

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Reference number: C0508

Issue date: 16/08/2023 Revision date: 16/08/2023 Supersedes version of: 14/12/2017 Version: 3.0

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product form	: Substance
Trade name	: Cupric sulphate pentahydrate
Chemical name	: copper sulphate pentahydrate
EC Index-No.	: 029-004-00-0
EC-No.	: 231-847-6
CAS-No.	: 7758-99-8
REACH registration No.	: 01-2119520566-40
Product code	: C0508
Formula	: $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$

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

#### 1.2.1. Relevant identified uses

Main use category	: Professional use
Industrial/Professional use spec	: For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

Duchefa Biochemie B.V.  
A. Hofmanweg 71  
2031 BH Haarlem  
The Netherlands  
T +31(0)23-5319093 - F +31(0)23-5318027  
[info@duchefa.nl](mailto:info@duchefa.nl)

### 1.4. Emergency telephone number

Emergency number	: Supplier contact information: +31(0)23-5319093 (M-F 09:00-17:00) +31(0)6-30008100 (outside office hours)
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Country	Organisation/Company	Address	Emergency number	Comment
	World Health Organization world directory of poison centres	<a href="http://apps.who.int/poisoncentres/">http://apps.who.int/poisoncentres/</a>		Consult website for a local poison centre

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (oral), Category 4	H302	
Serious eye damage/eye irritation, Category 1	H318	
Hazardous to the aquatic environment – Acute Hazard, Category 1H400		(M=10)
Hazardous to the aquatic environment – Chronic Hazard, Category H410		

1

# Cupric sulphate pentahydrate

C0508

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Full text of H- and EUH-statements: see section 16

### Adverse physicochemical, human health and environmental effects

No additional information available

## 2.2. Label elements

### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

Hazard statements (CLP)

: H302 - Harmful if swallowed.

H318 - Causes serious eye damage.

H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements (CLP)

: P264 - Wash hands thoroughly after handling.

P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.

P305+P351+P338+P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor.

P330 - Rinse mouth.

P391 - Collect spillage.

## 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Substance type

: Mono-constituent

Name	Product identifier	%
Cupric sulphate pentahydrate	CAS-No.: 7758-99-8 EC-No.: 231-847-6 EC Index-No.: 029-004-00-0 REACH-no: 01-2119520566-40	≥ 99

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general

: Symptoms of poisoning may not appear for several hours.

First-aid measures after inhalation

: Call a doctor. Allow affected person to breathe fresh air.

First-aid measures after skin contact

: Seek medical advice. Flush with plenty of water.

First-aid measures after eye contact

: Seek medical advice. Rinse with water.

First-aid measures after ingestion

: Rinse mouth. Seek medical attention immediately.

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

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

Symptoms/effects : Nausea. Irritating. Unconsciousness. Gastrointestinal complaints. Vomiting.

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

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Dry powder. Alcohol resistant foam. Water spray.

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

Hazardous decomposition products in case of fire : When heated to decomposition, emits toxic fumes: - SO<sub>x</sub>.

### 5.3. Advice for firefighters

Firefighting instructions : Prevent fire fighting water from entering the environment.  
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

Protective equipment : Wear suitable protective clothing.  
Measures in case of dust release : Avoid dust formation.

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

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

Methods for cleaning up : This material and its container must be disposed of in a safe way, and as per local legislation. Sweep up dry powder and dispose properly.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Avoid dust formation.

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

Storage conditions : Store at room temperature. Store in a well-ventilated place. Keep container tightly closed.

### 7.3. Specific end use(s)

For professional use only. Duchefa Biochemie B.V. products are intended only for "in vitro laboratory" research purposes.

# Cupric sulphate pentahydrate

C0508

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### 8.1.1 National occupational exposure and biological limit values

Cupric sulphate pentahydrate (7758-99-8)	
<b>EU - Indicative Occupational Exposure Limit (IOEL)</b>	
Local name	Copper(II) sulfate pentahydrate
IOEL TWA	0,01 mg/m <sup>3</sup> (respirable fraction)
Remark	(Year of adoption 2014)
Regulatory reference	SCOEL Recommendations
<b>Finland - Occupational Exposure Limits</b>	
Local name	Kupari-(II)-sulfaatti, pentahydraatti
HTP (OEL TWA) [1]	0,02 mg/m <sup>3</sup> Cu, alveolijae
Regulatory reference	HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)

##### 8.1.2. Recommended monitoring procedures

No additional information available

##### 8.1.3. Air contaminants formed

No additional information available

##### 8.1.4. DNEL and PNEC

Cupric sulphate pentahydrate (7758-99-8)	
<b>DNEL/DMEL (Workers)</b>	
Long-term - systemic effects, dermal	137 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	1 mg/m <sup>3</sup>
Long-term - local effects, inhalation	1 mg/m <sup>3</sup>
<b>DNEL/DMEL (General population)</b>	
Acute - systemic effects, oral	0,082 mg/kg bodyweight/day
Long-term - systemic effects, oral	0,041 mg/kg bodyweight/day
<b>PNEC (Water)</b>	
PNEC aqua (freshwater)	7,8 µg/l
PNEC aqua (marine water)	5,2 µg/l
<b>PNEC (Sediment)</b>	
PNEC sediment (freshwater)	87 mg/kg dwt
PNEC sediment (marine water)	676 mg/kg dwt
<b>PNEC (Soil)</b>	
PNEC soil	65 mg/kg dwt
<b>PNEC (STP)</b>	
PNEC sewage treatment plant	230 µg/l

##### 8.1.5. Control banding

No additional information available

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

**8.2. Exposure controls****8.2.1. Appropriate engineering controls**

No additional information available

**8.2.2. Personal protection equipment****Personal protective equipment symbol(s):****8.2.2.1. Eye and face protection**

Eye protection			
Type	Field of application	Characteristics	Standard
Safety glasses	Dust		EN 166

**8.2.2.2. Skin protection****Skin and body protection:**

Wear suitable protective clothing

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0,11		EN ISO 374

**8.2.2.3. Respiratory protection****Respiratory protection:**

Dust production: dust mask with filter type P2

Respiratory protection			
Device	Filter type	Condition	Standard
Dust mask	Type P2	Dust protection	EN 143

**8.2.2.4. Thermal hazards**

No additional information available

**8.2.3. Environmental exposure controls**

No additional information available

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state	: Solid
Colour	: Blue.
Appearance	: Powder.
Molecular mass	: 249,7 g/mol
Odour	: Odourless.
Odour threshold	: Not available
Melting point	: 110 °C
Freezing point	: Not available
Boiling point	: Not available
Flammability	: Not available
Explosive limits	: Not applicable

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Lower explosion limit	: Not applicable
Upper explosion limit	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: 88 – 245 °C
pH	: 3,5 – 4,5 (50 g/l, 20°C)
pH solution	: Not available
Viscosity, kinematic	: Not applicable
Solubility	: Water: 320 g/l
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: 9,7 hPa (25 °C)
Vapour pressure at 50°C	: Not available
Density	: ≈ 2,29 g/cm <sup>3</sup>
Relative density	: Not available
Relative vapour density at 20°C	: Not applicable
Particle size	: Not available

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

No additional information available

#### 9.2.2. Other safety characteristics

Other properties : Air sensitive.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Stable under normal conditions.

### 10.2. Chemical stability

No additional information available

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

Keep away from naked flames/heat.

### 10.5. Incompatible materials

Strong oxidizers. Magnesium. Hydroxylamine.

### 10.6. Hazardous decomposition products

When heated to decomposition, emits dangerous fumes: - SO<sub>x</sub>.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Cupric sulphate pentahydrate (7758-99-8)	
LD50 oral rat	960 mg/kg
LD50 dermal rat	> 2000 mg/kg

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Skin corrosion/irritation	: Not classified pH: 3,5 – 4,5 (50 g/l, 20°C)
Serious eye damage/irritation	: Causes serious eye damage. pH: 3,5 – 4,5 (50 g/l, 20°C)
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

### 11.2. Information on other hazards

#### 11.2.1. Endocrine disrupting properties

No additional information available

#### 11.2.2. Other information

Potential adverse human health effects and symptoms	: Excessive or prolonged inhalation of fumes may cause metal fume fever, Death in extreme cases
Other information	: See actual entry in RTECS for complete information: GL8900000

## SECTION 12: Ecological information

### 12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute)	: Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term (chronic)	: Very toxic to aquatic life with long lasting effects.

Cupric sulphate pentahydrate (7758-99-8)	
LC50 - Fish [1]	0,11 mg/l Oncorhynchus Mykiss
EC50 - Crustacea [1]	0,024 mg/l Daphnia Magna

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

No additional information available

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Endocrine disrupting properties

No additional information available

### 12.7. Other adverse effects

Additional information	: Prevent entry to sewers and public waters. Avoid release to the environment
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# Cupric sulphate pentahydrate

C0508

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste treatment methods : Avoid release to the environment. Dispose in a safe manner in accordance with local/national regulations.

### SECTION 14: Transport information

In accordance with ADR / IMDG / IATA

ADR	IMDG	IATA
<b>14.1. UN number or ID number</b>		
UN 3077	UN 3077	UN 3077
<b>14.2. UN proper shipping name</b>		
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	Environmentally hazardous substance, solid, n.o.s.
<b>Transport document description</b>		
UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III, (E)	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III, MARINE POLLUTANT	UN 3077 Environmentally hazardous substance, solid, n.o.s., 9, III
<b>14.3. Transport hazard class(es)</b>		
9	9	9
		
<b>14.4. Packing group</b>		
III	III	III
<b>14.5. Environmental hazards</b>		
Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes	Dangerous for the environment: Yes
No supplementary information available		

#### 14.6. Special precautions for user

Special transport precautions : The driver shall not attempt to deal with any fire of the load, Warn road users and passers by to keep away from danger area, NOTIFY POLICE AND FIRE BRIGADE IMMEDIATELY

#### Overland transport

Classification code (ADR) : M7  
Special provisions (ADR) : 274, 335, 601, 375  
Limited quantities (ADR) : 5kg  
Excepted quantities (ADR) : E1  
Transport category (ADR) : 3

# Cupric sulphate pentahydrate

C0508

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Hazard identification number (Kemler No.) : 90

Orange plates :



Tunnel restriction code (ADR) : E

EAC code : 2Z

### Transport by sea

Special provisions (IMDG) : 274, 335, 966, 967, 969

Limited quantities (IMDG) : 5 kg

Excepted quantities (IMDG) : E1

EmS-No. (Fire) : F-A

EmS-No. (Spillage) : S-F

Stowage category (IMDG) : A

Stowage and handling (IMDG) : SW23

MFAG-No : 171

### Air transport

PCA Excepted quantities (IATA) : E1

PCA Limited quantities (IATA) : Y956

PCA limited quantity max net quantity (IATA) : 30kgG

PCA packing instructions (IATA) : 956

PCA max net quantity (IATA) : 400kg

CAO packing instructions (IATA) : 956

CAO max net quantity (IATA) : 400kg

Special provisions (IATA) : A97, A158, A179, A197

ERG code (IATA) : 9L

## 14.7. Maritime transport in bulk according to IMO instruments

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

##### REACH Annex XVII (Restriction List)

Not listed on REACH Annex XVII

##### REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

##### REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

##### PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

##### POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

##### Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

##### Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

# Cupric sulphate pentahydrate

C0508

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

### 15.1.2. National regulations

#### Germany

Water hazard class (WGK) : WGK 3, Highly hazardous to water (KBwS-Beschluss; ID No. 141).

Hazardous Incident Ordinance (12. BImSchV) : Is not subject of the Hazardous Incident Ordinance (12. BImSchV)

#### Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

SZW-lijst van reprotoxische stoffen –

Borstvoeding

SZW-lijst van reprotoxische stoffen –

Vruchtbaarheid

SZW-lijst van reprotoxische stoffen –

Ontwikkeling

#### Denmark

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

### 15.2. Chemical safety assessment

No additional information available

## SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Revision date	Modified	
	Supersedes	Modified	
	Substance type	Added	
	Number of blue cones/lights (ADN)	Removed	
	Tank special provisions (IMDG)	Removed	
	Tank instructions (IMDG)	Removed	
	IBC special provisions (IMDG)	Removed	
	IBC packing instructions (IMDG)	Removed	
1.1	Formula	Modified	
1.1	REACH registration No.	Modified	
2.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Modified	
2.2	Signal word (CLP)	Modified	
2.2	Hazard pictograms (CLP)	Modified	
2.2	Precautionary statements (CLP)	Modified	
2.2	Hazard statements (CLP)	Modified	
3	Composition/information on ingredients	Modified	
8	Regulatory reference	Added	

# Cupric sulphate pentahydrate

C0508

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Indication of changes			
Section	Changed item	Change	Comments
8	Regulatory reference	Added	
8.1	HTP (OEL TWA) [1]	Added	
8.1	Local name	Added	
8.1	Remark	Added	
8.1	IOEL TWA	Added	
8.1	Local name	Added	
8.1	PNEC soil	Added	
8.1	PNEC sewage treatment plant	Added	
8.1	PNEC sediment (marine water)	Added	
8.1	PNEC sediment (freshwater)	Added	
8.1	PNEC aqua (marine water)	Added	
8.1	PNEC aqua (freshwater)	Added	
8.1	Long-term - systemic effects, oral	Added	
8.1	Long-term - systemic effects, inhalation	Added	
8.1	Long-term - systemic effects, dermal	Added	
8.1	Long-term - local effects, inhalation	Added	
8.1	Acute - systemic effects, oral	Added	
9.1	Decomposition temperature	Modified	
9.1	Flash point	Removed	
9.1	pH	Modified	
9.1	pH solution	Removed	
11.1	LD50 dermal rat	Modified	
11.1	ATE CLP (dermal)	Added	
11.1	ATE CLP (oral)	Modified	
11.1	Other information	Modified	
14.6	Special packing provisions (IMDG)	Removed	
14.6	Packing instructions (IMDG)	Removed	

Abbreviations and acronyms:	
ATE	Acute Toxicity Estimate
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DPD	Dangerous Preparations Directive 1999/45/EC
DSD	Dangerous Substances Directive 67/548/EEC
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods

# Cupric sulphate pentahydrate

C0508

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### Abbreviations and acronyms:

LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
PBT	Persistent Bioaccumulative Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
SDS	Safety Data Sheet

Data sources

: Manufacturer. REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

### Full text of H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Safety Data Sheet (SDS), EU Duchefa 2023

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.