

# Custom Sensors & Technology

Oxygen and Fiber-Optic Photometric Transmitters for Industrial Labs and Process Industries

## Material Safety Data Sheet

Date Created: June 23, 2005

Date Updated: NA

Version: 0.00

### Section 1: Product and Company Information

Product Name: Hydrogen Sulfide Scrubber Active Ingredient

Product Number: 2401-XX (hydrogen scrubber assembly)

Company: Custom Sensors & Technology  
Street Address: 531 Axminister Dr  
City, State, Zip, Country: Fenton, MO 63026-2903, USA  
Phone Number: 636-305-0666  
FAX Number: 636-305-1096

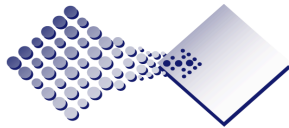
### Section 2: Composition Information

Material packaged in the scrubber apparatus is a mixture of the following materials.

Substance Name:	Percent (% by weight)	CAS #
Cupric Carbonate Dibasic	40-60	12069-69-1
Magnesium Sulfate Heptahydrate	10-30	10034-99-8
Talc (asbestos free)	10-50	14807-96-6

Substance Name	Molecular Formula
Cupric Carbonate Dibasic	$\text{CuCO}_3 \cdot \text{Cu}(\text{OH})_2$
Magnesium Sulfate Heptahydrate	$\text{MgSO}_4 \cdot 7 \text{H}_2\text{O}$
Talc (asbestos free)	$\text{Mg}_3(\text{Si}_4\text{O}_{10})(\text{OH})_2$ -- Primary Constituent

Substance Name	Synonyms
Cupric Carbonate Dibasic	Basic copper carbonate, Basic copper (II) carbonate, (Carbonato) dihydroxydi-copper, (Carbonato (2-))dihydroxldi-(9Cl) copper, Cupric carbonate basic, Diccopper dihydroxycarbonato, Kop karb
Magnesium Sulfate Heptahydrate	Sulfuric acid, magnesium salt (1:1), heptahydrate
Talc	Baby powder, Soapstone, Talcum, Steatite, Agalite, Asbestine, B9, B13 (Mineral), CP 10-14, CP 38-33, Crystalite CRS 6002, Desertalc 57, Emtal 500, Emtal 549, Emtal 599, Ex-IT, Fibrene C 400, Finntalc C10, Finntalc M05, Finntalc M15, Finntalc P40, Finntalc PF, FW-XO, IT Extra, LMR 100, Micro ACE K1, Micro ACE L1, Micro White 5000 A, Micron White 5000S, Microtalc IT Extra, Mistron 139, Mistron Frost P, Mistron RCS, Mistron 2SC, Mistron Star, Mistron Super Frost, Mistron Vapor, MP 12-50, MP 25-38, MP 40-27, MP 45-26, MST, Mussolinite, Nytal 200, Nytal 400, P 3, PK-C, PK-N, P 3 (Mineral), Polytal 4641, Polytal 4725, Silicate: Talc containing no asbestos (OHSAs), Steawhite, Supreme, Supreme Dense, Talc (ACGIH), Talcan PK-P, Talcon CP 44-31, TY 80



# Custom Sensors & Technology

Oxygen and Fiber-Optic Photometric Transmitters for Industrial Labs and Process Industries

## Section 3: Hazards Identification

### *Cupric Carbonate Dibasic*

#### Emergency Overview

Toxic.

Toxic by inhalation, in contact with skin, and if swallowed. Irritating to eyes, respiratory system, and skin. Risk of serious damage to the eyes.

### *Magnesium Sulfate Heptahydrate*

#### Emergency Overview

Caution: Avoid contact and inhalation. Target organ(s): Central nervous system. G.I. System.

#### HMIS Rating

Health: 1      Flammability: 0      Reactivity: 1

#### NFPA Ratings

Health: N/A      Flammability: 0      Reactivity: 1

### *Talc*

Exposure to a large single dose may cause sneezing and dryness of mucous membranes. Could cause irritation of the mucous membranes and respiratory tract.

Routes of Exposure: Ingestion, inhalation, eye contact

Target Organs: Non identified

Symptoms of Overexposure:

Inhalation:              Low oral toxicity. Dust may be irritating. Prolonged inhalation of air-borne dust may cause scarring of the lungs (pulmonary fibrosis).

Ingestion:              Considered harmless and inert when ingested.

Dermal Contact:      Can cause dryness, or may cause mild irritation.

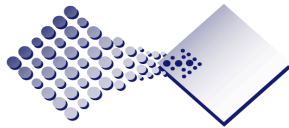
Acute Effects:           Non identified.

Chronic effects:        Repeated exposure may cause conjunctival inflammation.

#### HMIS Rating:

Health: 0      Flammability: 0      Reactivity: 0

For additional information on toxicity, please refer to Section 11



# Custom Sensors & Technology

*Oxygen and Fiber-Optic Photometric Transmitters for Industrial Labs and Process Industries*

## **Section 4: First Aid Measures**

### Immediate Treatment – Work site

In case of contact, immediately flush eyes or skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes.

### Oral (Ingestion) Exposure

If swallowed, wash out mouth with water provided person is conscious. Treat symptomatically and supportively. If vomiting occurs, keep head lower than hips to prevent aspiration. Call a physician.

### Inhalation (Breathing) Exposure

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately if breathing problems persist.

### Eye Exposure

Immediately flush the eyes with copious amounts of water for at least 15 minutes. Assure adequate flushing of the eyes by separating the eyelids with fingers.

### Dermal (Skin) Exposure

In case of contact, immediately wash skin with soap and copious amounts of water. If dermal irritation or dryness persists, apply moisturizers. If dryness or dermal irritation persists, contact a medical professional.

## **Section 5: Fire Fighting Measures**

Autoignition Temp: N/A Flammability: N/A

### Suitable Extinguishing Media

Noncombustible: Use extinguishing media appropriate to surrounding fire conditions (water fog, alcohol foam, dry chemical, or CO<sub>2</sub>).

### Firefighting

Clear area of unprotected personnel

### Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

### Specific Hazard(s)

Emits toxic fumes under fire conditions.

Material Exposure Hazard(s) Toxic.

## **Section 6: Accidental Release Measures**

### Procedure(s) of Personal Precaution(s)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

### Methods for Cleaning Up

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill area after material pickup is complete.

## **Section 7: Handling and Storage**

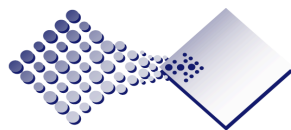
### Handling

Avoid breathing the dust. Avoid contact with the eyes, skin, mouth, or clothing. Avoid prolonged or repeated exposure.

### Storage

Keep tightly closed. Store in the dark. Store in a cool, dry place to prevent caking.

**Custom Sensors and Technology is a Division of Custom Sample Systems, Inc.**  
**531 Axminister Drive • Fenton, MO 63026-2903 • Phone: 636-305-0666 • Fax: 636-305-1096**  
**Web: [www.customsensors.com](http://www.customsensors.com)**



# Custom Sensors & Technology

Oxygen and Fiber-Optic Photometric Transmitters for Industrial Labs and Process Industries

## Section 8: Exposure Controls/Personal Protective Equipment (PPE)

OSHA TWA = 2 mg/m<sup>3</sup>

ACGIH TWA – 2 mg/m<sup>3</sup>

### Administrative Controls

Train employees on the safety hazards of dust, the proper use of PPE, the location of first aid equipment, location of the MSDS sheets, and general handling practices for chemical compounds and mixtures.

### Engineering Controls

Safety shower and eye bath. Use in a chemical fume hood or other well-ventilated area. Mechanical exhaust or significant natural airflow required. The product comes packaged in a sealed container, which can be used as described in the product literature. The controls above insure accidental exposure is minimized.

### Personal Protective Equipment

#### Respiratory

Government approved respirator in non-ventilated areas and/or for exposure above the TLV or PEL. NIOSH/MSHA-approved respirator recommended.

#### Hand

Compatible chemical-resistant gloves.

#### Eye

Chemical safety eyewear.

### General Hygiene Measures

Wash contaminated clothing before reuse. Wash thoroughly after handling. Wash before eating, smoking, drinking, or applying cosmetics.

## Section 9: Physical/Chemical properties

For clarity, the properties of the active scrubber material (mixture) are described for each individual component.

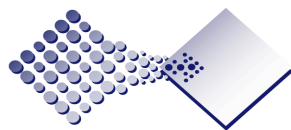
### *Cupric Carbonate Basic*

#### Appearance

<u>Color</u>	<u>Form</u>
Deep green	Powder

Molecular Weight: 221.10 AMU

pH	N/A
BP/BP Range	N/A
MP/MP Range	N/A
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
Specific Gravity/Density	4.0 g/cm <sup>3</sup>
Bulk Density	N/A
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A



# Custom Sensors & Technology

Oxygen and Fiber-Optic Photometric Transmitters for Industrial Labs and Process Industries

Partition Coefficient	N/A
Decomposition temp.	N/A
Flash Point °F	N/A
Flash Point °C	N/A
Explosion Limits	N/A

Flammability	N/A
Autoignition Temp	N/A
Solubility	N/A

## *Magnesium Sulfate Heptahydrate*

Appearance	
<u>Color</u>	<u>Form</u>
White	Fine Crystals

Molecular Weight: 246.48 AMU

pH	5.0-8.0
BP/BP Range	N/A
MP/MP Range	N/A
Freezing Point	N/A
Vapor Pressure	< 0.1 mm Hg @ 20°C
Vapor Density	< 0.01 g/L
Saturated Vapor Conc.	N/A
Specific Gravity/Density	1.67 g/cm <sup>3</sup>
Bulk Density	N/A
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	N/A
Flash Point °C	N/A
Explosion Limits	N/A

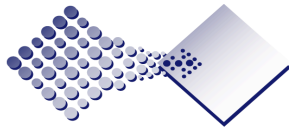
Flammability	N/A
Autoignition Temp	N/A
Solubility	1 M in H <sub>2</sub> O @ 20°C, complete dissolution, colorless soln.

## *Talc*

Appearance	
<u>Color</u>	<u>Form</u>
Off-White	Powder

Molecular Weight: 379.29 AMU

Odor:	“Earthy”
Odor Threshold:	N/A
Autoignition:	N/A
Freezing Point	N/A



# Custom Sensors & Technology

Oxygen and Fiber-Optic Photometric Transmitters for Industrial Labs and Process Industries

Vapor Pressure	N/A
Vapor Density	N/A
Specific Gravity/Density	N/A
Flash Point °C	N/A
Explosion Limits	N/A
Flash Point	N/A
Autoignition Temp	N/A
Solubility (Water)	None
LEL:	N/A
UEL	N/A

N/A = not available/no data

## Section 10: Stability and Reactivity

Stability:

Stable

Materials to Avoid:

Strong acids. Strong oxidizing agents.

Hazardous Polymerization:

Will not occur

Conditions to avoid:

Unventilated areas when using this product

Hazardous Decomposition Products

Carbon monoxide, Carbon dioxide, Sulfur oxides

## Section 11: Toxicological Information

For clarity, the information will be provided for each component in the scrubber mixture

### *Copper Carbonate Basic*

Route of Exposure

Skin Contact: Causes skin irritation

Eye Contact: Causes severe eye irritation

Inhalation: Material is irritating to mucous membranes and upper respiratory tract

Multiple Routes: Harmful if swallowed, inhaled, or absorbed through skin.

Signs and Symptoms of Exposure

Exposure can cause coughing, chest pains difficulty in breathing, gastrointestinal disturbances, nausea, vomiting, diarrhea. Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous systems excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure.

RTECS Number: GL6910000

Toxicity Data

Oral – Rat: 1,350 mg/kg (LD50)

Remarks: Behavioral: Somnolence (general depressed activity).

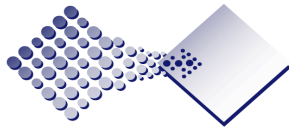
Gastrointestinal: Hypermotility, diarrhea.

Blood: Normocytic anemia.

Oral – Rabbit: 159 mg/kg (LD50)

Oral – Bird: 900 mg/kg (LD50)

### *Magnesium Sulfate Heptahydrate*



# Custom Sensors & Technology

Oxygen and Fiber-Optic Photometric Transmitters for Industrial Labs and Process Industries

## Route of Exposure

Skin Contact: May cause skin irritation

Eye Contact: May cause severe eye irritation

Inhalation: Material may be irritating to mucous membranes and the upper respiratory tract

Multiple Routes: May be harmful if swallowed, inhaled, or absorbed through skin.

## Signs and Symptoms of Exposure

Can cause CNS depression. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## Target Organ(s) or Systems(s)

Central Nervous System.

G.I. System

RTECS Number: OM4508000

## Toxicity Data

Intraduodenal – Woman: 5344 MG/KG (LDLO)

## Talc

### Route of Exposure

Skin Contact: May cause skin irritation. Potentially harmful if absorbed through the skin

Eye Contact: May cause eye irritation

Inhalation: May be harmful if swallowed. Material may be irritating to mucous membranes and the upper respiratory tract

Multiple Routes: May be harmful if swallowed, inhaled, or absorbed through skin.

### Signs and Symptoms of Exposure

Prolonged exposure can cause lung irritation and chemical pneumonitis. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

### Target Organ(s) or Systems(s)

Lungs

This product has not identified as a carcinogen by OSHO, IARC, or NPT

RTECS Number: WW2710000

### Toxicity Data

Human Skin: 300 micrograms/3 D-I MLD [85DKA8-127, 1977]

## Section 12: Ecological Information

No data available

## Section 13: Disposal Considerations

Contact a licensed professional waste disposal service to dispose of this material. Bury in a landfill site approved for the disposal of chemical and hazardous wastes. Observe all federal, state, and local environmental regulations.

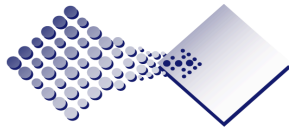
## Section 14: Transport Information

### DOT

This substance is considered to be non-hazardous for transport.

### IATA

Non-hazardous for air transport.



# Custom Sensors & Technology

Oxygen and Fiber-Optic Photometric Transmitters for Industrial Labs and Process Industries

## Section 15: Regulatory Information

For clarity, the regulatory information is provided for each component in the active scrubber material (mixture)

### *Copper Carbonate Basic*

#### EU Additional Classification

Symbol of Danger: Xn

Indication of Danger: Harmful.

Risk Statements R: 22 36/37/38

Harmful if swallowed. Irritating to eyes, respiratory systems, and skin.

Safety Statements S: 26 36

In case of contact with eyes rinse immediately with plenty of water and seek medical advice. Wear suitable, protective clothing.

#### US Classification and Label Text

Indication of Danger: Toxic

Risk Statements

Toxic by inhalation, in contact with skin, and if swallowed. Irritating to eyes, respiratory systems, and skin. Risk of serious damage to eyes.

Safety Statements

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection.

#### United States Regulatory Information

SARA Listed: Yes

Notes: This product is subject to Sara section 313 reporting requirements.

TSCA Inventory Item: Yes

#### Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

### *Magnesium Sulfate Heptahydrate*

#### US Classification and Label Text

Caution: Avoid contact and inhalation. Target organ(s): Central Nervous System. G.I. System

#### United States Regulatory Information

SARA Listed: No

### *Talc*

#### EU Additional Classification

Indication of Danger: Harmful.

Risk Statements R: 20

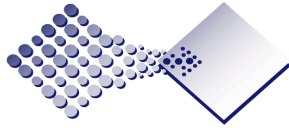
Harmful by inhalation.

Safety Statements S: 36

Wear suitable, protective clothing.

CEPA DSL Status: Talc is hazard class D2A with the Canadian Domestic Substance list.

EINECS: 238-877-9



# Custom Sensors & Technology

Oxygen and Fiber-Optic Photometric Transmitters for Industrial Labs and Process Industries

## Reviews, Standard, and Regulations

OEL=MAK

ACGIH TLV-NOT CLASSIFIABLE AS A HUMAN CARCINOGEN DTLVS\*  
TLV/BEI, 1997

ACGIH TLV-TWA 2 MG/M3, TOTAL DUST DTLVS\* TLV/BEI 1997  
IARC CANCER REVIEW: ANIMAL INADEQUATE EVIDENCE IMENDT  
42,185,1987

IARC CANCER REVIEW: HUMAN INADEQUATE EVIDENCE IMENDT  
42,185,1987

IARC CANCER REVIEW: GROUP 3 IMSUDL 7, 349, 1987

OSHA PEL (GEN INDU):8H TWA 20 MPPCF, RESPIRABLE DUST  
CFRGBR 29,1910 .1000,1994

OSHA PEL (CONSTRUC):8H TWA 20 MPPCF, RESPIRABLE DUST  
CFRGBR 29,1926.55,1994

OSHA PEL (SHIPYARD):8H TWA 20 MPPCF CFRGBR 29,1915.1000,1993

OSHA PEL (FED CONT):8H TWA 20 MPPCF, RESPIRABLE DUST  
CFRGBR 41,50-204.50,1994

OEL-AUSTRALIA:TWA 2.5 MG/M3 JAN 1993

OEL-BELGIUM:TWA 2 MG/M3 JAN 1993

OEL-FINLAND:TWA 5 MG/M3 JAN 1993

OEL-GERMANY:TWA 2 MG/M3 JAN 1993

OEL-SWITZERLAND:TWA 10 MG/M3 (TOTAL DUST) JAN 1993

OEL-SWITZERLAND:TWA 2 MG/M3 (RESP. DUST) JAN 1993

OEL-UNITED KINGDOM: TWA 1 MG/M3 (RESP. DUST) JAN 1993

OEL-UNITED KINGDOM: TWA 10 MG/M3 (TOTAL DUST) JAN 1993

OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV

OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV

NIOSH REL TO TALC (CONTAINING NO ASBESTOS)-AIR:10H 2MG/M3  
NIOSH\* PHS #92-100,1992

NOHS 1974: HZD 71055; NIS 243; TNF 38349; NOS 149; TNE 527353

NOES 1983: HZD X9093; NIS 2; TNF 273; NOS 2; TNE 4245; TFE 590

NOES 1983: HZD 71055; NIS 313; TNF 82650; NOS 192; TNE 1367384; TFE  
348973

EPA TSCA SECTION 8 (B) CHEMICAL INVENTORY

EPA TSCA SECTION 9 (D) UNPUBLISHED HEALTH/SAFETY STUDIES

EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JUNE 1998

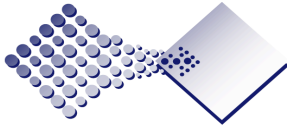
NTP CARCINOGENESIS STUDIES (INHALATION); CLEAR EVIDENCE: RAT  
NTPTR\* NTP-TR-421, 93

NTP CARCINOGENESIS STUDIES (INHALATION); NO EVIDENCE: MOUSE  
NTPTR\* NTP-TR-421,93

## Section 16: Other Information

### Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Custom Sensors & technology, a division of Custom Sample Systems, shall not be held liable for any damage resulting from handling or from contact with the above product. See invoice or packing slip for additional terms and conditions of sale. Please make unlimited paper and electronic copies for internal use so long and the Custom Sensors & technology name and logo are retained. Copyright 2005 Custom Sensors & Technology.



# Custom Sensors & Technology

*Oxygen and Fiber-Optic Photometric Transmitters for Industrial Labs and Process Industries*

Prepared by:

Jess V Ford, Ph.D.

Applications, Product Development and QA/QC Scientist

Rene Baskin

Senior Executive Assistant

Date Completed:

June 24, 2005

Date Reviewed and Approved for Distribution:

June 24, 2005