

### SECTION 1: Identification of the substance/mixture

#### 1.1. Product identifier

Product form	: Substance
Substance name	: Copper Sulfate Pentahydrate
Formula	: $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
Molecular weight	: 249.69 g/mol
CAS No.	: 7758-99-8
Product code	: LW-CUSO4
Synonyms	: Copper(II) sulfate Pentahydrate

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

Use of the substance/mixture	: Laboratory chemicals, Manufacture of substances
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#### 1.3. Emergency telephone number

Emergency number	: 1.800.424.9300 (USA) +1.703.527.3887 (INT)
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### SECTION 2: Hazards Identification

#### 2.1. Classification of the substance or mixture

##### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 4), H302

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Acute aquatic toxicity (Category 1), H400

Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2. GHS Label elements, including precautionary statements

Pictogram	: 
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Signal word	: Warning
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Hazard statement(s)

H302	: Harmful if swallowed.
H315	: Causes skin irritation.
H319	: Causes serious eye irritation.
H410	: Very toxic to aquatic life with long lasting effects.

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### Precautionary statement(s)

P264	: Wash skin thoroughly after handling.
P270	: Do not eat, drink or smoke when using this product.
P273	: Avoid release to the environment.
P280	: Wear eye protection/ face protection.
P280	: Wear protective gloves.
P301 + P312 + P330	: Wear protective gloves.
P302 + P352	: IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	: If skin irritation occurs: Get medical advice/ attention.
P332 + P313	: If eye irritation persists: Get medical advice/ attention.
P362	: Take off contaminated clothing and wash before reuse.
P391	: Collect spillage.
P501	: Dispose of contents/ container to an approved waste disposal plant.

### 2.3. Hazards not otherwise classified (HNOC) or not covered by GHS

none

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Synonyms	: Copper(II) sulfate Pentahydrate
Formula	: $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$
Molecular Weight	: 249.69 g/mol
CAS-No.	: 7758-99-8

### Hazardous components

Component	Classification	Concentration
Copper sulphate pentahydrate	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; Aquatic Acute 1; Aquatic Chronic 1; H302, H315, H319, H410	<= 100 %
For the full text of the H-Statements mentioned in this Section, see Section 16.		

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### SECTION 4: Description of first aid measures

#### 4.1. Description of first aid measures

- General advice : Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
- First-aid measures after inhalation : If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
- First-aid measures after skin contact : Wash off with soap and plenty of water. Consult a physician.
- First-aid measures after eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 4.2. Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

#### 4.3. Indication of any immediate medical attention and special treatment needed

No data available

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### 5.2. Special hazards arising from the substance or mixture

Sulphur oxides, Copper oxides.

#### 5.3. Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### 5.4. More Information

No data available.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

For personal protection see section 8.

#### 6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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### 6.3. Methods and material for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 6.4. Reference to other sections

For disposal see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

### 7.2. Conditions for safe storage, including any incompatibilities

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

Air sensitive. Hygroscopic. Handle and store under inert gas.

Storage class (TRGS 510): Non Combustible Solids

### 7.3. Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Copper sulphate pentahydrate	7758-99-8	TWA	1.000000 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		TWA	1.000000 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		TWA	1 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.		
		TWA	1 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits

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### 8.2. Exposure controls

Appropriate engineering controls : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 8.3. Personal protective equipment

Eye protection : Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin Protection : Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

#### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method:

EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body protection : Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection : For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type

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	OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Environmental exposure controls	: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Appearance	: Form: crystalline Color: blue
Odor	: No data available
Odor Threshold	: No data available
pH	: 3.7 - 4.5 at 50 g/l at 25 °C (77 °F)
Melting point/freezing point	: Melting point/range: 110 °C (230 °F)
Initial boiling point and boiling range	: No data available
Flash point	: No data available
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Upper/lower flammability or explosive limits	: No data available
Vapor pressure	: 9.7 hPa (7.3 mmHg) at 25 °C (77 °F)
Vapor density	: No data available
Relative density	: 2.284 g/cm <sup>3</sup>
Water solubility	: 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
Explosive properties	: No data available
Oxidizing properties	: No data available

#### 9.2. Other information

No data available

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### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No data available

#### 10.2. Chemical stability

Stable under recommended storage conditions.

#### 10.3. Possibility of hazardous reactions

No data available

#### 10.4. Conditions to avoid

No data available

#### 10.5. Incompatible materials

Powdered metals, Anhydrous copper(II) sulfate, reacts violently with:, hydroxylamine, Magnesium

#### 10.6. Hazardous decomposition products

Other decomposition products - No data available

In the event of fire: see section 5

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity	: LD50 Oral - Rat - 482 mg/kg (OECD Test Guideline 401) Remarks: anhydrous Aldrich - 469130 Page 6 of 8 Inhalation: No data available LD50 Dermal - Rat - > 2,000 mg/kg Remarks: anhydrous No data available
Skin corrosion/irritation	: Irritating to skin.
Serious eye damage/irritation	: Irritating to eyes.
Respiratory or skin sensitization	: Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.
Germ cell mutagenicity	: No data available
<b>Carcinogenicity</b>	
IARC:	: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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NTP:	:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
Reproductive toxicity	:	No data available
Specific target organ toxicity (single exposure)	:	No data available
Specific target organ toxicity (repeated exposure)	:	No data available
Aspiration hazard	:	No data available
Additional Information	:	RTECS: GL8900000 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Stomach - Irregularities - Based on Human Evidence Stomach - Irregularities - Based on Human Evidence

## SECTION 12: Ecological information

### 12.1. Toxicity

Toxicity to daphnia and other aquatic invertebrates : EC50 - Daphnia magna (Water flea) - 0.024 mg/l - 48 h

Toxicity to daphnia and other aquatic invertebrates : EC50 - Daphnia magna (Water flea) - 9.6 mg/l - 48 h

### 12.2. Persistence and degradability

Biodegradability : The methods for determining the biological degradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential : No data available

12.4. Mobility in soil : No data available

12.5. Results of PBT and vPvB assessment : PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6. Other adverse effects : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.



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### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

- Product : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
- Contaminated Packaging : Dispose of as unused product.

### SECTION 14: Transport information

#### DOT (US)

- UN number : 3077
- Class : 9
- Packing group : III
- Proper shipping name : Environmentally hazardous substances, solid, n.o.s. (Copper sulfate pentahydrate)
- Reportable Quantity (RQ) : 10 lbs
- Marine pollutant : yes
- Poison Inhalation Hazard : yes

#### IMDG

- UN number : 3077
- Class : 9
- Packing group : III
- EMS-No : F-A, S-F
- Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper sulfate pentahydrate)
- Marine pollutant : Yes

#### IATA

- UN number : 3077
- Class : 9
- Packing group : III
- Proper shipping name : Environmentally hazardous substance, solid, n.o.s. (Copper sulfate pentahydrate)

### SECTION 15: Regulatory information

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### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

Copper sulphate pentahydrate	7758-99-8	Revision Date
		1993-04-24

The following components are subject to reporting levels established by SARA Title III, Section 313:

### SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

Copper sulphate pentahydrate	CAS-No.	Revision Date
	7758-99-8	1993-04-24

No components are subject to the Massachusetts Right to Know Act.

### Pennsylvania Right To Know Components

Copper sulphate pentahydrate	CAS-No.	Revision Date
	7758-99-8	1993-04-24

### New Jersey Right To Know Components

Copper sulphate pentahydrate	CAS-No.	Revision Date
	7758-99-8	1993-04-24

### California Prop. 65 Components

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

## SECTION 16: Other information

### Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	: Acute toxicity
Aquatic Acute	: Acute aquatic toxicity
Aquatic Chronic	: Chronic aquatic toxicity
Eye Irrit.	: Eye irritation
H302	: Harmful if swallowed.
H315	: Causes skin irritation.
H319	: Causes serious eye irritation.
H400	: Very toxic to aquatic life.
Met. Corr.	: Corrosive to metals

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### HMIS Rating

Health Hazard	:	2
Chronic Health Hazard	:	*
Flammability	:	0
Physical Hazard	:	0

### NFPA Rating

Health hazard	:	0
Fire Hazard	:	0
Reactivity Hazard	:	0

### Further Information

Information in this SDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and Loudwolf Holdings Ltd. assumes no liability resulting from the use of this SDS. The user must determine suitability of this information for his/her application.