

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

MSDS No: M00635

## SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** ManVer ® Hardness Indicator  
**Catalog Number:** 42549

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:** M00635  
**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 Indicator for hardness

### 2. HAZARDS IDENTIFICATION

**GHS Classification:**

**Hazard categories:** Flammable Liquids: Flam. Liq. 3 Corrosive to Metals: Met. Corr. 1 Carcinogenicity: Carc. 2  
Respiratory or Skin Sensitization: Skin Sens.1

**GHS Label Elements:**  
WARNING



**Hazard statements:** Suspected of causing cancer. Flammable liquid and vapour. May be corrosive to metals. May cause an allergic skin reaction. Suspected of causing cancer by inhalation.

**Precautionary statements:** Keep only in original container. Use personal protective equipment as required. IF ON SKIN: Wash with plenty of soap and water. IF exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. Call a POISON CENTER or doctor/physician if you feel unwell. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Avoid breathing dust/fume/gas/mist/vapours/spray. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

**HMIS:**

**Health:** 2\*

**Flammability:** 3

**Reactivity:** 0

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

**NFPA:**

**Health:** 1

**Flammability:** 3

**Reactivity:** 0

**Symbol:** Not applicable

**WHMIS Hazard Classification:** Class D, Division 1, Subdivision B - Toxic material (immediate effects) Class B, Division 2 - Flammable liquids

**WHMIS Symbols:** Acute Poison Flammable / Combustible

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### 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Hazardous Components according to GHS:**

**Isopropanol**

**CAS Number:** 67-63-0

**Chemical Formula:** C<sub>3</sub>H<sub>8</sub>O

**GHS Classification:** Flam. Liq. 2, H225; Eye Irrit. 2A, H319; STOT SE 3, H336; STOT RE 2, H373

**Percent Range:** < 5.0

**Percent Range Units:** weight / weight

**PEL:** 400 ppm (980 mg/m<sup>3</sup>)

**TLV:** 200 ppm (492 mg/m<sup>3</sup>)

**WHMIS Symbols:** Flammable / Combustible Other Toxic Effects

**Hydroxylamine Hydrochloride**

**CAS Number:** 5470-11-1

**Chemical Formula:** NH<sub>2</sub>OH·HCl

**GHS Classification:** Met. Corr. 1, H290; Carc. 2, H351; Acute Tox. 4, H312; Acute Tox. 3-Orl, H301; STOT RE 2, H373; Eye Irrit. 2, H319; Skin Irrit. 2, H315; Skin Sens. 1, H317; Aquatic Acute 1, H400

**Percent Range:** 1.0 - 10.0

**Percent Range Units:** weight / volume

**PEL:** 15 mg/m<sup>3</sup> as inhalable dust; 5 mg/m<sup>3</sup> as respirable dust

**TLV:** 10 mg/m<sup>3</sup> as inhalable dust; 3 mg/m<sup>3</sup> as respirable dust

**WHMIS Symbols:** Acute Poison Other Toxic Effects Corrosive Dangerously Reactive Material

**Calmagite**

**CAS Number:** 3147-14-6

**Chemical Formula:** C<sub>17</sub>H<sub>14</sub>N<sub>2</sub>O<sub>5</sub>·S·H<sub>2</sub>O

**GHS Classification:** Skin Irrit 2, H315; Eye Irrit 2A, H319; STOT Single 3, H335

**Percent Range:** < 0.1

**Percent Range Units:** weight / volume

**PEL:** Not established

**TLV:** Not established

**WHMIS Symbols:** Other Toxic Effects

**Hazardous Components according to GHS: No**

**Propylene Glycol**

**CAS Number:** 57-55-6

**Chemical Formula:** C<sub>3</sub>H<sub>8</sub>O<sub>2</sub>

**GHS Classification:** Not a dangerous substance according to GHS.

**Percent Range:** 90.0 - 100.0

**Percent Range Units:** volume / volume

**PEL:** Not established

**TLV:** Not established

**WHMIS Symbols:** Not applicable

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### 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.

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

**Skin Contact (First Aid):** Wash skin with soap and plenty of water. Call physician if irritation develops. Remove contaminated clothing.

**Inhalation:** Remove to fresh air.

**Ingestion (First Aid):** Do not induce vomiting. Give 1-2 glasses of water. Never give anything by mouth to an unconscious person. Call physician immediately.

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## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Combustion generates toxic fumes.

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

**Extinguishing Media:** Alcohol foam.

**Extinguishing Media NOT To Be Used:** Not applicable

**Fire / Explosion Hazards:** May react violently with: strong oxidizers Do not expose to sparks or other ignition sources.

**Hazardous Combustion Products:** Toxic fumes of: chlorides carbon monoxide, carbon dioxide.

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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. 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. Remove all combustible material from spill area. Remove all ignition and spark-creating sources from the spill area. Cover spilled liquid with a commercially available flammable liquid sorbent such as vapor barrier blanket or activated carbon to avoid evolution of fumes. Vapors may travel to a source of ignition and flash back. May be ignited by: heat, sparks, or flames. Dike the material to create a barrier to combustibles.

**Clean-up Technique:** Eliminate all sources of ignition. Do not breathe the fumes. Use only non-sparking tools. Cover spilled material with an alkali, such as soda ash or sodium bicarbonate. If permitted by regulation, Scoop up slurry into a large beaker. Dilute with a large excess of water. Filter to remove solids. Flush the spilled material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution. Otherwise, Dispose of in accordance with local, state and federal regulations or laws.

**Evacuation Procedure:** Evacuate general area (50 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:** 132

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## 7. HANDLING AND STORAGE

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

**Storage:** Keep away from: oxidizers Protect from: sparks, flames and other ignition sources

**Flammability Class:** Class IC

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**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:** disposable latex 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 skin clothing Do not breathe: mist/vapor Wash thoroughly after handling. Keep away from: oxidizers Protect from: sparks, flames and other ignition sources

**TLV:** Not established

**PEL:** Not established

**For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:**

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Dark red liquid

**Physical State:** Liquid

**Molecular Weight:** Not applicable

**Odor:** Fruity  
**Odor Threshold:** Not available  
**pH:** 1.09  
**Metal Corrosivity:**  
**Corrosivity Classification:** Classified as corrosive to metals.  
**Steel:** 0.288 in/yr  
**Aluminum:** 0.001 in/yr  
**Specific Gravity/ Relative Density (water = 1; air =1):** 1.01  
**Viscosity:** Not determined  
**Solubility:**  
**Water:** Soluble  
**Acid:** Soluble  
**Other:** Not determined  
**Partition Coefficient (n-octanol / water):** Not applicable  
**Coefficient of Water / Oil:** Not applicable  
**Melting Point:** Not determined  
**Decomposition Temperature:** Not determined  
**Boiling Point:** 118°C  
**Vapor Pressure:** Not determined  
**Vapor Density (air = 1):** Not determined  
**Evaporation Rate (water = 1):** 0.05  
**Volatile Organic Compounds Content:** Not determined  
**Flammable Properties:** Combustion generates toxic fumes.  
**Flash Point:** 25.7°C (78.3°F)  
**Method:** Closed cup  
**Flammability Limits:**  
**Lower Explosion Limits:** Not determined  
**Upper Explosion Limits:** Not determined  
**Autoignition Temperature:** Not determined  
**Explosive Properties:**  
Not classified according to GHS criteria.  
**Oxidizing Properties:**  
Not classified according to GHS criteria.  
**Reactivity Properties:**  
Not classified 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.

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## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.  
**Mechanical Impact:** None reported  
**Static Discharge:** None reported.  
**Reactivity / Incompatibility:** Incompatible with: oxidizers  
**Hazardous Decomposition:** Toxic fumes of: chlorides carbon monoxide carbon dioxide  
**Conditions to Avoid:** Contact with heat, sparks, open flames or other ignition sources. Heating to decomposition.

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## 11. TOXICOLOGICAL INFORMATION

**Toxicokinetics, Metabolism and Distribution:** No information available for mixture.  
**Toxicologically Synergistic Products:** None reported  
**Acute Toxicity:** Acute Toxicity Estimate (ATE) - Calculated from Ingredient Toxicity Data  
ATE Oral Rat LD50 = 2701 mg/kg  
ATE Dermal Rat LD50 = 20921 mg/kg  
**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:** Irritating to skin.  
**Eye Damage:** Based on classification principles, the classification criteria are not met.

**Sensitization:** Skin Sensitizer

**CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction):** Contains Listed Carcinogen  
Contains < 5% Hydroxylamine Hydrochloride

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:** Very large doses may cause: central nervous system effects dizziness drowsiness incoordination headache abdominal cramps rapid pulse and respirations convulsions Hydroxylamine Hydrochloride causes a decreased supply of oxygen to the tissues, blue discoloration of the skin, convulsions, drop in blood pressure and coma.

**Inhalation:** May cause: irritation of nose and throat

**Skin Absorption:** Will be absorbed through the skin. Effects similar to those of ingestion

**Chronic Effects:** Chronic overexposure may cause damage to red blood cells

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

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product. Mobility in soil: No data available

**Ingredient Ecological Information:** Hydroxylamine Hydrochloride: LC50 *Leuciscus idus* 48h = 1-10 mg/l;

CEPA Statement: Hydroxylamine Hydrochloride, Isopropanol and Calmagite: Persistent, not bioaccumulative or inherently toxic to aquatic organisms; Propylene Glycol: Not persistent, not bioaccumulative or inherently toxic to aquatic organisms.

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## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** D001 D002

**Special Instructions (Disposal):** Dilute to 3 to 5 times the volume with cold water. 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.

**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. 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.

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## 14. TRANSPORT INFORMATION

**D.O.T.:**

**D.O.T. Proper Shipping Name:** Flammable Liquid, Corrosive, N.O.S.

(<10% Isopropanol/Hydroxylamine Hydrochloride Solution)

**Hazard Class:** 3

**Subsidiary Risk:** 8

**ID Number:** UN2924

**Packing Group:** III

**T.D.G.:**

**Proper Shipping Name:** Flammable Liquid, Corrosive, N.O.S.

(<10% Isopropanol/Hydroxylamine Hydrochloride Solution)

**Hazard Class:** 3.3

**Subsidiary Risk:** 8

**UN Number/PIN:** 2924

**Packing Group:** III

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

**I.C.A.O. Proper Shipping Name:** FLAMMABLE LIQUID, CORROSIVE, N.O.S.

(<10% Isopropanol/Hydroxylamine Hydrochloride Solution)

**Hazard Class:** 3

**Subsidiary Risk:** 8

**ID Number:** UN2924

**Packing Group:** III

**I.M.O.:**

**Proper Shipping Name:** FLAMMABLE LIQUID, CORROSIVE, N.O.S.

(<10% Isopropanol/Hydroxylamine Hydrochloride Solution)

**Hazard Class:** 3  
**Subsidiary Risk:** 8  
**ID Number:** UN2924  
**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.

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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 Fire 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.

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**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 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):** 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).

**CAS Number:** Not applicable

**Canadian Inventory Status:** All ingredients of this product are DSL 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:** Not listed - exempt. Quantity < 100 kg per annum.

**Japan (ENCS) Inventory Status:** All components either listed or exempt.

**China (PRC) Inventory (MEP) Status:** All components either listed or exempt.

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## 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. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. 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.

**Complete Text of H phrases referred to in Section 3:** H226 Flammable liquid and vapour. H290 May be corrosive to metals. H351 Suspected of causing cancer. H317 May cause an allergic skin reaction.

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

### **Date of MSDS Preparation:**

**Day:** 14

**Month:** July

**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).

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**Legend:**

NA - Not Applicable

ND - Not Determined

NV - Not Available

w/w - weight/weight

w/v - weight/volume

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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