

Section 1: Product & Company Information

Product Identifier: Copper Sulfate (Acidized - Sulfuric)

Other Means of Identification

Product Number: 125252

Recommended Use and Restrictions on Use

Recommended Use: For Commercial Use

Restrictions on Use: Not to be used as a pesticide.

Manufacturer / Importer / Supplier / Distributor Information

Company Name: CORECHEM, Inc.

Address: 4320 Greenway Drive
Knoxville, TN 37918 USA

Information Telephone Number: 1-865-524-4239

Fax Number: 1-865-524-3375

Website: www.corecheminc.com

Contact Person: Regulatory Manager

E-mail: regulatory@corecheminc.com

Emergency Phone Number: Chemtrec® 1-800-424-9300 / Outside USA 1-703-527-3887 (monitored 24 hours/day)

Section 2: Hazards Identification

GHS Hazard Classification(s)

In accordance with OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012).

Physical Hazard(s)

Corrosive to Metals - 1

Health Hazard(s)

Acute Toxicity, Oral - 4

Corrosion/Irritation, Skin - 2

(Corrosion) Damage/Irritation, Eye - 1

Specific Target Organ Toxicity (STOT)-Respiratory Irritation, Single exposure - 3

Environmental Hazard(s)

Aquatic, Acute - 2

Aquatic, Chronic - 2

Label Elements

Signal Word

DANGER

Hazard Symbol(s)



Hazard Statement(s)

H290: May be corrosive to metals.

H302: Harmful if swallowed.

H315: Causes skin Irritation.

H318: Causes serious eye damage.

H335: May cause respiratory Irritation.

H401: Toxic to aquatic life.

H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements

General

Not applicable.

Prevention

P234: Keep only in original container.
P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
P264: Wash face, hands and any exposed skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
P280: Wear protective gloves and clothing/Wear eye and face protection.

Response

P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P304 + P340: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER or doctor/physician.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.
P317: Get medical help.
P321: Specific treatment (see supplemental first aid instructions on this label).
P330: Rinse mouth.
P332 + P313: If skin irritation occurs: Get medical attention.
P337 + P313: If eye irritation persists: Get medical attention.
P362: Take off contaminated clothing and wash before reuse.
P390 + 391: Absorb and collect spillage to prevent material damage.

Storage

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
P403 + P235: Store in a well-ventilated place. Keep cool.
P405: Store locked up.
P406: Store in corrosive resistant container with a resistant inner liner.

Disposal

P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOG)

None known.

Section 3: Composition/Information on Ingredients

Mixture

Chemical Identity ²	Common Name/Synonym(s)	CAS # ³	Weight %	Impurity or Stabilizing Additive
Copper (II) Sulfate Pentahydrate	-	7758-99-8	18.5%	No
Sulfuric Acid 93% Solution	-	7664-93-9	4.8%	No

- Information regarding the composition and the percent ranges of the mixtures ingredients are not presented as it Confidential Business Information (CBI). Where a medical emergency exists (as determined by medical professional), timely disclosure of CBI is assured. The information omitted pertains to only the names of the substances and the concentration in the mixture (product) and can only be requested by a doctor/physician or Local/State/Provincial or Federal Authority.
- Non-hazardous ingredients are not presented as to protect the proprietary formula of the product.
- "—"Indicates ingredient is a mixture and contains multiple ingredients or may have no identifying CAS number.

Section 4: First-Aid Measures

General Information

Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Wash contaminated clothing before reuse.

Inhalation

If breathed in, move person into fresh air and lie down. If not breathing, give artificial respiration. Consult a physician.

Skin Contact

Take off immediately all contaminated clothing. Wash off IMMEDIATELY with plenty of water for at least 15-20 minutes. Get medical attention immediately! Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes.

Eye Contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention immediately.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed

Symptoms

No data available.

Indication of immediate medical attention and special treatment needed

Hazards

HARMFUL OR FATAL IF SWALLOWED. Can cause irritation of eyes, skin, respiratory tract and, in extreme cases, burns. Avoid contact with eyes and skin. Avoid breathing dusts. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Keep from contact with clothing and other combustible materials.

Treatment

Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

Section 5: Fire-Fighting Measures

General Fire Hazards

Copper Sulfate Pentahydrate is not combustible, but may decompose in the heat of a fire to produce corrosive and/ or toxic fumes. Can burn; slight fire hazard when exposed to heat or flame. Move containers from fire area if you can do so without risk. Water may be ineffective in fighting the fire. Fight fire from a protected location.

Suitable (and Unsuitable) Extinguishing Media

Suitable Extinguishing Media

Extinguishing powder, alcohol resistant foam, carbon dioxide, water fog

Unsuitable Extinguishing Media

No data available.

Specific Hazards Arising from the Chemical

Sulfur oxides and copper fumes. Carbon dioxide and carbon monoxide are normal products of combustion. Incomplete combustion may produce irritating fumes and acrid smoke.

Special Protective Equipment and Precautions for Firefighters

Special Fire-Fighting Equipment Procedures

Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Special Protective Equipment for Fire-Fighters

As in any fire, wear self-contained breathing apparatus pressure-demand (OSHA/NIOSH approved or equivalent) and full protective gear.

Section 6: Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Evacuate spill area. Isolate hazard area and deny entry to unnecessary or unprotected personnel. Stay upwind and keep out of low area. Remove all possible sources of ignition in the surrounding area. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment. Ventilate contaminated area thoroughly shut off leaks if possible without personal risk.

Methods and Materials for Containment and Clean-Up

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Sweep up and shovel. Do not flush with water. Keep in suitable, closed containers for disposal.

Small Spills: Absorb spill with vermiculite or other inert material. Clean surface thoroughly to remove residual contamination.

Notification Procedures

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Environmental Precautions

Dike for later disposal. Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform authorities if large amounts are involved.

Section 7: Handling and Storage

Precautions for Safe Handling

DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Ground/bond container and receiving equipment. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not

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breathe dust/fume/gas/mist/vapors/spray. Use only with adequate ventilation. Wear appropriate personal protective equipment. Use caution when adding this material to water. Transfer and storage systems should be compatible. Observe good industrial hygiene practices.

Conditions for Safe Storage, including any Incompatibilities

Keep away from food, drink and animal feeding stuffs. Do not store in metal containers. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids. Keep container tightly closed. Store in cool, dry place. Store in a well-ventilated place.

Incompatible Materials: Strong oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Value	Source
Sulfuric Acid	TWA	0.2 mg/m ³	US. ACGIH Threshold Limit Values
Sulfuric Acid	TWA	1 mg/m ³	US OSHA Table Z-1

Chemical Identity	Type	Value	Source
Copper & inorganic Compounds, as Cu			
Dusts & Mists	TWA	1 mg/m ³	US. ACGIH Threshold Limit Values
Fume	TWA	0.2 mg/m ³	US. ACGIH Threshold Limit Values
Dusts & Mists	TWA	1 mg/m ³	US OSHA Table Z-1
Fume	TWA	0.1 mg/m ³	US OSHA Table Z-1

Biological Limit Values

The product does not contain any relevant quantities of hazardous materials with assigned biological limit values.

Appropriate Engineering Controls

Ensure that eyewash stations and safety showers are close to the workstation location. Use mechanical ventilation such as dilution and local exhaust. Use a corrosion-resistant ventilation system and exhaust directly to the outside. Supply ample air replacement. Provide dust collectors with explosion vents.

Individual protection measures, such as personal protective equipment (PPE)

General Information

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Eye/Face Protection

Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.

Skin Protection

Hand Protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing.

Respiratory Protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information

Hygiene Measures

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated footwear that cannot be cleaned. Wash hands before breaks and immediately after handling the product. Wash contaminated clothing before reuse. Avoid contact with eyes, skin, and clothing.

Section 9: Physical and Chemical Properties

Appearance:

Physical State: Liquid
Color: Blue

Odor: No data available.

Odor Threshold: No data available.

pH: < 1.5

Melting Point/Freezing Point: No data available.

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Initial Boiling Point and Boiling Range:	100 °C / 212 °F
Flash Point:	No data available.
Evaporation Rate (butyl acetate=1):	No data available.
Flammability (solid, gas):	No data available.
Upper/Lower Limit on Flammability or Explosive Limits	
Flammability Limit – Upper:	No data available.
Flammability Limit – Lower:	No data available.
Explosive Limit – Upper:	No data available.
Explosive Limit – Lower:	No data available.
Vapor Pressure:	1 mmHg @ 20 °C
Vapor Density (air =1):	No data available.
Relative Density (water=1):	1.01-1.03
Solubility(ies):	
Solubility in water:	Miscible.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-Ignition Temperature:	No data available.
Decomposition Temperature:	No data available.
Viscosity:	No data available.
Other Information:	
Molecular Weight:	No data available.
Formula:	No data available.

Section 10: Stability and Reactivity

Reactivity

No data available.

Chemical Stability

Material is stable under normal conditions.

Possibility of Hazardous Reactions

Hazardous polymerization does not occur.

Conditions to Avoid

Avoid high temperatures, exposure to air and incompatible materials.

Incompatible Materials

Avoid contact with hydroxylamine, magnesium, metal nitrates, and reducing and oxidizing agents. Corrosive to metals. Copper Sulfate Pentahydrate is incompatible with alkalines, phosphates, acetylene, hydrazine and nitromethane. Potentially explosive reaction with metal nitrates, strong bases, and oxidizers.

Hazardous Decomposition Products

Copper Sulfate: Sulfur oxides and Copper oxides.

Section 11: Toxicological Information

Information on routes of exposure

Ingestion: Harmful or fatal if swallowed.

Inhalation: Respiratory tract irritant, and inhalation may cause nose irritation, sore throat, coughing, and chest tightness and possibly, ulceration and perforation of the nasal septum.

Skin Contact: Irritating to skin, may cause burns.

Eye Contact: Irritating to eyes.

Information on Toxicological Effects

Acute Toxicity (List all possible routes of exposure)

Oral

Copper Sulfate Pentahydrate: LD50 (Rat): 300 mg/kg

Copper Sulfate Pentahydrate: LD50 (Mouse): 369 mg/kg

Dermal

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Inhalation

Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Repeated Dose Toxicity

No data available.

Skin Corrosion/Irritation

Irritating to skin.

Serious Eye Damage/Eye Irritation

Irritating to eyes.

Respiratory/Skin Sensitization

Irritating to respiratory system.

Carcinogenicity

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

Sulfuric acid: Group 1, Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Known to be human carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Component(s) of this product at levels greater than 0.1%, have been identified as a carcinogen or potential carcinogen by OSHA.

Germ Cell Mutagenicity

In Vitro

No mutagenic components identified.

In Vivo

No mutagenic components identified.

Reproductive Toxicity

None known.

Specific Target Organ Toxicity – Single Exposure

Respiratory system.

Specific Target Organ Toxicity – Repeated Exposure

None known.

Aspiration Hazard

Not classified.

Other Effects

None known.

Section 12: Ecological Information

Ecotoxicity

Acute Hazards to the Aquatic Environment

Fish

Copper Sulfate: LC50 (Pimephales Promelas, 96 h): 0.6752 mg/l

Sulfuric Acid: LC50 > (Brachydanio Rerio) 500 mg/L – 96h

Aquatic Invertebrates

Sulfuric Acid: EC50 (Water Flea) 29 mg/L – 24h

Toxicity to Aquatic Plants

No data available.

Chronic Hazards to the Aquatic Environment

Fish

No data available.

Aquatic Invertebrates

No data available.

Toxicity to Aquatic Plants

No data available.

Persistence and Degradability

Biodegradation

Does not biodegrade readily.

BOD/COD Ratio

No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

Bioconcentration is expected to occur.

Partition Coefficient n-octanol / water (log Kow)

No data available.

Mobility in Soil

The product is water soluble and may spread in water systems. It absorbs strongly to most soil types.

Other Adverse Effects

No data available.

Section 13: Disposal Considerations

Disposal Instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Contaminated Packaging

Handle contaminated packages in the same way as the substance itself. Emptied containers may retain hazardous residue and explosive vapors. Keep away from heat, sparks, and flames. Do not cut, puncture, or weld on or near this container. Follow label warnings until container is thoroughly cleaned or destroyed.

Section 14: Transportation Information

US Department of Transportation (DOT)

UN Number: UN3264

UN Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s.

Technical Name: (contains sulfuric acid and copper sulfate)

Hazard Class : 8

Subsidiary Hazard Risk: -

Packing Group: II

DOT Label/Placard Exemptions: Not determined

Special Provisions: 386, B2, IB2, T11, TP2, TP27

Packaging Exceptions: 49CFR 173.154

Packaging Non-Bulk: 49CFR 173.202

Packaging Bulk: 49CFR 173.242

Reportable Quantity (RQ): 10lb (4.54kg)

Marine Pollutant: Yes, severe

Poison Inhalation Hazard: No

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Emergency Response Guidebook (ERG) #: 154

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

Section 15: Regulatory Information

US Federal Regulations

Toxic Substance Control Act (TSCA), Chemical Substance Inventory, Section 8(b)

This product or ingredient(s) are listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substance List (40 CFR 302.4)

The following chemical(s) in this material are subject to reporting levels established by CERCLA:

Cupric Sulfate (CAS# 7758-98-7)

Sulfuric Acid (CAS# 7664-93-9) – 1000 lbs.

Clean Air Act (CAA), Section 112(r)

No chemical(s) in this material are subject to the reporting requirements of CAA.

Emergency Planning and Community Right-To-Know Act (EPCRA)

EPCRA 302 Extremely Hazardous Substance

The following chemical(s) in this material are subject to reporting levels established by SARA Title III, Section 302:

Copper Compounds (7440-50-8)

Sulfuric Acid (7664-93-9)

EPCRA 304 Emergency Response Notification

No data available.

EPCRA 311/312 Emergency and Hazardous Materials Reporting

Fire Hazard: Yes
Sudden Release of Pressure: No
Reactive: No
Acute (Immediate) Health Hazard: Yes
Chronic (Delayed) Health Hazard: Yes

EPCRA 313 Toxic Chemical Release Inventory (TRI) Reporting

The following chemical(s) in this material are subject to reporting levels established by SARA Title III, Section 313:

Cupric Sulfate (CAS# 7758-98-7)
Sulfuric Acid (7664-93-9)

US State Regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)

This product contains a chemical known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Important Note: Due to the changing nature of regulatory requirements, the information in this document should NOT be considered all-inclusive or authoritative. Users should make their own investigations to determine the suitability of the information for their particular purposes. International, Federal, State and Local regulations should be consulted to determine compliance with all required reporting requirements.

Section 16: Other Information

Hazardous Materials Identification System (HMIS®) Classification

Health Hazard: 2

Chronic Health Hazard: *

Flammability: 1

Physical Hazard: 0

(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

National Fire Protection Association (NFPA 704) Rating

Health Hazard: 2

Fire Hazard: 1

Reactivity Hazard: 0

Special: N/A

(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

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Sections Revised: -

Key to Abbreviations and Acronyms

ATE - Acute Toxicity Estimate
BCF - Bioconcentration Factor
EC50 - Effective concentration, 50%
IDHL - Immediately Dangerous to Life and Health
Kg - Kilogram
l - Liter
lb - Pound
LC50 - Lethal Concentration, 50%
LD50 - Lethal Dose, 50%
mg - milligram
ml - milliliter
N/A - Not Applicable
N/D - Not Determined
PEL - Permissible Exposure Limit
REL - Recommended Exposure Limit
STEL - Short-term Exposure Limit
TWA - Time weighted average

ACGIH - American Conference of Industrial Hygienists
AIHA - American Industrial Hygiene Association
BEI - Biological Exposure Indices
CAS - Chemical Abstracts Service
DOT - US Department of Transportation
EPA - US Environmental Protection Agency
GHS - Globally Harmonized System of Classification and Labelling of Chemicals
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association
IBC - Intermediate Bulk Container
IMDG - International Maritime Dangerous Goods
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - US Occupational Health and Safety Administration
SARA - US EPA Superfund Amendments and Reauthorization Act
TSCA - US EPA Toxic Substances Control Act
UN - United Nations

References

HSDB® - Hazardous Substances Data Bank

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Disclaimer

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