

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

MSDS No: M00635

## MATERIAL SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** ManVer ® Hardness Indicator  
**Catalog Number:** 42532

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 No.:** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Hazard:** Causes irritation. Flammable. May cause allergic reaction.  
**Date of MSDS Preparation:**  
**Day:** 10  
**Month:** December  
**Year:** 2001

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

#### Propylene Glycol

**CAS No.:** 57-55-6  
**TSCA CAS Number:** 57-55-6  
**Percent Range:** 90.0 - 100.0  
**Percent Range Units:** volume / volume  
**LD50:** Oral rat LD50 = 20 g/kg  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** No effects anticipated.

#### Hydroxylamine Hydrochloride

**CAS No.:** 5470-11-1  
**TSCA CAS Number:** 5470-11-1  
**Percent Range:** 1.0 - 10.0  
**Percent Range Units:** weight / volume  
**LD50:** Oral mouse LD50 = 408 mg/kg  
**LC50:** None reported  
**TLV:** Not established  
**PEL:** Not established  
**Hazard:** Toxic. Causes irritation. May cause allergic reaction.

#### Isopropanol

**CAS No.:** 67-63-0

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

**Percent Range:** < 5.0

**Percent Range Units:** volume / volume

**LD50:** Oral rat LD50 = 5045 mg/kg Oral Human LDLo = 2770 mg/kg

**LC50:** Inhalation rat LCLo = 12000 ppm/8hr

**TLV:** 400 ppm (500 ppm STEL)

**PEL:** 400 ppm

**Hazard:** Flammable. Causes moderate eye irritation.

#### Calmagite

**CAS No.:** 3147-14-6

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

**Percent Range:** < 1.0

**Percent Range Units:** weight / volume

**LD50:** Oral rat LD50 > 5000 mg/kg

**LC50:** None reported

**TLV:** Not established

**PEL:** Not established

**Hazard:** May cause irritation.

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### 3. HAZARDS IDENTIFICATION

#### **Emergency Overview:**

**Appearance:** Dark red liquid

**Odor:** Fruity

HARMFUL IF SWALLOWED CAUSES EYE IRRITATION MAY CAUSE SKIN IRRITATION  
MAY CAUSE ALLERGIC SKIN REACTION  
FLAMMABLE

#### **HMIS:**

**Health:** 2

**Flammability:** 3

**Reactivity:** 0

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

#### **NFPA:**

**Health:** 2

**Flammability:** 3

**Reactivity:** 0

**Symbol:** Not applicable

#### **Potential Health Effects:**

**Eye Contact:** Causes irritation

**Skin Contact:** May cause irritation May cause allergic reaction

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

**Target Organs:** Central nervous system Red blood cells

**Ingestion:** Very large doses may cause: central nervous system depression drowsiness dizziness 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.

**Target Organs:** Central nervous system Red blood cells

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

**Target Organs:** None reported

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

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

**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. Call physician if irritation develops.

**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.

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#### 5. FIRE FIGHTING MEASURES

**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

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

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

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Alcohol foam.

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

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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. 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. 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.

**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.

**Special Instructions (for accidental release):** Product is regulated as RCRA hazardous waste.

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

## **7. HANDLING / 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 / PROTECTIVE EQUIPMENT**

**Engineering Controls:** Have an eyewash station 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 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

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## **9. PHYSICAL / CHEMICAL PROPERTIES**

**Appearance:** Dark red liquid

**Physical State:** Liquid

**Molecular Weight:** Not applicable

**Odor:** Fruity

**pH:** 1.09

**Vapor Pressure:** Not determined

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

**Boiling Point:** 118°C

**Melting Point:** Not determined

**Specific Gravity (water = 1):** 1.01

**Evaporation Rate (water = 1):** 0.05

**Volatile Organic Compounds Content:** Not determined

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

**Solubility:**

**Water:** Soluble

**Acid:** Soluble

**Other:** Not determined

**Metal Corrosivity:**

**Steel:** 0.288 in/yr

**Aluminum:** 0.001 in/yr

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## **10. STABILITY / REACTIVITY**

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

**Conditions to Avoid:** Contact with heat, sparks, open flames or other ignition sources. Heating to decomposition.

**Reactivity / Incompatibility:** Incompatible with: oxidizers

**Hazardous Decomposition:** Toxic fumes of: chlorides carbon monoxide carbon dioxide

**Hazardous Polymerization:** Will not occur.

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## 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:** Data reported in RTECS for Isopropanol, Propylene Glycol and Hydroxylamine Hydrochloride

**Reproductive Effects Data:** Data reported in RTECS for Isopropanol

**Ingredient Toxicological Data:** Hydroxylamine Hydrochloride: Oral mouse LD<sub>50</sub> = 400 mg/kg, Oral mouse LD<sub>50</sub> = 408 mg/kg; Propylene Glycol: Oral rat LD<sub>50</sub> = 20 g/kg; Isopropanol: Oral human LD<sub>Lo</sub> = 2770 mg/kg, Oral rat LD<sub>50</sub> = 5045 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:** 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.

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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)

**DOT Hazard Class:** 3

**DOT Subsidiary Risk:** 8

**DOT ID Number:** UN2924

**DOT 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)

**ICAO Hazard Class:** 3

**ICAO Subsidiary Risk:** 8

**ICAO ID Number:** UN2924

**ICAO Packing Group:** III

**I.M.O.:**

**I.M.O. Proper Shipping Name:** FLAMMABLE LIQUID, CORROSIVE, N.O.S.  
(<10% Isopropanol/Hydroxylamine Hydrochloride Solution)

**I.M.O. Hazard Class:** 3

**I.M.O. Subsidiary Risk:** 8  
**I.M.O. ID Number:** UN2924  
**I.M.O. Packing Group:** III

**Additional Information:** This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification:

Hazard Class: 9      UN Number 3316.

Proper Shipping Name: Chemical Kit

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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.

**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.

**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

**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:** Indicator for hardness

**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 Association, 1991. In-house information. Technical Judgment.

**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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