

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

MSDS No: M00380

# MATERIAL SAFETY DATA SHEET

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Mercuric Thiocyanate Solution

**Catalog Number:** 2212129

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:** M00380

**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:** Determination of chloride

## 2. HAZARDS IDENTIFICATION

### GHS Classification:

**Hazard categories:** Flammable Liquids: Flam. Liq. 2 Acute Toxicity: Acute Tox. 3-Orl Acute Toxicity: Acute Tox. 3-Derm Acute Toxicity: Acute Tox. 3-Inh Skin Corrosion/Irritation: Skin Irrit. 2 Serious Eye Damage/Eye Irritation: Eye Irrit. 2 Specific Target Organ Toxicity - Single Exposure: STOT SE 1 Germ Cell Mutagenicity: Muta. 2 Reproductive Toxicity: Repr. 2 Hazardous to the Aquatic Environment: Aquatic Chronic 2

### GHS Label Elements:

DANGER



**Hazard statements:** Highly flammable liquid and vapour. Toxic if swallowed, in contact with skin or if inhaled Causes skin irritation. Causes serious eye irritation. Suspected of causing genetic defects. Suspected of damaging fertility. Suspected of damaging the unborn child. Causes damage to organs. Toxic to aquatic life with long lasting effects. Contact with acids liberates very toxic gas.

**Precautionary statements:** Obtain special instructions before use. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not breathe dust/fume/gas/mist/vapours/spray. Handle environmental release according to local, state, federal, provincial requirements. Wear eye protection. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF INHALED: Remove victim/person to fresh air and keep at rest in a position comfortable for breathing. IF exposed or concerned: Get medical advice/attention. In case of fire: Use dry sand or extinguishing powder for extinction.

### HMIS:

**Health:** 3\*

**Flammability:** 4

**Reactivity:** 0

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

### NFPA:

**Health:** 3

**Flammability:** 4

**Reactivity:** 0

**Symbol:** Not applicable

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

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

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### 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Hazardous Components according to GHS:**

**Methyl Alcohol**

**CAS Number:** 67-56-1

**Chemical Formula:** CH<sub>3</sub>OH

**GHS Classification:** Flam. Liq 2, H225; Acute Tox 3 -Orl, H301; Acute Tox 3 -Derm, H311; Acute Tox 3 -Inh, H331; Eye Irrit. 2A, H319; Skin Irrit. 2, H315; STOT SE1, H370; Muta. 2, H341; Repr. 2, H361

**Percent Range:** > 99.0

**Percent Range Units:** weight / weight

**PEL:** 200 ppm

**TLV:** 200 ppm

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

**Mercuric Thiocyanate**

**CAS Number:** 592-85-8

**Chemical Formula:** Hg(SCN)<sub>2</sub>

**GHS Classification:** Acute Tox. 2 - Orl, H300; Acute Tox. 1 - Derm, H310; Acute Tox. 2 - Inh, H330; Repr. 2, H361; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; EUH 032

**Percent Range:** < 0.5

**Percent Range Units:** weight / weight

**PEL:** 0.1 mg(Hg)/m<sup>3</sup> (skin)

**TLV:** 0.1 mg(Hg)/m<sup>3</sup> (skin)

**WHMIS Symbols:** Acute Poison

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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. Emergency response to cyanide exposure should be planned and practiced prior to work with cyanides. Have a cyanide first aid kit available.

**Advice to doctor:** Treat symptomatically. If indicated use a cyanide antidote such as sodium thiosulfate and sodium nitrate.

**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.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. Call physician.

**Ingestion (First Aid):** Do not induce vomiting. Never give anything by mouth to an unconscious person. Call physician immediately.

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### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Flammable liquid and vapors. Can burn in fire, releasing toxic vapors.

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

**Extinguishing Media:** Carbon dioxide Alcohol foam. Dry chemical.

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

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

**Hazardous Combustion Products:** Toxic fumes of: mercury 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.

**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. Material will float on water creating a fire hazard. Dike the material to create a barrier to combustibles.

**Clean-up Technique:** Eliminate all sources of ignition. Mercury and its compounds are extremely toxic! Be extremely careful not to contact the spill or breathe any vapors. Absorb spilled liquid with non-reactive sorbent material. Sweep up spilled material and absorbent with non-sparking tools. Dispose of material in government approved hazardous waste facility. Dispose of all mercury contaminated material at a government approved hazardous waste facility. Decontaminate area with commercially available mercury absorbing compounds.

**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:** 131

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

**Flammability Class:** Class IB

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**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:** chemical splash goggles

**Skin Protection:** nitrile 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: mist/vapor Wash thoroughly after handling. Protect from: light heat sparks, flames and other ignition sources Keep away from: oxidizers

**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:** Clear, colorless liquid

**Physical State:** Liquid

**Molecular Weight:** Not applicable

**Odor:** Alcoholic

**Odor Threshold:** 5900 ppm

**pH:** Not available

### **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):** 0.79

**Viscosity:** Not determined

### **Solubility:**

**Water:** Miscible

**Acid:** Not determined

**Other:** Not determined

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

**Coefficient of Water / Oil:** Not applicable  
**Melting Point:** -98 °C (-144 °F)  
**Decomposition Temperature:** Not determined  
**Boiling Point:** 65 °C (149 °F)  
**Vapor Pressure:** 100 mmHg @ 100 °C (212 °F)  
**Vapor Density (air = 1):** 1.11  
**Evaporation Rate (water = 1):** 5.9  
**Volatile Organic Compounds Content:** ~ 100%  
**Flammable Properties:** Flammable liquid and vapors. Can burn in fire, releasing toxic vapors.  
**Flash Point:** 12 °C (54 °F)  
**Method:** Closed cup  
**Flammability Limits:**  
**Lower Explosion Limits:** 6.7%  
**Upper Explosion Limits:** 36.5%  
**Autoignition Temperature:** 385 °C (725 °F)  
**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.  
Not applicable

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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: mercury carbon monoxide carbon dioxide  
**Conditions to Avoid:** Exposure to light. Extreme temperatures

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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 Route Data Given Below  
ATE Oral LD50 = 298 mg/kg  
ATE Dermal LD50 = 799 mg/kg  
ATE Inhalation LD50 = 10 mg/L/4 hr  
**Specific Target Organ Toxicity - Single Exposure (STOT-SE):** Target Organs Central nervous system  
Optic Nerve  
**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:** Irritating to eyes.  
**Sensitization:** Based on classification principles, the classification criteria are not met.  
**CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction):** Summary of findings reported in the literature follow.  
Methanol: A report of increased mutation frequency in L5178Y mouse lymphoma cells with activation was reported in an abstract. DNA inhibition system-human; lymphocyte 300 mmol/L.  
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:** Toxic Cannot be made non-toxic. Methanol causes central nervous system depression, symptoms may include: drunkenness, drowsiness, dizziness, lightheadedness, unconsciousness and coma. Methanol causes cardiovascular effects such as cardiac depression and blood pressure changes. Methanol may cause irritation of the eyes,

visual impairment or blindness. May cause: headache weakness nausea vomiting shock loosening of the teeth toxic nephritis (inflammation of the kidneys) liver damage kidney damage blindness

**Inhalation:** Methanol causes central nervous system depression, symptoms may include: drunkenness, drowsiness, dizziness, lightheadedness, unconsciousness and coma. Methanol causes cardiovascular effects such as cardiac depression and blood pressure changes. Methanol may cause irritation of the eyes, visual impairment or blindness. May cause: mouth soreness nausea vomiting headache weakness muscular twitching kidney damage loosening of the teeth death

**Skin Absorption:** Toxic Effects similar to those of ingestion

**Chronic Effects:** Methanol is a cumulative poison. Methanol may cause visual impairment and possibly blindness by repeated or prolonged exposure. Mercury is a general protoplasmic poison; it circulates in the blood and is stored in the liver, kidneys, spleen and bones. Main symptoms are sore mouth, tremors and psychic disturbances. Chronic overexposure may cause central nervous system effects brain damage kidney damage liver damage

**Medical Conditions Aggravated:** Allergies or sensitivity to mercury. Pre-existing: Eye conditions Skin conditions Kidney conditions Central nervous system diseases

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product. Do not place in landfill. Recycle appropriately. Do not release into the environment.

Method Used for Estimation of Aquatic Toxicity of Mixture Summation Method M-factor (Multiplier) for highly toxic ingredients: 100

**Ingredient Ecological Information:** Methyl Alcohol: LC50 fathead minnow 29.4 g/l/96 hr; BOD = 0.6-1.12 lb/lb/5 d; Estimated Bioconcentration Factor Golden ide ~ 0.2 based on recommended regression-derived equation;

Mercury Thiocyanate: Pimephales promelas (fathead minnow) 96 hr LC50 = 0.15 mg/l; Daphnia magna 48 hr EC50 = 0.0052 mg/l;

Methyl Alcohol: CEPA statement: Not persistent. Not bioaccumulative or inherently toxic to aquatic organisms. Mercuric Thiocyanate: CEPA statement: Persistent and inherently toxic to aquatic organisms. Not bioaccumulative.

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## 13. DISPOSAL CONSIDERATIONS

**EPA Waste ID Number:** D001 D009

**Special Instructions (Disposal):** Decontaminate any equipment or surfaces that have come in contact with mercury with commercially available mercury absorbing compounds. Dispose of all mercury contaminated material at an E.P.A. hazardous waste facility. 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.

**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:** Methanol Solution

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**Hazard Class:** 3

**Subsidiary Risk:** NA

**ID Number:** UN1230

**Packing Group:** II

**T.D.G.:**

**Proper Shipping Name:** Methanol Solution

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**Hazard Class:** 3.2

**Subsidiary Risk:** 6.1

**UN Number/PIN:** 1230

**Packing Group:** II

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

**I.C.A.O. Proper Shipping Name:** Methanol Solution

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**Hazard Class:** 3

**Subsidiary Risk:** 6.1

**ID Number:** UN1230

**Packing Group:** II

**I.M.O.:**

**Proper Shipping Name:** Methanol Solution

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**Hazard Class:** 3

**Subsidiary Risk:** 6.1

**ID Number:** UN1230

**Packing Group:** II

**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 Delayed (Chronic) Health Hazard Fire 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.

Methanol, mercury compound

**302 (EHS) TPQ (40 CFR 355):** Not applicable

**304 CERCLA RQ (40 CFR 302.4):** Mercuric thiocyanate 10 lbs. Methanol 5000 lbs.

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

**Clean Water Act (40 CFR 116.4):** Mercuric thiocyanate - RQ 10 lbs.

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

**State Regulations:**

**California Prop. 65:** WARNING - This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

**Identification of Prop. 65 Ingredient(s):** Mercuric Thiocyanate, methanol

**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:** All components of this product are either listed, listed as the anhydrous compound or exempt.

**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. 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. List of Dangerous Substances Classified in Annex I of the EEC Directive (67/548) - Classification, Packaging and Labeling of Dangerous Substances, Amended July 1992. Sax,

N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. Technical Judgment. Vendor Information.

**Complete Text of H phrases referred to in Section 3:** H225 Highly flammable liquid and vapour. H300 Fatal if swallowed. H301 Toxic if swallowed. H310 Fatal in contact with skin. H311 Toxic in contact with skin. H315 Causes skin irritation. H319 Causes serious eye irritation. H330 Fatal if inhaled. H331 Toxic if inhaled. H341 Suspected of causing genetic defects. H361fd Suspected of damaging fertility. Suspected of damaging the unborn child. H370 Causes damage to organs. H373 May cause damage to organs through prolonged or repeated exposure. 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).

**Date of MSDS Preparation:**

**Day:** 09

**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	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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