


SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME	COPPER SULFATE (Technical)
PRODUCT CODE	0941
SUPPLIER	MEDISCA Inc. Tel.: 1.800.932.1039 Fax.: 1.855.850.5855 661 Route 3, Unit C, Plattsburgh, NY, 12901 6641 N. Belt Line Road, Suite 130, Irving, TX, 75063 MEDISCA Pharmaceutique Inc. Tel.: 1.800.665.6334 Fax.: 514.338.1693 4509 Rue Dobrin, St. Laurent, QC, H4R 2L8 21300 Gordon Way, Unit 153/158, Richmond, BC V6W 1M2 MEDISCA Australia PTY LTD Tel.: 1.300.786.392 Fax.: 61.2.9700.9047 Unit 7, Heritage Business Park 5-9 Ricketty Street, Mascot, NSW 2020
EMERGENCY PHONE	CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 NSW Poisons Information Centre: 131 126 National Chemical Emergency Centre 44(0)1235239670
RECOMMENDED USES	Industrial/Lab Use Only
RESTRICTIONS ON USE	Not applicable

SECTION 2: HAZARDS IDENTIFICATION

GHS CLASSIFICATION	Acute Toxicity - Oral (Category 3) Acute Toxicity - Dermal (Category 3) Skin Irritation (Category 2) Eye Irritation (Category 2B) Chronic Aquatic Toxicity (Category 1) Specific Target Organ Toxicity - Single Exposure (Category 3) - (Liver, blood, kidneys) Specific Target Organ Toxicity - Repeated Exposure (Category 2) - (Lungs, liver, body)
PICTOGRAM	
SIGNAL WORD	Danger
HAZARD STATEMENT(S)	Toxic if swallowed. Toxic in contact with skin. Severely irritating to the eyes and skin. May cause respiratory irritation. Very toxic to aquatic life with long lasting effects May cause damage to organs through prolonged or repeated exposure. Repeated exposure may cause skin dryness or cracking.
ADVERSE PHYSIOCHEMICAL, HUMAN HEALTH AND ENVIRONMENTAL EFFECTS	

PRECAUTIONARY STATEMENT(S)	Prevention	Wash hands thoroughly after handling. Do not touch eyes. Do not eat, drink or smoke when using this product Do not breathe dust/fume/gas/mist/vapors/spray Use only outdoors or in a well-ventilated area Obtain special instructions before use Do not handle until all safety precautions have been read and understood Wear protective gloves, protective clothing, eye protection, face protection. Avoid release to the environment		
	Response	IF SWALLOWED: Immediately call a poison center. Get emergency medical help immediately. Rinse mouth. IF ON SKIN (HAIR): Wash with plenty of water; Get emergency help immediately. Immediately call a poison center or medical professional; Take off immediately all contaminated clothing and wash it before reuse. 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 help. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if Get medical help if you feel unwell IF EXPOSED OR CONCERNED: Get medical advice/attention COLLECT SPILLAGE Get medical help if you feel unwell		
	Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.		
	Disposal	Dispose of contents and/or container in accordance with local regulations.		
	HMIS CLASSIFICATION	Health Hazard	2	Flammability
	Reactivity	0	Personal Protection	G

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	Copper (II) sulfate pentahydrate
BOTANICAL NAME	Not applicable
SYNONYM	Cupric sulfate pentahydrate; Vitriol, Blue
CHEMICAL FORMULA	CuSO ₄ · 5H ₂ O
CHEMICAL FAMILY	Inorganic copper compound
CAS NUMBER	7758-99-8
ALTERNATE CAS NUMBER	Not applicable
MOLECULAR WEIGHT	249.685

CHEMICAL NAME	CAS NUMBER	EC NUMBER	% BY WEIGHT
COPPER SULFATE (Pentahydrate)	7758-99-8	616-477-9	100

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as health hazards and hence require reporting in this section.

SECTION 4: FIRST-AID MEASURES

IN CASE OF EYE CONTACT	Flush with copious amounts of water for 15 minutes, separating eyelids with fingers. If irritation persists seek medical aid.
IN CASE OF SKIN CONTACT	Wash with soap & water for 15 minutes. If irritation persists seek medical aid.

IF SWALLOWED

Call a physician. Wash out mouth with water. Do not induce vomiting without medical advice.

IF INHALED

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician

MEDICAL ATTENTION AND SPECIAL TREATMENT

Get emergency medical help.

SYMPTOMS CAUSED BY EXPOSURE

Not expected to present a significant hazard under anticipated conditions of normal use.

SECTION 5: FIREFIGHTING MEASURES

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL

When heated to decomposition (110°C, 230°F) it emits toxic fumes of sulfur oxides.

FLAMMABLE PROPERTIES

Nonflammable

HAZARDOUS COMBUSTION PRODUCTS

Under fire conditions, hazardous fumes will be present.

SUITABLE & UNSUITABLE EXTINGUISHING MEDIA

Small fire: dry chemical, CO₂ or water spray. **Large fire:** dry chemical, CO₂, alcohol resistant foam or water spray. Do not get water inside containers.

PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

METHODS & MATERIAL FOR CONTAINMENT

On land, sweep or shovel into suitable containers. Minimize generation of dust.

CLEANUP PROCEDURE

Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Shut off all sources of ignition. Evacuate the area. If necessary, employ water fog to disperse the vapors. Absorb the matter with compatible vermiculite or other absorbing material. Place in a suitable container and retain for disposal. Ventilate and clean the affected area. Do not flush into sewerage system or to drains.

REFERENCE TO OTHER SECTIONS

See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

Do not inhale. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling. Store away from incompatible materials, in a well-ventilated area. Eliminate all sources of ignition. Store in accordance with local regulations. Do not store in unlabeled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Use appropriate containment to avoid environmental contamination.

CONDITIONS FOR SAFE STORAGE

Store away from incompatible materials, in a well-ventilated area. Eliminate all sources of ignition. Store in accordance with local regulations. Do not store in unlabeled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Use appropriate containment to avoid environmental contamination.

STORAGE CONDITIONS

Store in original container, tightly sealed, protected from direct sunlight and moisture.

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION
Chemical Name: COPPER SULFATE (Pentahydrate) CAS #: 7758-99-8

	Country	Limit value-8 hours		Limit value-Short Term		IDLH	REL	Advisory	Notes
		ppm	mg/m ³	ppm	mg/m ³				
OSHA	USA	N/L	N/L	N/L	N/L	N/L	N/L	N/A	N/A
ACGIH	USA	N/L	N/L	N/L	N/L	N/L	N/L	N/A	N/A
NIOSH	USA	N/L	N/L	N/L	N/L	N/L	N/L	N/A	N/A
WEEL	USA	N/L	N/L	N/L	N/L	N/L	N/L	N/A	N/A
HSIS	Australia	N/L	N/L	N/L	N/L	N/L	N/L	N/A	N/A
HSE	UK	N/L	N/L	N/L	N/L	N/L	N/L	N/A	N/A
GESTIS	Finland	N/L	0.02	N/L	N/L	N/L	N/L	N/A	(1) Respirable fraction (2) Calculated as Cu

N/L = Not listed ; N/A = Not Available

PELs are 8-hour TWAs = Limit value - Eight hours

Ceiling or Short-Term TWA = STEL = Limit value - Short term

EXPOSURE GUIDELINES

Consult local authorities for provincial or state exposure limits. Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed, especially if powdered. The exposure limits given are for Copper & Inorganic Compounds, as Cu (7440-50-8), Copper fume as Cu or Copper dusts and mists, as Cu. This product may be regulated, have exposure limits or other information identified as the following: Copper (7440-50-8) and inorganic compounds, as Cu, Copper (7440-50-8) dusts and mists, as Cu and Copper fume, Cu.

PERSONAL PROTECTIVE EQUIPMENT

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by WHMIS or OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. **Skin:** Wear appropriate gloves to prevent skin exposure. **Clothing:** Wear appropriate protective clothing to minimize contact with skin. **Respirators:** Follow WHMIS or OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. **Thermal Hazards:** For products representing a thermal hazard, appropriate Personal Protective Equipment should be used.

SPECIFIC ENGINEERING CONTROLS

Adequate mechanical ventilation. Fumehood, eye wash station, and safety shower.

BIOLOGICAL MONITORING

Not available

CONTROL BANDING

Not available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES
PHYSICAL STATE

Solid

DESCRIPTION

Blue hygroscopic crystals or powder. Is odorless.

SOLUBILITY

Very soluble in boiling water; freely soluble in water and glycerine; slightly soluble in alcohol.

ODOR

Odorless

FLAMMABILITY

Nonflammable

AUTO-IGNITION TEMPERATURE

Not available

BOILING POINT

652 °C, 1205.6 °F (760.0 mm Hg, decomposes)

DECOMPOSITION TEMPERATURE

>110 °C, >230 °F

EVAPORATION RATE	Not available	EXPLOSIVE LIMIT	Not available	FLASH POINT	Not available
log P (OCTANOL-WATER)	Not available	LOWER FLAMMABLE/EXPLOSIVE LIMIT(S)	Not available	MELTING/FREEZING POINT	110 °C, 230 °F (decomposition)
PARTICLE CHARACTERISTICS	Not available	OXIDIZING PROPERTY	Not available	pH	3.7 - 4.2 (10%)
RELATIVE DENSITY (WATER = 1)	Not available	SPECIFIC GRAVITY	2.284	UPPER FLAMMABLE/EXPLOSIVE LIMIT(S)	Not available
VAPOR DENSITY (AIR = 1)	Not available	VAPOR PRESSURE	20 torr (22.5°C)	VISCOSITY	Not available

The physical data presented above are typical values and should not be construed as a specification.

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY

Slowly effloresces in air.

CHEMICAL STABILITY

Stable under recommended storage conditions

INCOMPATIBLE MATERIALS

Strong oxidants. Magnesium. Very corrosive to plain steel.
Anhydrous copper sulfate causes hydroxylamine to ignite & the hydrated salt is vigorously reduced.

HAZARDOUS DECOMPOSITION PRODUCTS

Toxic fumes of carbon monoxide, carbon dioxide, nitrogen oxides and other gases may occur.
When heated to decomposition (110°C, 230°F) it emits toxic fumes of sulfur oxides.

HAZARDOUS POLYMERIZATION

Will not occur

POSSIBILITY OF HAZARDOUS REACTION

Not established

CONDITIONS TO AVOID

Moisture, sunlight and extreme temperatures
Hygroscopic - Avoid exposure to moisture

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Oral: Rat: LD50: (mg/kg): 300
Dermal: Rabbit: LD50: (mg/kg): 1000
Inhalation: Rat: LC50: (mg/L/4hr): Not available

SKIN CORROSION/IRRITATION

The substance is severely irritating to skin.

SERIOUS EYE DAMAGE/EYE IRRITATION

The substance is severely irritating to the eyes

RESPIRATORY SENSITIZATION

Based on available data, the classification criteria are not met.

SKIN SENSITIZATION

Based on available data, the classification criteria are not met.

GERM CELL MUTAGENICITY

Based on available data, the classification criteria are not met.
Suspected mutagen: In vivo micronucleus test outcome positive according to ISSMIC.

CARCINOGENICITY
OSHA

COPPER SULFATE is not listed.

NTP

COPPER SULFATE is not listed.

IARC

COPPER SULFATE is not evaluated.

California Proposition 65

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Based on available data, the classification criteria are not met.

ADDITIONAL CARCINOGENICITY INFORMATION
REPRODUCTIVE TOXICITY

Based on available data, the classification criteria are not met.

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE

Ingestion could cause effects on the blood, kidneys and liver. This may result in haemolytic anaemia, kidney impairment and liver impairment.

SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE

Repeated or prolonged inhalation of the aerosol may cause effects on the lungs. Ingestion may cause effects on the liver.

ASPIRATION HAZARDS

Based on available data, the classification criteria are not met.

SIGNS AND SYMPTOMS OF EXPOSURE
ROUTES OF EXPOSURE:

Oral, Dermal, Inhalation, Eye contact

EARLY ONSET SYMPTOMS RELATED TO EXPOSURE:

Not available

DELAYED HEALTH EFFECT FROM EXPOSURE:

Not available

Symptoms of exposure to this compound may include:

Irritation of the skin, eyes, respiratory tract and gastrointestinal tract. Ingestion can cause severe gastroenteric distress (vomiting, pain, localized corrosion, and hemorrhages), prostration, anuria, hematuria, anemia, increased number of white blood cells, icterus, coma, respiratory difficulty and circulatory failure.

It can also cause nausea, metallic taste, sweating, headache, burning sensation in the esophagus and stomach, abdominal pain, hemorrhagic gastritis, weak pulse, melena, conjunctivitis, corneal ulceration, hypotension and turbidity.

Other symptoms may include watery and bloody stools, burning in the mouth and throat, liver damage with jaundice, hemolysis, tenesmus, retching, collapse and convulsions.

Uremia, shock and renal failure have been reported.

Skin contact can cause smarting and first degree burns on short exposure. Prolonged exposure can result in second degree burns. Persons with preexisting Wilson's disease may be more susceptible to these effects.

ACUTE/CHRONIC HAZARDS:

This compound is toxic by ingestion. It is a strong irritant. When heated to decomposition it emits toxic fumes of sulfur oxides. It can be absorbed through the skin (repeated application to the skin causes poisoning).

POTENTIAL HEALTH EFFECTS
Inhalation

Harmful if inhaled. Causes respiratory tract irritation. The aerosol is irritating to the respiratory tract. Cough. Sore throat.

Ingestion

Corrosive on ingestion. Toxic if swallowed. Abdominal pain. Burning sensation. Diarrhoea. Nausea. Vomiting. Shock or collapse.

Skin

Toxic if absorbed through skin. Severely irritating to the skin. Redness. Pain.

Eyes

Severely irritating to the eyes. Pain. Redness. Blurred vision.

SECTION 12: ECOLOGICAL INFORMATION
ECOTOXICITY

EC50: 48 Hr: Crustacea: Prawn: (mg/L): 0.14

LC50: 96 Hr: Fish: (mg/L): 0.1

EC50: 72 or 96 Hr: Algae (or other aqua plants): (mg/L): Not available

PERSISTENCE AND DEGRADABILITY

Not available

BIOACCUMULATIVE POTENTIAL

Copper is accumulated by plants (absorbed by algae) and animals. Bioaccumulation of this chemical may occur along the food chain, for example in fish.

MOBILITY IN SOIL

If released to soil, copper sulfate may leach to groundwater.
Water solubility: 31.7g/100mL (0°C)

OTHER ADVERSE EFFECTS

The substance is very toxic to aquatic organisms.

This product is not intended to be released into the environment

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Dispose of in accordance with federal / local laws and regulations. Avoid release into the environment.

NOTES

Toxic pollutant designated pursuant to section 307(a)(1) of the USA Federal Water Pollution Control Act and is subject to effluent limitations.

SECTION 14: TRANSPORT INFORMATION

UN PROPER SHIPPING NAME

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

UN NUMBER

3077

CLASS

9

PACKING GROUP

III

AUSTRALIA
HAZCHEM

2Z

EU
TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE

Not Listed

ENVIRONMENTAL HAZARDS

Severe marine pollutant

SPECIAL SHIPPING INFORMATION

Not applicable

NOTES

Toxic pollutant designated pursuant to section 307(a)(1) of the USA Federal Water Pollution Control Act and is subject to effluent limitations.

SECTION 15: REGULATORY INFORMATION

UNITED STATES REGULATIONS

Chemical Name & CAS	CERCLA 40 CFR Part 302.4	SARA (Title III) 40 CFR Part 372.65	EPA 40 CFR Part 355		Pennsylvania	Right-to-know		California Prop 65
			Appendix A	Appendix B		New Jersey	Massachusetts	
COPPER SULFATE (Pentahydrate) 7758-99-8	X	N/L	N/L	N/L	X	X	X	N/L

N/L = Not Listed; X = Listed

AUSTRALIAN REGULATIONS

Chemical Name & CAS	Poisons and Therapeutic Goods	Therapeutic Goods Act	Code of Practices - Illicit Drug Precursors	Poisons Standard	Work Health and Safety Regulations	Inventory of Industrial Chemicals
COPPER SULFATE (Pentahydrate) 7758-99-8	N/L	Listed as Schedule 6	N/L	Listed	N/L	N/L

N/L = Not Listed

EU REGULATIONS

Chemical Name & CAS	REACH ANNEX XVII	REACH ANNEX XIV	EC 1005/2009	EC 850/2004	EC 1107/2009	PIC - Prior Informed Consent Regulation	EC 2012/18
COPPER SULFATE (Pentahydrate) 7758-99-8	N/L	N/L	N/L	N/L	N/L	N/L	N/L

N/L = Not Listed; X = Listed

Any EU regulation not listed above is not applicable to this product.

SUBJECT TO INTERNATIONAL AGREEMENT Not applicable

SECTION 16: OTHER INFORMATION
REFERENCES

Available upon request

ABBREVIATIONS AND ACRONYMS

ACGIH - American Conference of Governmental Industrial Hygienists; **AIHA WEEL** – American Industrial Hygiene Association Workplace Environment Exposure Levels; **CAESAR** – Computer Assisted Evaluation of industrial chemical Substances According to Regulations; **CAS** – Chemical Abstract Service; **CERCLA** – Comprehensive Environmental Response, Compensation, and Liability Act; **EC50** – Effective Concentration, 50%; **EPA** – Environmental Protection Agency; **GHS** – Global Harmonized System; **HMIS** – Hazardous Materials Information System; **HSE** – Health and Safety Executive; **HSIS** – Hazardous Substances Information System; **IARC** – International Agency for Research on Cancer; **IDLH** - Immediately Dangerous to Life or Health; **IRFMN** – Ready Biodegradability Model; **ISS** – Istituto Superiore Sanità; **LC50** – Lethal Concentration, 50%; **LD50** – Lethal Dose, 50%; **MSHA** - Mine Safety and Health Administration; **NIOSH** – National Institute for Occupational Safety and Health; **NTP** – National Toxicology Program; **OSHA PEL** – Occupational Safety & Health Administration Permissible Exposure Limits; **QSAR** – Quantitative Structure-activity relationship; **REL** - Recommended Exposure Limit; **SARA** – Superfund Amendments and Reauthorization Act; **STEL** – Short Term Exposure Limit; **TLV** – Threshold Limit Value; **TWA** – Time Weighted Average; **WHMIS** – Workplace Hazardous Materials Information System

LAST REVISION

02/2023

SUPERSEDES

08/2022

For a list of changes to the SDS since the last version, please communicate with MEDISCA at www.medisca.com

DISCLAIMER

This document was created in accordance with OSHA, Safe Work Australia and WHMIS regulations. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. MEDISCA® shall not be held liable for any damage resulting from handling or from contact with the above product. Recipients of the product must take responsibility for observing existing laws and regulations.

SUPPLEMENTARY INFORMATION

For all country specific requirements not outlined on this Safety Data Sheet, please request Supplementary Page to this Safety Data Sheet.

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