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:
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
3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components according to GHS:

**Isopropanol**

- **CAS Number:** 67-63-0
- **Chemical Formula:** C₆H₁₂O
- **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/m³)
- **TLV:** 200 ppm (492 mg/m³)

**WHMIS Symbols:** Flammable / Combustible

**Hydroxylamine Hydrochloride**

- **CAS Number:** 5470-11-1
- **Chemical Formula:** NH₂OH·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/m³ as inhalable dust; 5 mg/m³ as respirable dust
- **TLV:** 10 mg/m³ as inhalable dust; 3 mg/m³ as respirable dust

**WHMIS Symbols:** Acute Poison

**Calmagite**

- **CAS Number:** 3147-14-6
- **Chemical Formula:** C₁₀H₁₄N₂O₃S·H₂O
- **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:** C₃H₈O₂
- **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

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.
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.

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

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

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:

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Dark red liquid
Physical State: Liquid
Molecular Weight: Not applicable
Odor: Fruity  
Odor Threshold: Not available  
PpH: 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 Limit: Not determined  
Upper Explosion Limit: Not determined  
Autoignition Temperature: Not determined  
Explosive Properties: Not classified according to GHS criteria.  
Oxidising 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.

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.

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 = 20521 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% Hydroxyamine 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. Hydroxyamine 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

12. ECOLOGICAL INFORMATION

Product Ecological Information: --
No ecological data available for this product. Mobility in soil: No data available
Ingredient Ecological Information: Hydroxyamine Hydrochloride: LC50 Leuciscus idus 48h = 1-10 mg/l;
CEPA Statement: Hydroxyamine 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.

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.

14. TRANSPORT INFORMATION

D.O.T.: 
D.O.T. Proper Shipping Name: Flammable Liquid, Corrosive, N.O.S.
(<10% Isopropanol/Hydroxyamine 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/Hydroxyamine Hydrochloride Solution)
Hazard Class: 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/Hydroxyamine 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/Hydroxyamine 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 hazardous 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

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 (HHS) TPQ (40 CFR 355): Not applicable
304 CFRCLA 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 (FRC) Inventory (MEP) Status: All components either listed or exempt.

16. OTHER INFORMATION

Revision Summary: Substantial revision to comply with EU Reg 1272/2008, Reg 1907/2006 and UN GHS (ST/SQ/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/SQ/AC.10/36/Add.3). This SDS has been prepared in accordance with the requirements of GHS (ST/SQ/AC.10/36/Add.3).
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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