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

MSDS No: M00108

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: CuVer® 2 Copper Reagent
Catalog Number: 2188299

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: M00108
Chemical Name: Not applicable
CAS Number: Not applicable
Additional CAS No. (for hydrated forms): Not applicable
Chemical Formula: Not applicable
Chemical Family: Mixture
Intended Use: Indicator for copper

2. HAZARDS IDENTIFICATION

GHS Classification:
Hazard categories: . . Serious Eye Damage/Eye Irritation: Eye Irrit. 2A . .
GHS Label Elements:
WARNING

Hazard statements: . . . . Causes serious eye irritation.
Precautionary statements: Wear protective gloves / protective clothing / eye protection / face protection. . . Call a POISON CENTER or doctor/physician if you feel unwell. Wear eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
HMIS:
Health: 1
Flammability: 1
Reactivity: 1
Protective Equipment: X - See protective equipment, Section 8.
NFPA:
Health: 1
Flammability: 1
Reactivity: 1
Symbol: Not applicable
WHMIS Hazard Classification: Not applicable
WHMIS Symbols: Not applicable

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components according to GHS:
Sodium Sulfite

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
2188299	N/A	Hach Company	ROWGHS	English	1

Total Enclosures: 1

CAS Number: 7757-83-7
Chemical Formula: Na_2SO_3
GHS Classification: Acute Tox. 5 -Orl, H303; Acute Tox. 5 -Derm, H313; Acute Tox. 5 -Inh, H333; Aquatic Acute 3, H402;
Percent Range (Trade Secret): 20.0 - 30.0
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

WHMIS Symbols: Other Toxic Effects

Sodium Hydrosulfite

CAS Number: 7775-14-6
Chemical Formula: $Na_2S_2O_4$
GHS Classification: Self-Heating 1, H251; Acute Tox. 4 -Orl, H302; Skin Irrit. 3, H316; Eye Irrit. 2A, H319; STOT Single 3, H335; Aquatic Chronic 3, H412
Percent Range (Trade Secret): 5.0 - 15.0
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 EffectsFlammable / Combustible

Cyclohexanediaminetetraacetic Acid, Disodium Salt

CAS Number: 5786-78-7
Chemical Formula: $C_{14}H_{20}N_2O_8Na_2 \times H_2O$
GHS Classification: Eye Irrit. 2A, H319
Percent Range (Trade Secret): 5.0 - 15.0
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

2,2-Bicinchoninate, Dipotassium

CAS Number: 63451-34-3
Chemical Formula: $C_{20}H_{10}N_2O_4K_2$
GHS Classification: Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT Single 3, H335
Percent Range (Trade Secret): 0.5 - 3.0
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

Hazardous Components according to GHS: No

Sodium Tartrate

CAS Number: 868-18-8
Chemical Formula: $Na_2C_4H_4O_6 \cdot 2H_2O$
GHS Classification: Acute Tox. 5-Orl, H303
Percent Range (Trade Secret): 20.0 - 30.0
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

Sodium Citrate

CAS Number: 68-04-2
Chemical Formula: $C_6H_5O_7Na_3 \cdot 2H_2O$
GHS Classification: Not applicable

Percent Range (Trade Secret): 20.0 - 30.0
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.
Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.
Skin Contact (First Aid): Remove contaminated clothing. Wash skin with plenty of water. Call physician if irritation develops.
Inhalation: Remove to fresh air. Give artificial respiration if necessary. If you feel unwell, contact a physician
Ingestion (First Aid): Do not induce vomiting. Give 1-2 glasses of water. Never give anything by mouth to an unconscious person. If vomiting occurs, avoid aspiration by keeping head below hips. Call physician immediately.

5. FIRE FIGHTING MEASURES

Flammable Properties: Can burn in fire, releasing toxic vapors. Material is not classified as flammable according to GHS criteria.
Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.
Extinguishing Media: Use media appropriate to surrounding fire conditions
Extinguishing Media NOT To Be Used: Not applicable
Fire / Explosion Hazards: May react violently with: water strong oxidizers
Hazardous Combustion Products: Toxic fumes of: sulfur oxides. sodium monoxide carbon monoxide, carbon dioxide. nitrogen oxides.

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: Stop spilled material from being released to the environment. Releases of this material may contaminate the environment.
Clean-up Technique: If permitted by regulation, Scoop up spilled material into a large beaker and dissolve with water. Flush the spilled material to the drain with a large excess of water. Decontaminate the area of the spill with a soap 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: a pound or more of loose powder 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 Wash thoroughly after handling. Use with adequate ventilation. Do not breathe dust. Maintain general industrial hygiene practices when using this product.
Storage: Store between 10° and 25°C. Protect from: heat moisture Keep away from: acids oxidizers combustible materials
Flammability Class: Not applicable

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Have an eyewash station nearby. A system of local and/or general exhaust is recommended to keep exposures as low as possible Maintain general industrial hygiene practices when using this product.
Personal Protective Equipment:

Eye Protection: safety glasses with top and side shields
Skin Protection: lab coat nitrile gloves
Inhalation Protection: adequate ventilation
Precautionary Measures: Avoid contact with: eyes skin Wash thoroughly after handling. Use with adequate ventilation. Do not breathe: dust Protect from: heat moisture Keep away from: acids/acid fumes other combustible materials oxidizers
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: White to light yellow crystals
Physical State: Solid
Molecular Weight: Not applicable
Odor: Slight
Odor Threshold: Not determined
pH: 5% solution = 7.9
Metal Corrosivity:
Corrosivity Classification: Not classified as corrosive to metals according to GHS criteria.
Steel: 0.235 in/yr
Aluminum: 0.023 in/yr
Specific Gravity/ Relative Density (water = 1; air =1): 1.98
Viscosity: Not applicable
Solubility:
Water: Soluble
Acid: Slightly soluble
Other: Not determined
Partition Coefficient (n-octanol / water): Not applicable
Coefficient of Water / Oil: Not applicable
Melting Point: Decomposes
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 applicable
Flammable Properties: Can burn in fire, releasing toxic vapors. Material is not classified as flammable according to GHS criteria.
Flash Point: Not applicable
Method: Not applicable
Flammability Limits:
Lower Explosion Limits: Not applicable
Upper Explosion Limits: Not applicable
Autoignition Temperature: Not available
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: May react violently in contact with: acids oxidizers sodium chlorite

Hazardous Decomposition: Heating to decomposition releases: sulfur oxides sodium monoxide carbon monoxide carbon dioxide nitrogen oxides
Conditions to Avoid: Contact with water or steam. Heat Contact with acid or acid fumes Contact with oxidizers Avoid creating dust. Poor Ventilation Exposure to air.

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 Based on classification principles, the classification criteria are not met.
Oral Rat LD50 > 2075 mg/kg
Inhalation Rat LC50 = 19 mg/L/4 hr
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: Irritating to eyes.
Sensitization: Based on classification principles, the classification criteria are not met.
CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction): Based on classification principles, the classification criteria are not met.
An ingredient of this mixture is: IARC Group 3: Non-classifiable
Sulfites
This product does NOT contain any NTP listed chemicals.
This product does NOT contain any OSHA listed carcinogens.
Symptoms/Effects:
Ingestion: May be harmful if swallowed May cause: abdominal pain diarrhea colic circulatory disturbances central nervous system depression allergic respiratory reaction gastrointestinal tract irritation nausea vomiting
Inhalation: Causes: respiratory tract irritation May cause: allergic respiratory reaction
Skin Absorption: None Reported
Chronic Effects: Citric acid chronic overexposure may cause effects due to the ability of citric acid to chelate metals, which could impair the body's ability to absorb calcium and iron. Chronic overexposure may cause allergic respiratory reactions allergic skin reactions
Medical Conditions Aggravated: Sulfites are strong sensitizers. Inhalation and ingestion may cause allergic respiratory reactions in asthmatics. Persons with respiratory conditions should take special care when working with products that contain sulfites.

12. ECOLOGICAL INFORMATION

Product Ecological Information: --
Do not release into the environment. Do not place in landfil. Recycle appropriately. No bioaccumulation potential
Method Used for Estimation of Aquatic Toxicity of Mixture Summation Method M-factor (Multiplier) for highly toxic ingredients: 1
Ingredient Ecological Information: Sodium Sulfite: 96 hr Leuciscus idus LC50 = 220 mg/L; 50 hr Daphnia magna LC50 = 69 mg/L; Chlamydomonas reinhardtii EC50 = 16 mg/L; Sodium Hydrosulfite: 96 hr Leuciscus idus LC50 = 46 mg/L; 48 hr Daphnia magna EC50 = 98 mg/L
CEPA Statement: Sodium Sulfite, Sodium Hydrosulfite, Water: Persistent, not bioaccumulative or inherently toxic to aquatic organisms.
CEPA Statement: Sodium Tartrate, Sodium Citrate: Not persistent, bioaccumulative or inherently toxic to aquatic organisms. CEPA Statement: CDTA Disodium Salt: Unknown

13. DISPOSAL CONSIDERATIONS

EPA Waste ID Number: Not applicable
Special Instructions (Disposal): Dilute material with excess water making a weaker than 5% solution. If permitted by regulation, Open cold water tap completely, slowly pour the material to the drain. Allow cold water to run for 5 minutes to completely flush the system. Otherwise, Check with local municipal and state authorities and waste contractors for pertinent local information regarding the proper disposal of chemicals.
Empty Containers: Working in a well-ventilated area, Dispose of empty container as normal trash. 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. Rinse three times with an appropriate solvent.
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: Not Currently Regulated
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Hazard Class: NA
Subsidiary Risk: NA
ID Number: NA
Packing Group: NA
T.D.G.:
Proper Shipping Name: Not Currently Regulated
--
Hazard Class: NA
Subsidiary Risk: NA
UN Number/PIN: NA
Packing Group: NA
I.C.A.O.:
I.C.A.O. Proper Shipping Name: Not Currently Regulated
--
Hazard Class: NA
Subsidiary Risk: NA
ID Number: NA
Packing Group: NA
I.M.O.:
Proper Shipping Name: Not Currently Regulated
--
Hazard Class: NA
Subsidiary Risk: NA
ID Number: NA
Packing Group: NA
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.

15. REGULATORY INFORMATION

U.S. Federal Regulations:
O.S.H.A.: This product is an "Article" 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
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 no RCRA regulated substances.
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 or are placed on the market in quantities less than 10 kg per year.

Australian Inventory (AICS) Status: Some ingredients are not listed. Annual Report Required.

New Zealand Inventory (NZIoC) Status: Some ingredients are not listed or exempt.

Korean Inventory (KECI) Status: Some ingredients are not listed or exempt.

Japan (ENCS) Inventory Status: Some ingredients are not 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. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. In-house information. IARC Monographs on the Evaluation of the Carcinogenic Risks to Humans. World Health Organization (Volumes 1-42) Supplement 7. France: 1987. Technical Judgment. Vendor Information. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984.

Complete Text of H phrases referred to in Section 3: H251 Self-heating: may catch fire. H302 Harmful if swallowed. Not applicable .

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: 06

Month: October

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.