

Copper Sulfate 25%

Version number: 1.0

SECTION 1: Identification

1.1 Product identifier

Identification of the substance	Copper sulfate pentahydrate
Trade name	<u>Copper Sulfate 25%</u>
CAS number	7758-99-8

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Chemicals for various applications
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1.3 Details of the supplier of the safety data sheet

Valudor Products, LLC	Telephone: +1 (760) 635 8500
179 Calle Magdalena Suite 100	e-mail: info@valudor.com
Encinitas, California CA 92024	Website: www.valudor.com
United States	

1.4 Emergency telephone number

Emergency information	800-535-5053 (Infotrac)
As above or nearest toxicological information center.	

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Classification				
Section	Hazard class	Category	Hazard class and category	Hazard statement
A.1O	acute toxicity (oral)	4	Acute Tox. 4	H302
A.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318

For full text of abbreviations: see SECTION 16

2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Signal word	danger
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Pictograms

GHS05, GHS07



Hazard statements

H302 Harmful if swallowed.
H318 Causes serious eye damage.

Precautionary statements

P270 Do not eat, drink or smoke when using this product.
P280 Wear eye protection/face protection.
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/doctor.
P330 Rinse mouth.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	copper sulphate pentahydrate
Identifiers	
CAS No	7758-99-8
Molecular formula	CuSO ₄ H ₁₀ O ₅
Molar mass	249.7 g/mol

SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes

Self-protection of the first aider.
Remove affected person from the danger area and lay down.
Do not leave affected person unattended.
Take off immediately all contaminated clothing.
In all cases of doubt, or when symptoms persist, seek medical advice.
In case of unconsciousness place person in the recovery position. Never give anything by mouth.

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Following inhalation

Provide fresh air.

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Following skin contact

After contact with skin, wash immediately with plenty of water and soap.

Following eye contact

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

Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion

Rinse mouth. Do not induce vomiting.

Immediately call a doctor.

Notes for the doctor

None.

4.2 Most important symptoms and effects, both acute and delayed

These information are not available.

4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Non-combustible. Coordinate firefighting measures to the fire surroundings.

Unsuitable extinguishing media

none

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

Hazardous combustion products

sulfur oxides (SO_x), metal oxide smoke, toxic

5.3 Advice for firefighters

Non-combustible.

Keep containers cool with water spray.

In case of fire and/or explosion do not breathe fumes.

Coordinate firefighting measures to the fire surroundings.

Do not allow firefighting water to enter drains or water courses.

Collect contaminated firefighting water separately.

Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

protective clothing for use against solid particulates, wear self-contained breathing apparatus

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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For non-emergency personnel

Remove persons to safety.

Ventilate affected area.

Avoid contact with skin and eyes.

Do not breathe dust.

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

In case of formation of gases/vapors/mists suppress with water spray

Keep away from drains, surface and ground water.

Retain contaminated washing water and dispose of it.

If substance has entered a water course or sewer, inform the responsible authority.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Take up mechanically.

Advice on how to clean up a spill

Take up mechanically.

Collect spillage.

Other information relating to spills and releases

Place in appropriate containers for disposal.

Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5.

Personal protective equipment: see section 8.

Incompatible materials: see section 10.

Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Control of dust.

Do not breathe dust.

Avoid contact with skin and eyes.

Provision of sufficient ventilation.

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.

Removal of dust deposits.

Measures to protect the environment

Avoid release to the environment.

Do not empty into drains; dispose of this material and its container at hazardous or special waste col-

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lection point.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.

Wash hands after use.

Preventive skin protection (barrier creams/ointments) is recommended.

Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Flammability hazards

None.

Incompatible substances or mixtures

Incompatible materials: see section 10.

Store away from oxidizing agents.

Protect against external exposure, such as

heat, humidity, direct light irradiation

Consideration of other advice

Keep away from food, drink and animal feedingstuffs.

Ventilation requirements

Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

Keep container tightly closed and in a well-ventilated place.

Keep cool. Protect from sunlight.

Packaging compatibilities

Only packagings which are approved (e.g. acc. to DOT) may be used.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

The following constituents are the only constituents of the product which have a PEL, a TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Occupational exposure limit values (Workplace Exposure Limits)									
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Notation	Source
US	Particulates not otherwise regulated	-	PEL (CA)	-	10	-	-	dust	Cal/OSHA PEL
US	Particulates not otherwise regulated	-	PEL (CA)	-	5	-	-	r	Cal/OSHA PEL

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Occupational exposure limit values (Workplace Exposure Limits)									
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Notation	Source
US	particulates not otherwise classified (PNOC)	-	PEL	-	15	-	-	dust	29 CFR 1910.1000
US	particulates not otherwise classified (PNOC)	-	PEL	1,765	-	-	-	partml, dust	29 CFR 1910.1000
US	particulates not otherwise classified (PNOC)	-	PEL	529.5	-	-	-	partml, r, dust	29 CFR 1910.1000
US	particulates not otherwise classified (PNOC)	-	PEL	-	5	-	-	r	29 CFR 1910.1000
US	particulate not otherwise regulated	-	REL	-	-	-	-	appx-D	NIOSH REL
US	Copper salts	7758-99-8	PEL (CA)	-	1	-	-	dm, Cu	Cal/OSHA PEL
US	copper compounds	7758-99-8	REL	-	1 (10 h)	-	-	dm, Cu	NIOSH REL

Notation

appx-D see Appendix D - Substances with No Established RELs

Cu calculated as Cu (copper)

dm as dusts and mists

dust as dust

partml particles/ml

r respirable fraction

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

8.2 Exposure controls

Appropriate engineering controls

Use local and general ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

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Hand protection

Protective gloves		
Material	Material thickness	Breakthrough times of the glove material
NBR: acrylonitrile-butadiene rubber	≥ 0,5 mm	>480 minutes (permeation: level 6)
NR: natural rubber, latex	≥ 0,5 mm	>480 minutes (permeation: level 6)
IIR: isobutene-isoprene (butyl) rubber	≥ 0,65 mm	>480 minutes (permeation: level 6)

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Body protection

Protective clothing for use against solid particulates.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Particle filter device (DIN EN 143).

Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	solid (crystalline)
Color	blue
Odor	odorless
Odor threshold	not determined
Other safety parameters	
pH (value)	not applicable
Melting point/freezing point	not determined
Boiling point or initial boiling point and boiling range	not determined
Flash point	not applicable
Evaporation rate	not determined

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Flammability (solid, gas)	non-combustible
Explosive limits	not determined
Explosion limits of dust clouds	not determined
Vapor pressure	not determined
Density and/or relative density	
Density	2.286 g/cm ³ at 20 °C (ECHA)
Relative density	2.27 (water = 1)
Relative vapour density	not relevant (solid)
Solubility(ies)	
Water solubility	these information are not available
Partition coefficient	
n-octanol/water (log KOW)	not relevant (inorganic)
Auto-ignition temperature	not determined
Decomposition temperature	>110 °C
Viscosity	not relevant (solid)
Explosive properties	none
Oxidizing properties	none
Information for relevant hazard classes according to GHS	hazard classes acc. to GHS (physical hazards): not relevant
9.2 Other information	there is no additional information

SECTION 10: Stability and reactivity

10.1 Reactivity

This information is not available.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Hygroscopic solid.

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Keep away from heat.

Protect from moisture.

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10.5 Incompatible materials

oxidizers

10.6 Hazardous decomposition products

Sulfur oxides (SO_x).

Metal oxide smoke.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

If not otherwise specified the classification is based on:

Animal studies; Evidence from any other toxicity tests; Expert judgment (weight of evidence determination).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Acute toxicity

Shall not be classified as acutely toxic (dermal).

Harmful if swallowed.

Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	481 mg/kg	rat	OECD Guideline 401	ECHA
dermal	LD0	>2,000 mg/kg	rat	OECD Guideline 402	ECHA

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitization

Skin sensitization

Shall not be classified as a skin sensitizer.

Respiratory sensitization

Shall not be classified as a respiratory sensitizer.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

(ECHA, EU method B.12, OECD Guideline 471).

Carcinogenicity

IARC Monographs

not listed

National Toxicology Program (United States)

not listed

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OSHA Carcinogens

Not listed.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Specific target organ toxicity - repeated exposure

Classification could not be established because:

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

11.2 Other information

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)

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

Endpoint	Exposure time	Value	Species	Source
LC50	96 h	38.4 µg/l	fathead minnow (Pimephales promelas)	ECHA Chem

Aquatic toxicity (chronic)

No data available.

12.2 Persistence and degradability

Biodegradation

The study does not need to be conducted because the substance is inorganic.

Persistence

The study does not need to be conducted because the substance is inorganic.

12.3 Bioaccumulative potential

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

n-octanol/water (log KOW)

not relevant
(inorganic)

12.4 Mobility in soil

Data are lacking, inconclusive, or conclusive but not sufficient for classification.

12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

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12.6 Other adverse effects

Data are not available.

Remarks

Keep away from drains, surface and ground water.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packages

Completely emptied packages can be recycled.

Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number

DOT UN3077

IMDG-Code UN3077

ICAO-TI UN3077

14.2 UN proper shipping name

DOT Environmentally hazardous substance, solid, n.o.s.

IMDG-Code ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

ICAO-TI Environmentally hazardous substance, solid, n.o.s.

Technical name Copper sulfate

14.3 Transport hazard class(es)

DOT 9

IMDG-Code 9

ICAO-TI 9

14.4 Packing group

DOT III

IMDG-Code III

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	ICAO-TI	III
14.5	Environmental hazards	hazardous to the aquatic environment
14.6	Special precautions for user	-
14.7	Transport in bulk according to IMO instruments	-
14.8	<u>Information for each of the UN Model Regulations</u>	
	Transport of dangerous goods by road or rail (49 CFR US DOT) Additional information	
	Particulars in the shipper's declaration	UN3077, Environmentally hazardous substance, solid, n.o.s., (Copper sulfate), 9, III
	Danger label(s)	9, fish and tree
		
	Environmental hazards	yes (hazardous to the aquatic environment)
	Special provisions (SP)	8, 146, 335, 384, 441, A112, B54, B120, IB8, IP3, N20, N91, T1, TP33
	ERG No	171
	International Maritime Dangerous Goods Code (IMDG) Additional information	
	Marine pollutant	yes (hazardous to the aquatic environment) (Copper sulfate)
	Danger label(s)	9, fish and tree
		
	Special provisions (SP)	274, 335, 375, 966, 967, 969
	Excepted quantities (EQ)	E1
	Limited quantities (LQ)	5 kg
	EmS	F-A, S-F
	Stowage category	A
	International Civil Aviation Organization (ICAO-IATA/DGR) Additional information	
	Environmental hazards	yes (hazardous to the aquatic environment)
	Danger label(s)	9, fish and tree

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Special provisions (SP)	A97, A158, A179, A197, A215
Excepted quantities (EQ)	E1
Limited quantities (LQ)	30 kg

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

Superfund Amendment and Reauthorization Act (SARA TITLE III)

The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

Not listed

Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings				
Name of substance	Name acc. to inventory	CAS No	Remarks	Effective date
copper sulphate pentahydrate	copper compounds		Includes any unique chemical substance that contains copper as part of that chemical's infrastructure (except for C.I. Pigment Blue 15 (PB-15, CAS No. 147-14-8), C.I. Pigment Green 7 (PG-7, CAS No. 1328-53-6), and C.I. Pigment Green 36 (PG-36, CAS No. 14302-13-7) except copper phthalocyanine compounds that are substituted with only hydrogen and/or bromine and/or chlorine that are derivatives of copper phthalocyanine	1987-01-01

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

Not listed

Clean Air Act

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Not listed

Right to Know Hazardous Substance List

Toxic or Hazardous Substance List (MA-TURA)

Name of substance	Name acc. to inventory	CAS No	DEP CODE	PBT / HHS / LHS	PBT / HHS Thres hold	De Minimis Concentration Threshold
copper sulphate pentahydrate	Copper Compounds	-	1015	-	-	1.0 %

Hazardous Substances List (MN-ERTK)

Not listed

Hazardous Substance List (NJ-RTK)

Name of substance	Name acc. to inventory	CAS No	Remarks	Classifications	Listed in	Substance number	DOT number
copper sulphate pentahydrate	copper compounds	-	-		1 2 3 4 6 17 18 20	2215	3089

Legend

- Occupational Safety and Health Administration, 29 CFR 1910-Occupational Safety and Health Standards, Subpart Z-Toxic and Hazardous Substances, July 1, 2008.
- "2008 Emergency Response Guidebook," Research and Special Programs Administration, U.S. Department of Transportation, 2008.
- List of Toxics Release Inventory Chemicals, Section 313, Emergency Planning and Community Right to Know Act (EPCRA), Toxics Release Inventory (TRI) Program, U.S. Environmental Protection Agency, 40 CFR 372.65, July 1, 2008.
- "2009 TLVs® and BEIs®, Threshold Limit Values and Biological Exposure Indices," American Conference of Governmental Industrial Hygienists (ACGIH), 2009.
- List of Hazardous Substances and Reportable Quantities (RQ), Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), U.S. Environmental Protection Agency, 40 CFR 302, Table 302.4, July 1, 2008.
- Office of Hazardous Materials Safety, Research and Special Programs Administration, U.S. Department of Transportation, 49 CFR 172.101-Hazardous Materials Table, October 1, 2008.
- "NIOSH Pocket Guide to Chemical Hazards," National Institute for Occupational Safety and Health (NIOSH), U.S. Department of Health and Human Services, No. 2005-149, September 2005.
- "Environmental Hazardous Substance List," New Jersey Department of Environmental Protection, N.J.A.C. 7:1G-2, as printed in the Community Right to Know Survey Instruction Book, 2008.

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Hazardous Substance List (Chapter 323) (PA-RTK)

Name acc. to inventory	CAS No	Classification
COPPER	7440-50-8	*, E

Legend

* Any compound of this substance is also an environmental hazard

E Environmental hazard

Hazardous Substance List (RI-RTK)

Not listed

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

Not listed

Drug precursors, Chemicals designated within the Controlled Substances Act, 21 U.S.C. § 802, paragraphs 34 (list I) and 35 (list II)

Not listed

SECTION 16: Other information, including date of preparation or last revision

Date of preparation: 2025-11-06

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
29 CFR 1910.1000	29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)
49 CFR US DOT	49 CFR U.S. Department of Transportation
Cal/OSHA PEL	California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DEP CODE	Department of Environmental Protection Code
DGR	Dangerous Goods Regulations (see IATA/DGR)
DOT	Department of Transportation (USA)
EmS	Emergency Schedule
ERG No	Emergency Response Guidebook - Number
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
HHS	Higher hazard substance
IARC	International Agency for Research on Cancer
IARC Mono-graphs	IARC Monographs on the Evaluation of Carcinogenic Risks to Humans
IATA	International Air Transport Association

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Abbr.	Descriptions of used abbreviations
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LHS	Lower hazard substance
NIOSH REL	National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
ppm	Parts per million
STEL	Short-term exposure limit
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200 (May 20, 2024 eff. July 19, 2024).

Transport of dangerous goods by road or rail (49 CFR US DOT).

International Maritime Dangerous Goods Code (IMDG).

Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H302	Harmful if swallowed.
H318	Causes serious eye damage.

Responsible for the safety data sheet

Chemical Regulatory Compliance Company
Jasper, GA
USA
Telephone: +1 (630) 410-1660
e-Mail: GHS@crc-us.com
Website: www.crc-us.com

Disclaimer

This information is based upon the present state of our knowledge.

This SDS has been compiled and is solely intended for this product.