liberates very toxic gas.

Precautionary statements: If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Rinse mouth. IF exposed or concerned: Get medical advice/attention. Obtain special instructions before use. Avoid breathing dust/fume/gas/mist/vapours/spray. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Collect spillage. Store in a well-ventilated place. Keep container tightly closed. Do not breathe dust/fume/gas/mist/vapours/spray. Do no eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Handle environmental release according to local, state, federal, provincial requirements. Wear eye protection. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF ON SKIN: Wash with plenty of soap and water. IF INHALED: Remove victim/person to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell. Remove/Take off immediately all contaminated clothing. Dispose of contents/container according to state, local, federal or national regulations.

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

WHMIS Hazard Classification: Class D, Division 1, Subdivision A - Very toxic materials (immediate effects) Class D, Division 2, Subdivision B - Toxic material (other toxic effects)
WHMIS Symbols: Acute Poison Other Toxic Effects

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3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components according to GHS:

Potassium Borate

CAS Number: 1332-77-0
Chemical Formula: $K_2B_4O_7$
GHS Classification: Acute Tox. 5 -Orl, H303; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT Single 3, H335; Repr. 1B, H360
Percent Range (Trade Secret): 50.0 - 60.0
Percent Range Units: weight / weight
PEL: 15 mg/m^3 as inhalable dust; 5 mg/m^3 as respirable dust
TLV: 10 mg/m^3 as inhalable dust; 3 mg/m^3 as respirable dust

WHMIS Symbols: Other Toxic Effects

Boron Oxide

CAS Number: 1303-86-2
Chemical Formula: B_2O_3
GHS Classification: Acute Tox. 5 -Orl, H303; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT Single 3, H335; Repr. 1B, H360
Percent Range (Trade Secret): 15 - 20
Percent Range Units: weight / weight
PEL: 15 mg/m^3
TLV: 10 mg/m^3

WHMIS Symbols: Other Toxic Effects

Potassium Cyanide

CAS Number: 151-50-8
Chemical Formula: KCN
GHS Classification: Met. Corr. 1, H290; Acute Tox. 2 -Orl, H300; Acute Tox. 1 -Derm, H310; Acute Tox. 2 -Inh, H330; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Aquatic Acute 1, H400; Aquatic Chronic 1, H410;
Percent Range (Trade Secret): 1.0 - 5.0
Percent Range Units: weight / weight
PEL: 5 mg/m^3 (skin)
TLV: 5 mg/m^3 (skin)

WHMIS Symbols: Acute Poison

Hazardous Components according to GHS: No

Zincon

CAS Number: 62625-22-3
Chemical Formula: $C_{20}H_{15}N_4O_6S.Na$
GHS Classification: Not hazardous per GHS
Percent Range (Trade Secret): < 0.5
Percent Range Units: weight / weight
PEL: Not established
TLV: Not established

WHMIS Symbols: Not applicable

Sodium Ascorbate

CAS Number: 134-03-2
Chemical Formula: $C_6H_7O_6 \cdot Na$
GHS Classification: Not applicable
Percent Range (Trade Secret): 20.0 - 25.0
Percent Range Units: weight / weight
PEL: 15 mg/m^3 as inhalable dust; 5 mg/m^3 as respirable dust
TLV: 10 mg/m^3 as inhalable dust; 3 mg/m^3 as respirable dust

WHMIS Symbols: Not applicable

4. FIRST AID MEASURES

General Information: In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.
Advice to doctor: Treat symptomatically. If patient has not responded to amyl nitrite, inject intraveneously 10 mL of a 3% solution of sodium nitrite at a rate not greater than 2.5 - 5 mL/min.
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 intraveneously 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.
Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician immediately.
Skin Contact (First Aid): Wash skin with soap and plenty of water for 15 minutes. Remove contaminated clothing. Call physician immediately.
Inhalation: Remove to fresh air. Always have on hand a cyanide first aid kit. Break an amyl nitrite pearl in cloth and hold lightly under nose for 15 seconds. Break an amyl nitrite pearl in cloth and hold lightly under nose for 15 seconds. Call physician.
Ingestion (First Aid): Call physician immediately. Never give anything by mouth to an unconscious person. Always have on hand a cyanide first aid kit. Break an amyl nitrite pearl in cloth and hold lightly under nose for 15 seconds.

5. FIRE FIGHTING MEASURES

Flammable Properties: Combustion generates toxic fumes. Dusts at sufficient concentrations can form explosive mixtures with air. Not applicable
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.
Extinguishing Media: Alkali dry chemical. Do NOT use carbon dioxide.
Extinguishing Media NOT To Be Used: Not applicable Do NOT use carbon dioxide.
Fire / Explosion Hazards: High concentrations of dust may form an explosive mixture with air.
Hazardous Combustion Products: Toxic fumes of: cyanide compounds nitrogen oxides. potassium oxides boron compounds

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: Releases of this material may contaminate the environment. Stop spilled material from being released to the environment.
Clean-up Technique: If permitted by regulation, 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. Otherwise, Pick up spill for disposal and place in a closed container Dispose of in accordance with local, state and federal regulations or laws.
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.
DOT Emergency Response Guide Number: Not applicable

7. HANDLING AND 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

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: 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 In the EU, the selected gloves must satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it.
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
For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Purple
Physical State: Solid
Molecular Weight: Not applicable
Odor: Not determined
Odor Threshold: Not available
pH: of 5% solution = 8.7
Metal Corrosivity:
Corrosivity Classification: Not classified as corrosive to metals according to GHS criteria.
Steel: Not determined
Aluminum: Not determined
Specific Gravity/ Relative Density (water = 1; air =1): 1.83
Viscosity: Not determined
Solubility:
Water: Soluble
Acid: Generates HCN
Other: Not determined
Partition Coefficient (n-octanol / water): Not determined
Coefficient of Water / Oil: Not determined
Melting Point: 155°C 311°F
Decomposition Temperature: Not determined
Boiling Point: Not applicable
Vapor Pressure: Not applicable
Vapor Density (air = 1): Not applicable
Evaporation Rate (water = 1): Not applicable
Volatile Organic Compounds Content: Not determined
Flammable Properties: Not applicable
Flash Point: Not applicable
Method: Not applicable
Flammability Limits:
Lower Explosion Limits: Not applicable
Upper Explosion Limits: Not applicable

Autoignition Temperature: Not applicable
Explosive Properties:
Not classified according to GHS criteria.
Oxidizing Properties:
Not classified according to GHS criteria.
Reactivity Properties:
Not classifed as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.
Gas under Pressure:
Not classified according to GHS criteria.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Mechanical Impact: None reported
Static Discharge: None reported.
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.
Conditions to Avoid: Excess moisture Heating to decomposition.

11. TOXICOLOGICAL INFORMATION

Toxicokinetics, Metabolism and Distribution: No information available for mixture.
Toxicologically Synergistic Products: None reported
Acute Toxicity: Toxicological Testing and/or Acute Toxicity Estimate (ATE) - Calculated from Ingredient Toxicity Data
Testing data: oral rat LD50 = 383 mg/Kg
ATE Dermal Rat LD50 = 423 mg/Kg
ATE Inhalation Rat LD50 = 1.9 mg/l
Specific Target Organ Toxicity - Single Exposure (STOT-SE): Based on classification principles, the classification criteria are not met.
Specific Target Organ Toxicity - Repeat Exposure (STOT-RE): Based on classification principles, the classification criteria are not met.
Skin Corrosion/Irritation: Mildly irritating to skin.
Eye Damage: Based on classification principles, the classification criteria are not met.
Sensitization: Based on classification principles, the classification criteria are not met.
CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction): Contains a reproductive toxin. Reported impairment of fertility by substance or ingredient of mixture.
This product does NOT contain any IARC listed chemicals.
This product does NOT contain any NTP listed chemicals.
This product does NOT contain any OSHA listed carcinogens.
Symptoms/Effects:
Ingestion: Harmful May cause: confusion gastrointestinal tract irritation irregular heartbeat
Inhalation: Harmful May cause: irritation of nose and throat confusion irregular heartbeat
Skin Absorption: Harmful if absorbed through the skin
Chronic Effects: Chronic overexposure may cause brain damage Reproductive toxicity by absorption via ingestion route inhalation route Reproductive toxity effects include impaired fertility harm to unborn child
Medical Conditions Aggravated: Pre-existing: Respiratory conditions Skin conditions

12. ECOLOGICAL INFORMATION

Product Ecological Information: --
No ecological data available for this product. Mobility in soil: No data available
Ingredient Ecological Information: Boron oxide: Carassuis Auratus LC_{50} 0.57 g/L 3 day; Daphnia magna LC_{50} 370-490 mg/L at 48hrs; potassium cyanide: Fish 96hr LC50 = 0.068 mg/l; Crustaceas 48 hr LC50 = 0.25 mg/l
Potassium Borate, Boron Oxide: Persistent, not bioaccumulative or inherently toxic to aquatic organisms; Potassium Cyanide: Persistent, inherently toxic to aquatic organisms, not bioaccumulative.

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. 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. 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. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

14. TRANSPORT INFORMATION

D.O.T.:
D.O.T. Proper Shipping Name: Cyanides, inorganic, solid, nos
(Potassium cyanide mixture)
Hazard Class: 6.1
Subsidiary Risk: NA
ID Number: UN1588
Packing Group: III
T.D.G.:
Proper Shipping Name: Cyanides, inorganic, solid, nos
Hazard Class: 6.1
Subsidiary Risk: 6.1
UN Number/PIN: 1588
Packing Group: III
I.C.A.O.:
I.C.A.O. Proper Shipping Name: Cyanides, inorganic, solid, nos
(Potassium cyanide mixture)
Hazard Class: 6.1
Subsidiary Risk: NA
ID Number: UN1588
Packing Group: III
I.M.O.:
Proper Shipping Name: Cyanides, inorganic, solid, nos
(Potassium cyanide mixture)
Hazard Class: 6.1
Subsidiary Risk: NA
ID Number: UN1588
Packing Group: III
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.

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.

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: 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).
CAS Number: Not applicable
Canadian Inventory Status: All ingredients of this product are DSL/NDSL Listed.
EEC Inventory Status: All ingredients used to make this product are listed on EINECS / ELINCS.
Australian Inventory (AICS) Status: All ingredients are listed.
New Zealand Inventory (NZIoC) Status: All components either listed or exempt.
Korean Inventory (KECI) Status: Some ingredients are not listed or exempt.
Japan (ENCS) Inventory Status: All components either listed or exempt.
China (PRC) Inventory (MEP) Status: Some ingredients are not listed or exempt.

16. OTHER INFORMATION

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. IUCLID Dataset Year 2000 for CAS No. Directive 98/8/EC Assessment Report Boric Oxide 20 February 2009 COMMISSION REGULATION (EC) No 790/2009 (ATP 30)

Complete Text of H phrases referred to in Section 3: H290 May be corrosive to metals. H300 Fatal if swallowed. Not applicable H310 Fatal in contact with skin. H315 Causes skin irritation. H319 Causes serious eye irritation. H330 Fatal if inhaled. H335 May cause respiratory irritation. H360FD May damage fertility. May damage the unborn child. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects.

Revision Summary: Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SG/AC.10/36/Add.3). 2,

Date of MSDS Preparation:
Day: 02
Month: September
Year: 2014

MSDS Prepared: MSDS prepared by Product Compliance Department extension 3350

CCOHS Evaluation Note: It is offered under exemption from WHMIS labeling as specified in the Controlled Products Regulation (CPR) Section 17. It is offered under the interim policy that was established by Health Canada permitting use of GHS-formatted safety data sheets in Canada prior to revision of CPR to GHS. This product has been classified and labeled in accordance with the requirements of GHS (ST/SG/AC.10/36/Add.3). This SDS has been prepared in accordance with the requirements of 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.

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