

Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31

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Printing date 07.07.2025

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Version number 13.05 (replaces version 13.04)

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

· **1.1 Product identifier**

· **Trade name:** Copper(II) sulfate pentahydrate

· **Article number:** 1270

· **CAS Number:**

7758-99-8

· **EC number:**

231-847-6

· **Index number:**

029-023-00-4

· **Registration number** 01-2119520566-40-XXXX

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

· **Sector of Use**

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU8 Manufacture of bulk, large scale chemicals (including petroleum products)

SU9 Manufacture of fine chemicals

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

· **Product category**

PC1 Adhesives, sealants

PC9a Coatings and paints, thinners, paint removers

PC9b Fillers, putties, plasters, modelling clay

PC12 Fertilisers

PC19 Intermediate

PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents

PC24 Lubricants, greases, release products

PC30 Photo-chemicals

PC31 Polishes and wax blends

PC35 Washing and cleaning products (including solvent based products)

· **Process category**

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC7 Industrial spraying

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

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Trade name: **Copper(II) sulfate pentahydrate**

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- PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
- PROC10 Roller application or brushing
- PROC11 Non industrial spraying
- PROC13 Treatment of articles by dipping and pouring
- PROC14 Tableting, compression, extrusion, pelletisation, granulation
- PROC15 Use as laboratory reagent
- PROC17 Lubrication at high energy conditions in metal working operations
- PROC19 Manual activities involving hand contact
- PROC20 Use of functional fluids in small devices
- PROC21 Low energy manipulation and handling of substances bound in/on materials or articles
- PROC22 Manufacturing and processing of minerals and/or metals at substantially elevated temperature
- PROC23 Open processing and transfer operations at substantially elevated temperature
- PROC24 High (mechanical) energy work-up of substances bound in /on materials and/or articles
- PROC25 Other hot work operations with metals
- PROC26 Handling of solid inorganic substances at ambient temperature

- **Environmental release category**

- ERC1 Manufacture of the substance
- ERC2 Formulation into mixture
- ERC3 Formulation into solid matrix
- ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
- ERC5 Use at industrial site leading to inclusion into/onto article
- ERC6a Use of intermediate
- ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)
- ERC6d Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)
- ERC7 Use of functional fluid at industrial site
- ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
- ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
- ERC8e Widespread use of reactive processing aid (no inclusion into or onto article, outdoor)
- ERC8f Widespread use leading to inclusion into/onto article (outdoor)
- ERC9a Widespread use of functional fluid (indoor)
- ERC10a Widespread use of articles with low release (outdoor)
- ERC10b Widespread use of articles with high or intended release (outdoor)
- ERC11a Widespread use of articles with low release (indoor)
- ERC11b Widespread use of articles with high or intended release (indoor)

- **Article category**

- AC4 Stone, plaster, cement, glass and ceramic articles
- AC5 Fabrics, textiles and apparel
- AC6 Leather articles
- AC10 Rubber articles
- AC13 Plastic articles

- **Application of the substance / the mixture** Laboratory chemicals

- **1.3 Details of the supplier of the safety data sheet**

- **Manufacturer/Supplier:**

PANREAC QUIMICA S.L.U.

C/Garraf 2

Polígono Pla de la Bruguera

E-08211 Castellar del Vallès (Barcelona)

Tel. (+34) 937 489 400

Fax. (+34) 937 489 401

e-mail: product.safety@itwreagents.com

- **Further information obtainable from:** email: product.safety@panreac.com

- **1.4 Emergency telephone number:**

Single telephone number for emergency calls: 112 (EU)

Tel.: (+34) 937 489 499

EU

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Trade name: Copper(II) sulfate pentahydrate

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SECTION 2: Hazards identification· **2.1 Classification of the substance or mixture**· **Classification according to Regulation (EC) No 1272/2008**

Acute Tox. 4 H302 Harmful if swallowed.
 Eye Dam. 1 H318 Causes serious eye damage.
 Aquatic Acute 1 H400 Very toxic to aquatic life.
 Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

· **2.2 Label elements**· **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

· **Hazard pictograms**

GHS05 GHS07 GHS09

· **Signal word** Danger· **Hazard statements**

H302 Harmful if swallowed.
 H318 Causes serious eye damage.
 H410 Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P280 Wear eye protection / face protection.
 P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
 P330 Rinse mouth.
 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.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **2.3 Other hazards**· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients· **3.1 Substances**· **CAS No. Description**

7758-99-8 Copper(II) sulfate pentahydrate

· **Identification number(s)**

· **EC number:** 231-847-6

· **Index number:** 029-023-00-4

· **M-factor**

Aquatic Acute: 10

Aquatic Chronic: 1

· **Acute toxicity estimate (ATE) values** LD50 oral: 481 mg/kg

EU

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Trade name: Copper(II) sulfate pentahydrate

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SECTION 4: First aid measures

· 4.1 Description of first aid measures

· General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Involve doctor immediately.

· **After inhalation:** Call a doctor immediately.

· **After skin contact:** Call a doctor immediately.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· After swallowing:

make victim drink water (maximum of 2 drinking glasses)

Call a doctor immediately.

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

No further relevant information available.

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

Medical supervision for at least 48 hours.

SECTION 5: Firefighting measures

· 5.1 Extinguishing media

· **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.

· 5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Sulphur oxides (SO_x)

Non-combustible.

· 5.3 Advice for firefighters

· **Protective equipment:** Wear self-contained respiratory protective device.

· Additional information

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Avoid formation of dust.

Avoid substance contact.

Ensure adequate ventilation

· 6.2 Environmental precautions:

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

· 6.3 Methods and material for containment and cleaning up:

Pick up mechanically.

Avoid formation of dust.

Dispose contaminated material as waste according to section 13.

Clean up affected area.

· 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Trade name: Copper(II) sulfate pentahydrate

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SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** Any unavoidable deposit of dust must be regularly removed.
- **Information about fire - and explosion protection:** The product is not flammable.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store only in the original receptacle.
Prevent any seepage into the ground.
- **Information about storage in one common storage facility:** Store away from flammable substances.
- **Further information about storage conditions:**
Open receptacle only under localised extractor facilities.
Store under lock and key and with access restricted to technical experts or their assistants only.
Keep container sealed.
- **Recommended storage temperature:** Room Temperature
- **Storage class:** 13
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.

· **DNELs**

Oral	Long-term - systemic effects, worker	0.04 mg/kg
Dermal	Acute - systemic effects, worker	1 mg/kg
	Long-term - systemic effects, worker	13.7 mg/kg
Inhalative	Long-term - systemic effects, worker	1 mg/m ³

· **PNECs**

Aquatic compartment - freshwater	0.0078 mg/L
Aquatic compartment - marine water	0.0052 mg/L
Aquatic compartment - sediment in freshwater	87 mg/kg
Aquatic compartment - sediment in marine water	676 mg/kg
Terrestrial compartment - soil	288 mg/kg
Sewage treatment plant	0.23 mg/L

- **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

- **Appropriate engineering controls** No further data; see section 7.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Vacuum clean contaminated clothing. Do not blow or brush off contamination.
Avoid contact with the eyes.
- **Respiratory protection:**
Filter P3
Required when dusts are generated.
- **Hand protection**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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Trade name: Copper(II) sulfate pentahydrate

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Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **For the permanent contact gloves made of the following materials are suitable:**

Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.11 mm

Value for the permeation: Level ≥ 480 min

- **As protection from splashes gloves made of the following materials are suitable:**

Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.11 mm

Value for the permeation: Level ≥ 480 min

- **Eye/face protection**



Gauze goggles

- **Body protection:** Use protective suit.

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information**

- **Physical state**

Solid

- **Colour:**

Blue

- **Odour:**

Odourless

- **Odour threshold:**

Not determined.

- **Melting point/freezing point:**

Undetermined.

- **Boiling point or initial boiling point and boiling range**

Undetermined.

- **Flammability**

Product is not flammable.

- **Lower and upper explosion limit**

- **Lower:**

Not determined.

- **Upper:**

Not determined.

- **Flash point:**

Not applicable.

- **Decomposition temperature:**

88-245 °C

- **pH**

3.5-4.5

- **Viscosity:**

- **Kinematic viscosity**

Not applicable.

- **Dynamic:**

Not applicable.

- **Solubility**

- **water at 20 °C:**

317 g/l

- **Partition coefficient n-octanol/water (log value)**

Not determined.

- **Vapour pressure:**

Not applicable.

- **Density and/or relative density**

- **Density:**

Not determined.

- **Relative density**

Not determined.

- **Vapour density**

Not applicable.

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Trade name: Copper(II) sulfate pentahydrate

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· Particle characteristics	See section 3.
· 9.2 Other information	
· Appearance:	
· Form:	Solid
· Important information on protection of health and environment, and on safety.	
· Ignition temperature:	Not determined.
· Explosive properties:	Product does not present an explosion hazard.
· Molecular weight	249.68 g/mol
· Change in condition	
· Evaporation rate	Not applicable.
· Information with regard to physical hazard classes	
· Explosives	Void
· Flammable gases	Void
· Aerosols	Void
· Oxidising gases	Void
· Gases under pressure	Void
· Flammable liquids	Void
· Flammable solids	Void
· Self-reactive substances and mixtures	Void
· Pyrophoric liquids	Void
· Pyrophoric solids	Void
· Self-heating substances and mixtures	Void
· Substances and mixtures, which emit flammable gases in contact with water	Void
· Oxidising liquids	Void
· Oxidising solids	Void
· Organic peroxides	Void
· Corrosive to metals	Void
· Desensitised explosives	Void

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** Loss of constitutional water on heating.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**
 - strong acids
 - hydroxylamine
- **10.6 Hazardous decomposition products:** In the event of fire: See chapter 5

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Harmful if swallowed.
- **LD/LC50 values relevant for classification:**
 - Quantitative data on the toxicological effect of this product are not available.

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Trade name: Copper(II) sulfate pentahydrate

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Components	Type	Value	Species
Oral	LD50	481 mg/kg (ATE)	
		482 mg/kg (rat)	
Dermal	LD50	>2,000 mg/kg (rat)	

- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Causes serious eye damage.
- **After inhalation:** No irritant effect.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**

· **Repeated dose toxicity**

Oral | NOAEL | >1,500 mg/kg bw/day (rat)

- **11.2 Information on other hazards**
- **Endocrine disrupting properties** Substance is not listed.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.

Type of test	Effective concentration	Method	Assessment
EC50/48 h	0.0338-1.213 mg/l	(Aquatic Invertebrata)	
EC50/96 h	0.047 mg/l	(Algae)	
LC50/72 h	0.0165-0.987 mg/L	(Algae)	
LC50/48 h	0.007-0.2 mg/l	(Aquatic Invertebrata)	
LC50/96 h	0.15 mg/l	(fish)	
NOEC/48 h	3.563-3.8 mg/l	(micro-organisms)	

- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**
- The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**

Do not allow product to reach ground water, water course or sewage system.
 Water hazard class 3 (German Regulation) (Assessment by list): extremely hazardous for water
 Do not allow product to reach ground water, water course or sewage system, even in small quantities.
 Danger to drinking water if even extremely small quantities leak into the ground.
 Also poisonous for fish and plankton in water bodies.

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Trade name: Copper(II) sulfate pentahydrate

Very toxic for aquatic organisms

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SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Chemicals must be disposed of in compliance with the respective national regulations.
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:**
Disposal must be made according to official regulations.
Packagings that may not be cleansed are to be disposed of in the same manner as the product.

SECTION 14: Transport information

- **14.1 UN number or ID number**
- **ADR, IMDG, IATA** UN3077
- **14.2 UN proper shipping name**
- **ADR, IATA** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper sulfate)
- **IMDG** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper sulfate), MARINE POLLUTANT
- **14.3 Transport hazard class(es)**
- **ADR**
- 
- **Class** 9 (M7) Miscellaneous dangerous substances and articles.
- **Label** 9
- **IMDG, IATA**
- 
- **Class** 9 Miscellaneous dangerous substances and articles.
- **Label** 9
- **14.4 Packing group**
- **ADR, IMDG, IATA** III
- **14.5 Environmental hazards:**
- **Marine pollutant:** Symbol (fish and tree)
- **Special marking (ADR):** Symbol (fish and tree)
- **Special marking (IATA):** Symbol (fish and tree)
- **14.6 Special precautions for user** Warning: Miscellaneous dangerous substances and articles.

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Trade name: Copper(II) sulfate pentahydrate

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· Hazard identification number (Kemler code):	90
· EMS Number:	F-A,S-F
· Stowage Category	A
· Stowage Code	SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	5 kg
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· Transport category	3
· Tunnel restriction code	(-)
· IMDG	
· Limited quantities (LQ)	5 kg
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· UN "Model Regulation":	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (COPPER SULFATE), 9, III

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Directive 2012/18/EU
- Named dangerous substances - ANNEX I Substance is not listed.
- Seveso category E1 Hazardous to the Aquatic Environment
- Qualifying quantity (tonnes) for the application of lower-tier requirements 100 t
- Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t
- REGULATION (EU) 2019/1021 on persistent organic pollutants (POP) Substance is not listed.
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 75
- DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II
Substance is not listed.
- REGULATION (EU) 2019/1148
- Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))
Substance is not listed.
- Annex II - REPORTABLE EXPLOSIVES PRECURSORS Substance is not listed.
- Regulation (EC) No 273/2004 on drug precursors Substance is not listed.
- Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors
Substance is not listed.
- REGULATION (EU) 2024/590 on substances that deplete the ozone layer Substance is not listed.

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Trade name: **Copper(II) sulfate pentahydrate**

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- **National regulations:**
- **Other regulations, limitations and prohibitive regulations**
- **Substances of very high concern (SVHC) according to REACH, Article 57** Substance is not listed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Date of previous version:** 01.07.2021
- **Version number of previous version:** 13.04
- **Abbreviations and acronyms:**
 - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 - ICAO: International Civil Aviation Organisation
 - ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
 - IMDG: International Maritime Code for Dangerous Goods
 - IATA: International Air Transport Association
 - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - DNEL: Derived No-Effect Level (REACH)
 - PNEC: Predicted No-Effect Concentration (REACH)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - PBT: Persistent, Bioaccumulative and Toxic
 - SVHC: Substances of Very High Concern
 - vPvB: very Persistent and very Bioaccumulative
 - Acute Tox. 4: Acute toxicity – Category 4
 - Eye Dam. 1: Serious eye damage/eye irritation – Category 1
 - Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
 - Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
- *** Data compared to the previous version altered.**

Annex: Exposure scenario

- **Short title of the exposure scenario** Formulation and packing/repacking of substances and mixtures
- **Sector of Use**
 - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
 - SU8 Manufacture of bulk, large scale chemicals (including petroleum products)
 - SU9 Manufacture of fine chemicals
 - SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
 - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
 - SU8 Manufacture of bulk, large scale chemicals (including petroleum products)
 - SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
- **Product category**
 - PC1 Adhesives, sealants
 - PC9a Coatings and paints, thinners, paint removers
 - PC9b Fillers, putties, plasters, modelling clay
 - PC12 Fertilisers
 - PC19 Intermediate
 - PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
 - PC24 Lubricants, greases, release products
 - PC30 Photo-chemicals
 - PC31 Polishes and wax blends
 - PC35 Washing and cleaning products (including solvent based products)

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Trade name: Copper(II) sulfate pentahydrate

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· **Process category**

- PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
- PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
- PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
- PROC4 Chemical production where opportunity for exposure arises
- PROC5 Mixing or blending in batch processes
- PROC7 Industrial spraying
- PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
- PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
- PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
- PROC10 Roller application or brushing
- PROC11 Non industrial spraying
- PROC13 Treatment of articles by dipping and pouring
- PROC14 Tableting, compression, extrusion, pelletisation, granulation
- PROC15 Use as laboratory reagent
- PROC17 Lubrication at high energy conditions in metal working operations
- PROC19 Manual activities involving hand contact
- PROC20 Use of functional fluids in small devices
- PROC21 Low energy manipulation and handling of substances bound in/on materials or articles
- PROC22 Manufacturing and processing of minerals and/or metals at substantially elevated temperature
- PROC23 Open processing and transfer operations at substantially elevated temperature
- PROC24 High (mechanical) energy work-up of substances bound in /on materials and/or articles
- PROC25 Other hot work operations with metals
- PROC26 Handling of solid inorganic substances at ambient temperature

· **Article category**

- AC4 Stone, plaster, cement, glass and ceramic articles
- AC5 Fabrics, textiles and apparel
- AC6 Leather articles
- AC10 Rubber articles
- AC13 Plastic articles

· **Environmental release category**

- ERC1 Manufacture of the substance
- ERC2 Formulation into mixture
- ERC3 Formulation into solid matrix
- ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
- ERC5 Use at industrial site leading to inclusion into/onto article
- ERC6a Use of intermediate
- ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)
- ERC6d Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)
- ERC7 Use of functional fluid at industrial site
- ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
- ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
- ERC8e Widespread use of reactive processing aid (no inclusion into or onto article, outdoor)
- ERC8f Widespread use leading to inclusion into/onto article (outdoor)
- ERC9a Widespread use of functional fluid (indoor)
- ERC10a Widespread use of articles with low release (outdoor)
- ERC10b Widespread use of articles with high or intended release (outdoor)
- ERC11a Widespread use of articles with low release (indoor)
- ERC11b Widespread use of articles with high or intended release (indoor)

· **Description of the activities / processes covered in the Exposure Scenario**

See section 1 of the annex to the Safety Data Sheet.

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Trade name: Copper(II) sulfate pentahydrate

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- **Conditions of use**
- **Duration and frequency** 5 workdays/week.
- **Physical parameters**
- **Physical state** Solid
- **Concentration of the substance in the mixture** Raw material.
- **Used amount per time or activity** ≤ 1 tons per day
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure** Use only on hard ground.
- **Other operational conditions affecting worker exposure**
Avoid contact with eyes.
Avoid contact with the skin.
Indoor application.
Outdoor application.
- **Other operational conditions affecting consumer exposure** No special measures required.
- **Other operational conditions affecting consumer exposure during the use of the product**
Not applicable.
- **Risk management measures**
- **Worker protection**
- **Organisational protective measures** No special measures required.
- **Technical protective measures**
Use product only in enclosed systems.
Ensure that suitable extractors are available on processing machines
- **Personal protective measures**
Do not inhale dust / smoke / mist.
Avoid contact with the skin.
Avoid contact with the eyes.
Tightly sealed goggles
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Measures for consumer protection** Ensure adequate labelling.
- **Environmental protection measures**
- **Water** Do not allow to reach sewage system.
- **Soil** Prevent contamination of soil.
- **Disposal measures** Ensure that waste is collected and contained.
- **Disposal procedures**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.
- **Guidance for downstream users** No further relevant information available.