

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

1.1. Product identifier

Product form	: Substance
Substance name	: copper sulphate pentahydrate
Chemical name	: copper sulphate pentahydrate
IUPAC name	: Copper sulphate
EC Index-No.	: 029-023-00-4
EC-No.	: 231-847-6
CAS-No.	: 7758-99-8
REACH registration No	: 01-2119520566-40
Product code	: 100.160.000
Type of product	: Pure substance
Formula	: CuSO ₄ .5H ₂ O
Synonyms	: blue copper / blue copperras / blue stone / blue viking / blue vitriol / chalcantite / chalcantite, natural / copper sulphate, pentahydrate / copper vitriol / copper(II) sulfate, pentahydrate / couperose bleue / CSP (=copper(II)sulfate, pentahydrate) / cupric sulfate, pentahydrate / phyto-bordeaux (=copper(II)sulfate, pentahydrate) / phyton-27 (=copper(II)sulfate, pentahydrate) / roman vitriol (=copper(II)sulfate, pentahydrate) / sulfacop / sulfuric acid, copper(2+) salt (1:1), pentahydrate / triangle(=copper(II)sulfate, pentahydrate) / vencedor
BIG No	: 58226

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

1.2.1. Relevant identified uses

Main use category	: Industrial use, Professional use
Use of the substance/mixture	: Fertilizers

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Biron B.V. B.V.
De Vecht 5
NL- 8253 PH Dronten – Flevoland
The Netherlands
T +31 (0)321 336 730
Info@biron.nl - www.biron.nl

1.4. Emergency telephone number

Emergency number	: National Poisons Information Service +44 870 600 6266 worldwide: http://www.who.int/ipcs/poisons/centre/directory/en
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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 1	H400
Hazardous to the aquatic environment – Chronic Hazard, Category 1	H410
Full text of H- and EUH-statements: see section 16	

Adverse physicochemical, human health and environmental effects

Harmful if swallowed. Causes serious eye damage. Very toxic to aquatic life with long lasting effects.

copper sulphate pentahydrate

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2.2. Label elements

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

Hazard pictograms (CLP) :



GHS05

GHS07

GHS09

CLP Signal word :

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) :

P273 - Avoid release to the environment.

P280 - Wear protective gloves, protective clothing, eye protection, face protection.

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

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 doctor, a POISON CENTER.

P391 - Collect spillage.

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
copper sulphate pentahydrate	CAS-No.: 7758-99-8 EC-No.: 231-847-6 EC Index-No.: 029-023-00-4 REACH-no: 01-2119520566-40	90	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general :

Call a poison center or a doctor if you feel unwell.

First-aid measures after inhalation :

Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact :

Wash skin with plenty of water.

First-aid measures after eye contact :

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

First-aid measures after ingestion :

Rinse mouth. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after inhalation :

AFTER INHALATION OF DUST: Respiratory difficulties. Coughing. Dry/sore throat.

Symptoms/effects after skin contact :

No effects known.

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Symptoms/effects after eye contact	: Serious damage to eyes.
Symptoms/effects after ingestion	: AFTER INGESTION OF HIGH QUANTITIES: Nausea. Headache. Vomiting. Dizziness. Disturbances of consciousness. Dry/sore throat. Feeling of weakness. Diarrhoea. Abdominal pain. Change in the haemogramme/blood composition. Low arterial pressure. Change in urine composition. Irritation of the oral mucous membranes. Metal taste.
Chronic symptoms	: Skin rash/inflammation. Coughing. Feeling of weakness. Red skin. Enlargement/affection of the liver. Affection of the renal tissue. Change in the haemogramme/blood composition. Possible inflammation of the respiratory tract. Risk of pneumonia. Itching. Loss of weight.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD: Non combustible. INDIRECT FIRE HAZARD: Reactions involving a fire hazard: see "Reactivity Hazard".
Explosion hazard	: DIRECT EXPLOSION HAZARD: No direct explosion hazard.
Hazardous decomposition products in case of fire	: On burning: release of toxic and corrosive gases/vapours (sulphur oxides) and formation of metal oxides.

5.3. Advice for firefighters

Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions	: Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	: Gloves (EN 374). Safety glasses (EN 166). Protective clothing (EN 14605 or EN 13034). Dust cloud production: self-contained breathing apparatus (EN 136 + EN 137).
Emergency procedures	: Ventilate spillage area. Avoid contact with skin and eyes.
Measures in case of dust release	: In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	: Collect spillage.
Methods for cleaning up	: Mechanically recover the product.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a well-ventilated place. Keep cool.
- Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources.
- Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) bases. water/moisture.
- Storage area : Meet the legal requirements. Store in a dry area.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

copper sulphate pentahydrate (7758-99-8)

EU - Indicative Occupational Exposure Limit (IOEL)

Local name	Copper(II) sulfate pentahydrate
Remark	(Year of adoption 2014)
Regulatory reference	SCOEL Recommendations

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

copper sulphate pentahydrate (7758-99-8)

DNEL/DMEL (Workers)

Long-term - systemic effects, dermal	137 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	1 mg/m ³
Long-term - local effects, inhalation	1 mg/m ³

DNEL/DMEL (General population)

Acute - systemic effects, oral	0.082 mg/kg bodyweight/day
Long-term - systemic effects, oral	0.041 mg/kg bodyweight/day

PNEC (Water)

PNEC aqua (freshwater)	7.8 µg/l
PNEC aqua (marine water)	5.2 µg/l

PNEC (Sediment)

PNEC sediment (freshwater)	87 mg/kg dwt
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copper sulphate pentahydrate (7758-99-8)	
PNEC sediment (marine water)	676 mg/kg dwt
PNEC (Soil)	
PNEC soil	65 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	230 µg/l

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves

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

Other skin protection

Materials for protective clothing:

Excellent resistance: Nitrile rubber. Good resistance: Butyl rubber. Neoprene. Polyvinylchloride (PVC). rubber. Viton

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: Blue.
Appearance	: Crystalline solid. Crystalline powder.
Molecular mass	: 249.7 g/mol
Odour	: Odourless.
Odour threshold	: Not available
Melting point	: Not applicable (decomposes)
Freezing point	: Not applicable
Boiling point	: Not applicable (decomposes)
Flammability	: Non flammable.
Explosive limits	: Not applicable
Lower explosion limit	: Not applicable
Upper explosion limit	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: 110 °C (Hydrate form)
pH	: 4
pH solution	: Not available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable (solid)
Solubility	: Soluble in water. Soluble in methanol. Soluble in glycerol. Water: 22 g/100ml (25 °C) Ethanol: 16 g/100ml (18 °C)
Partition coefficient n-octanol/water (Log Kow)	: Not available
Partition coefficient n-octanol/water (Log Pow)	: -0.2 (Literature)
Vapour pressure	: Not applicable (solid)
Vapour pressure at 50 °C	: Not available
Density	: 2286 kg/m ³
Relative density	: 2.29 (Hydrate form)
Relative vapour density at 20 °C	: Not applicable (solid)
Particle size	: < 125 µm (CIPAC MT 59.1, < 0.01 %, No data available)
Particle size distribution	: Not available
Particle shape	: Not available
Particle aspect ratio	: Not available
Particle aggregation state	: Not available
Particle agglomeration state	: Not available
Particle specific surface area	: Not available
Particle dustiness	: 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

VOC content	: Not applicable (inorganic)
Other properties	: Acid reaction

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts violently with (strong) oxidizers. Reacts on exposure to water (moisture) with (some) metals.

10.2. Chemical stability

Stable under normal conditions.

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10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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

copper sulphate pentahydrate (7758-99-8)

LD50 oral rat	481 mg/kg OECD 401 methode, Acute Oral Toxicity
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal)), Guideline: EPA OTS 798.1100 (Acute Dermal Toxicity), Guideline: other:
LD50 dermal rabbit	> 2000 mg/kg Rabbit; Literature study; OECD 402 method: Acute dermal toxicity
LC50 Inhalation - Rat	9.92 mg/l Source: GESTIS

Skin corrosion/irritation : Not classified
pH: 4
Serious eye damage/irritation : Causes serious eye damage.
pH: 4
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

copper sulphate pentahydrate (7758-99-8)

NOAEL (subchronic, oral, animal/female, 90 days)	126 mg/kg bodyweight as Cu; method analogous to EU Method B.26; mouse; 92 days
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Aspiration hazard : Not classified

copper sulphate pentahydrate (7758-99-8)

Viscosity, kinematic	Not applicable
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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 : Harmful if swallowed, Not irritant to skin, Practically non-toxic in contact with skin (LD50 skin > 2000 mg/kg), Causes serious eye damage.

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SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Very toxic to aquatic life with long lasting effects.
Ecology - air	: Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	: Very toxic to crustacea (Daphnia). Very toxic to crustacea (Daphnia), with long lasting effects. Very toxic to fishes. Very toxic to fish, with long lasting effects. Groundwater pollutant. Very toxic to algae. Very toxic to algae, with long lasting effects. Inhibits photosynthesis of algae. May cause eutrophication at very low concentration. pH shift.
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.

copper sulphate pentahydrate (7758-99-8)	
LC50 - Fish [1]	0.038 – 0.256 mg/l as Cu; 22°C; Pimephales promelas
EC50 72h - Algae [1]	0.368 mg/l ErC50; OECD 201 method: Algae: growth inhibition study; 72 hours; Pseudokirchneriella subcapitata; static system; fresh water; read across
ErC50 algae	0.368 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Read-across, Anhydrous form)

12.2. Persistence and degradability

copper sulphate pentahydrate (7758-99-8)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

12.3. Bioaccumulative potential

copper sulphate pentahydrate (7758-99-8)	
Partition coefficient n-octanol/water (Log Pow)	-0.2 (Literature)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

copper sulphate pentahydrate (7758-99-8)	
Surface tension	No data available in the literature
Ecology - soil	No (test)data on mobility of the substance available. Toxic to flora.

12.5. Results of PBT and vPvB assessment

copper sulphate pentahydrate (7758-99-8)	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Do not discharge into drains or the environment. Dispose of at authorized waste collection point. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals.
Additional information	: Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
European List of Waste (LoW) code	: 15 01 10* - packaging containing residues of or contaminated by dangerous substances

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR:	Special provision(s) applied : 375
ADN:	Special provision(s) applied : 375
IATA:	Special provision(s) applied : A197
IMDG:	Special provision(s) applied : 969
RID:	Special provision(s) applied : 375

These substances when carried in single or combination packagings containing a net quantity per single or inner packaging of 5 l or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids, are not subject to any other provisions of ADR provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

14.1. UN number or ID number

UN-No. (ADR)	: UN 3077
UN-No. (IMDG)	: UN 3077
UN-No. (IATA)	: UN 3077
UN-No. (ADN)	: UN 3077
UN-No. (RID)	: UN 3077

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper Shipping Name (IMDG)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper Shipping Name (IATA)	: Environmentally hazardous substance, solid, n.o.s.
Proper Shipping Name (ADN)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Proper Shipping Name (RID)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Transport document description (ADR)	: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS Copper Sulphate), 9, III, (-)
Transport document description (IMDG)	: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III, MARINE POLLUTANT
Transport document description (IATA)	: UN 3077 Environmentally hazardous substance, solid, n.o.s., 9, III
Transport document description (ADN)	: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III
Transport document description (RID)	: UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III

14.3. Transport hazard class(es)

ADR	
Transport hazard class(es) (ADR)	: 9
Danger labels (ADR)	: 9
	:



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IMDG

Transport hazard class(es) (IMDG) : 9
Danger labels (IMDG) :



IATA

Transport hazard class(es) (IATA) : 9
Danger labels (IATA) :



ADN

Transport hazard class(es) (ADN) : 9
Danger labels (ADN) :



RID

Transport hazard class(es) (RID) : 9
Danger labels (RID) :



14.4. Packing group

Packing group (ADR) : III
Packing group (IMDG) : III
Packing group (IATA) : III
Packing group (ADN) : III
Packing group (RID) : III

14.5. Environmental hazards

Dangerous for the environment : Yes
Marine pollutant : Yes
Other information : No supplementary information available

14.6. Special precautions for user

Overland transport

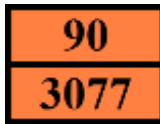
Transport regulations (ADR) : Subject to the provisions
Classification code (ADR) : M7
Special provisions (ADR) : 274, 335, 375, 601
Limited quantities (ADR) : 5kg
Excepted quantities (ADR) : E1
Packing instructions (ADR) : P002, IBC08, LP02, R001
Special packing provisions (ADR) : PP12, B3
Mixed packing provisions (ADR) : MP10
Portable tank and bulk container instructions (ADR) : T1, BK1, BK2, BK3
Portable tank and bulk container special provisions (ADR) : TP33
Tank code (ADR) : SGAV, LGBV

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Vehicle for tank carriage : AT
Transport category (ADR) : 3
Special provisions for carriage - Packages (ADR) : V13
Special provisions for carriage - Bulk (ADR) : VC1, VC2
Special provisions for carriage - Loading, unloading and handling (ADR) : CV13
Hazard identification number (Kemler No.) : 90
Orange plates :



Tunnel restriction code (ADR) : -
EAC code : 2Z

Transport by sea

Transport regulations (IMDG) : Subject to the provisions
Special provisions (IMDG) : 274, 335, 966, 967, 969
Limited quantities (IMDG) : 5 kg
Excepted quantities (IMDG) : E1
Packing instructions (IMDG) : LP02, P002
Special packing provisions (IMDG) : PP12
IBC packing instructions (IMDG) : IBC08
IBC special provisions (IMDG) : B3
Tank instructions (IMDG) : BK1, BK2, BK3, T1
Tank special provisions (IMDG) : TP33
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-F
Stowage category (IMDG) : A
Stowage and handling (IMDG) : SW23

Air transport

Transport regulations (IATA) : Subject to the provisions
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, A215
ERG code (IATA) : 9L

Inland waterway transport

Classification code (ADN) : M7
Special provisions (ADN) : 274, 335, 375, 601
Limited quantities (ADN) : 5 kg
Excepted quantities (ADN) : E1
Carriage permitted (ADN) : T* B**
Equipment required (ADN) : PP, A***
Number of blue cones/lights (ADN) : 0
Additional requirements/Remarks (ADN) : * Only in the molten state. ** For carriage in bulk see also 7.1.4.1. *** Only in the case of transport in bulk.

Rail transport

Transport regulations (RID) : Subject to the provisions
Classification code (RID) : M7
Special provisions (RID) : 274, 335, 375, 601
Limited quantities (RID) : 5kg
Excepted quantities (RID) : E1
Packing instructions (RID) : P002, IBC08, LP02, R001
Special packing provisions (RID) : PP12, B3
Mixed packing provisions (RID) : MP10

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Portable tank and bulk container instructions (RID)	: T1, BK1, BK2, BK3
Portable tank and bulk container special provisions (RID)	: TP33
Tank codes for RID tanks (RID)	: SGAV, LGBV
Transport category (RID)	: 3
Special provisions for carriage – Packages (RID)	: W13
Special provisions for carriage – Bulk (RID)	: VC1, VC2
Special provisions for carriage - Loading, unloading and handling (RID)	: CW13, CW31
Colis express (express parcels) (RID)	: CE11
Hazard identification number (RID)	: 90

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)

No REACH Annex XVII restrictions

REACH Annex XIV (Authorisation List)

copper sulphate pentahydrate is not on the REACH Annex XIV List

REACH Candidate List (SVHC)

copper sulphate pentahydrate is not on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

copper sulphate pentahydrate is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

POP Regulation (Persistent Organic Pollutants)

copper sulphate pentahydrate is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Ozone Regulation (1005/2009)

copper sulphate pentahydrate is not subject to REGULATION (EU) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer.

VOC Directive (2004/42)

VOC content : Not applicable (inorganic)

Explosives Precursors Regulation (2019/1148)

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

Drug Precursors Regulation (273/2004)

Contains no substance subject to Regulation (EC) 273/2004 of the European Parliament and of the Council of 11 February 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

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

copper sulphate pentahydrate

SDS = Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

SECTION 16: Other information

Indication of changes:

Complete review of safety data sheet.

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	DMEL = Derived Minimal Effect level
DNEL	DNEL = Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	PNEC = Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	SDS = Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	zPzB = Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

copper sulphate pentahydrate

SDS = Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2020/878

Data sources	: ECHA Website: Information on Registered Substances Handbook of Chemistry and Physics CRC Press Inc Information suppliers BIG-database.
Other information	: DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

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

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.