

Copper(II) sulfate pentahydrate

12849-1KG

Version 2.3

Revision Date 11.06.2022

Supersedes 1

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

1.1. Product identifier

Product name : Copper(II) sulfate pentahydrate
SDS-number : 000000020682
Type of product : Substance
Remarks : SDS according to Art. 31 of Regulation (EC) 1907/2006.
Chemical name : Copper sulphate-5-hydrate
Index-No. : 029-023-00-4
REACH Registration Number : no data available

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

Use of the Substance/Mixture : Laboratory chemicals
Uses advised against : none

1.3. Details of the supplier of the safety data sheet

Company	: Honeywell International Inc. 115 Tabor Road 07950-2546 Morris Plains USA	Honeywell International, Inc. 115 Tabor Road Morris Plains, NJ 07950-2546 USA
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Telephone :
For further information, please contact: : SafetyDataSheet@Honeywell.com

1.4. Emergency telephone number

Emergency telephone number : +1-703-527-3887 (ChemTrec-Transport)
+1-303-389-1414 (Medical)
Country based Poison : see chapter 15.1

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Control Center

SECTION 2: Hazards identification


2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Acute toxicity Category 4 - Oral
H302 Harmful if swallowed.
Serious eye damage Category 1
H318 Causes serious eye damage.
Short-term (acute) aquatic hazard Category 1
H400 Very toxic to aquatic life.
Long-term (chronic) aquatic hazard Category 1
H410 Very toxic to aquatic life with long lasting effects.

2.2. Label elements

REGULATION (EC) No 1272/2008

Hazard pictograms	:		
Signal word	:	Danger	
Hazard statements	:	H302 H318 H410	Harmful if swallowed. Causes serious eye damage. Very toxic to aquatic life with long lasting effects.
Precautionary statements	:	P273 P280 P301 + P330 + P331 P305 + P351 + P338 P308 + P313	Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/ attention.

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2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.1. Substance

Chemical name	CAS-No. Index-No. REACH Registration Number EC-No.	Classification 1272/2008	Concentration	Remarks
Copper sulphate-5-hydrate	7758-99-8 029-023-00-4 231-847-6	Acute Tox. 4; H302; Oral Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	100 %	M(Aquatic Acute) = 10 M(Aquatic Chronic) = 1 ATE(oral): 481 mg/kg

3.2. Mixture

Not applicable

Occupational Exposure Limit(s), if available, are listed in Section 8.
For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice:

First aider needs to protect himself. Move out of dangerous area. Immediately take off contaminated clothing and rinse body with plenty of water.

Inhalation:

In case of irritation when dust is inhaled, provide for plenty of fresh air. If symptoms persist, call a physician.

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Skin contact:

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

Eye contact:

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Protect unharmed eye. Call a physician immediately.

Ingestion:

A person suspected to have swallowed the substance who is conscious should be given water to drink. Take to a doctor immediately together with this card

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

No data available

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

Treat symptomatically.

See Section 11 for more detailed information on health effects and symptoms.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray

Foam

Carbon dioxide (CO₂)

Dry powder

Extinguishing media which shall not be used for safety reasons:

High volume water jet

5.2. Special hazards arising from the substance or mixture

Fire may cause evolution of:

Sulphur trioxide

Toxic metal oxide fumes

The product itself does not burn.

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5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit.
No unprotected exposed skin areas.
Exposure to decomposition products may be a hazard to health.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protective equipment. Unprotected persons must be kept away. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid dust formation. Avoid breathing dust. Avoid contact with skin, eyes and clothing.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods and materials for containment and cleaning up

Use mechanical handling equipment.
Sweep up and shovel into suitable containers for disposal.
Dispose of in accordance with local regulations.

6.4. Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:

Wear personal protective equipment. Use only in well-ventilated areas. Avoid breathing dust. Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion:

Normal measures for preventive fire protection.

Hygiene measures:

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Separate rooms are required for washing, showering and changing clothes. Keep working clothes separately. Wash hands before breaks and at the end of workday. When using do not eat or drink.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers:

Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container.

7.3. Specific end use(s)

no additional data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

DNEL/ PNEC-Values

No DNEL-data available.

Copper sulphate-5-hydrate				No data available
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Component	Environmental compartment / Value	Remarks
Copper sulphate-5-hydrate	Fresh water: 0,0078 mg/l	
Copper sulphate-5-hydrate	Marine water: 0,0052 mg/l	
Copper sulphate-5-hydrate	Sewage treatment plant: 0,23 mg/l	
Copper sulphate-5-hydrate	Fresh water sediment: 87 mg/kg dw	
Copper sulphate-5-hydrate	Marine sediment: 676 mg/kg dw	
Copper sulphate-5-hydrate	Soil: 65 mg/kg dw	

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8.2. Exposure controls

Occupational exposure controls

The Personal Protective Equipment must be in accordance with EN standards:respirator EN 136, 140, 149; safety glasses EN 166; protective suit: EN 340, 463, 468, 943-1, 943-2; gloves EN 374, 511; safety shoes EN-ISO 20345.

Do not breathe dust.

Avoid contact with skin and eyes.

Personal protective equipment

Respiratory protection:

In the case of dust or aerosol formation use respirator with an approved filter.

Hand protection:

Glove material: Natural Latex

Break through time: > 480 min

Glove thickness: 0,6 mm

Lapren®706

Gloves must be inspected prior to use.

Replace when worn.

Remarks:Supplementary note: The specifications are based on information and tests from similar substances by analogy.

Due to varying conditions (e.g.temperature or other strains) it must be considered that the usage of a chemical protective glove in practice may be much shorter than the permeation time determined in accordance with EN 374.

Since actual conditions of practical use often deviate from standardised conditions according EN 374 the glove manufacturer recommends to use the chemical protective glove in practice not longer than 50% of the recommended permeation time.

Manufacturer's directions for use should be observed because of great diversity of types .

Suitable gloves tested according EN 374 are supplied e.g. from KCL GmbH, D-36124 Eichenzell, Vertrieb@kcl.de

Eye protection:

Safety goggles

Skin and body protection:

Impervious clothing

Wear suitable protective equipment.

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Environmental exposure controls

Handle in accordance with local environmental regulations and good industrial practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: solid
Colour	: blue green
Odour	: odourless
molecular weight	: 249,69 g/mol
Melting point/range	: 110 °C
Boiling point/boiling range	: Decomposes on heating.
Flammability	: The product is not flammable.
Upper explosion limit	: Not applicable
Lower explosion limit	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: 110 °C Loss of water of crystallization on heating.
Decomposition temperature	: 340 - 650 °C Decomposition temperature
pH	: 3,5 - 4,5 at 20 °C
Auto-ignition temperature	: not auto-flammable
Viscosity, kinematic	: No data available

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Water solubility	:	209 g/l at 20 °C
Partition coefficient: n- octanol/water	:	No data available
Vapour pressure	:	negligible
Density	:	2,28 g/cm ³ at 20 °C
Bulk density	:	ca. 1.000 kg/m ³
Relative vapour density	:	No data available

9.2 Other Information

Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Evaporation rate	:	No data available
Viscosity, dynamic	:	No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

110 °C
Loss of water of crystallization on heating.
340 - 650 °C
Decomposition temperature

10.3. Possibility of hazardous reactions

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Hazardous polymerisation does not occur.

10.4. Conditions to avoid

To avoid thermal decomposition, do not overheat.

10.5. Incompatible materials

Reactions with various metals.
Acetylene

10.6. Hazardous decomposition products

In case of fire hazardous decomposition products may be produced such as:
Copper oxides
Sulphur oxides

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:

LD50

Species: Rat

Value: 481 mg/kg

Method: OECD Test Guideline 401

Acute dermal toxicity:

LD50

Species: Rat

Value: > 2.000 mg/kg

Acute inhalation toxicity:

No data available

Skin irritation:

Species: Rabbit

Result: No skin irritation

Method: OECD Test Guideline 404

Eye irritation:

Classification based on Annex VI of regulation 1272/2008/EC.

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Respiratory or skin sensitisation:

No data available

Carcinogenicity:

Note: No data available

Germ cell mutagenicity:

Test Method: Ames test

Metabolic activation: with and without metabolic activation

Result: negative

Method: OECD Test Guideline 471

Test Method: Micronucleus test

Species: Mouse

Result: negative

Test Method: Unscheduled DNA synthesis

Method: OECD Test Guideline 486

Result: negative

Reproductive toxicity:

Remarks: Not classified due to data which are conclusive although insufficient for classification.

Aspiration hazard:

No data available

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information:

No data available

SECTION 12: Ecological information

12.1. Toxicity

Toxicity to fish:

LC50

Species: *Oncorhynchus mykiss* (rainbow trout)

Value: 0,03 mg/l

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Exposure time: 96 h

Toxicity to aquatic plants:
No data available

Toxicity to aquatic invertebrates:
EC50
Species: Daphnia magna (Water flea)
Value: 0,2 mg/l
Exposure time: 48 h
Test substance: anhydrous substance

12.2. Persistence and degradability

No data available

12.3. Bioaccumulative potential

No data available

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Endocrine disrupting properties

No data available

12.7. Other adverse effects

Do not flush into surface water or sanitary sewer system.
The methods for determining biodegradability are not applicable to inorganic substances.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product:
Dispose according to legal requirements.

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Packaging:

Legal requirements are to be considered in regard of reuse or disposal of used packaging materials

Further information:

Provisions relating to waste:

EC Directive 2006/12/EC; 2008/98/EEC

Regulation No. 1013/2006

For personal protection see section 8.

SECTION 14: Transport information

14.1 UN number

ADR/RID:3077

IMDG:3077

IATA:3077

14.2 UN proper shipping name

ADR/RID:ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(COPPER SULPHATE)

IMDG:ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(COPPER SULPHATE)

IATA:Environmentally hazardous substance, solid, n.o.s.(Copper sulphate)

14.3 Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA: 9

14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

14.5 Environmental hazards

ADR/RID: yes

Marine pollutant: yes

14.6 Special precautions for user

Not regulated for transport when single and combination packagings are <5L for liquids or <5kg for solids per ADR 2.2.9.2.10, IMDG 2.10.3 and IATA SP A197).

14.7 Maritime transport in bulk according to IMO instruments

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No data available

SECTION 15: Regulatory information

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

Basis	Value	Remarks
Directive 2012/18/EC SEVESO III Listed in Regulation : E1: Hazardous to the aquatic environment	Quantity: 100.000 kg Quantity: 200.000 kg	
Substances of very high concern (SVHC)		This product does not contain substances of very high concern according to Regulation (EC) No Article 57 above the respective regulatory 1907/2006 (REACH), concentration limit of $\geq 0.1\%$ (w/w).

Poison Control Center

Country	Phone Number
Austria	+4314064343
Belgium	070 245245
Bulgaria	(+35929154233
Croatia	(+3851)23-48-342
Cyprus	+357 2240 5611
Czech Republic	+420224919293; +420224915402
Denmark	82121212
Estonia	16662; (+372)6269390
Finland	9471977
France	+33(0)145425959
Greece	+30 210 779 3777
Hungary	(+36-80)201-199
Iceland	5432222

Country	Phone Number
Liechtenstein	+41 442515151
Lithuania	+370532362052
Luxembourg	070245245; (+352)80002-5500
Malta	+356 2395 2000
Netherlands	030-2748888
Norway	22591300
Poland	+48 42 25 38 400
Portugal	800250250
Romania	+40 21 318 3606
Slovakia (NTIC)	+421 2 54 774 166
Slovenia	+386 1 400 6051
Spain	+34915620420
Sweden	112 (begär

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			Giftinformation);+46104566786
Ireland	+353(1)8092166	Switzerland	145
Italy	0382 24444	United Kingdom	(+44) 844 892 0111
Germany	Berlin : 030/19240		
	Bonn : 0228/19240		
	Erfurt : 0361/730730		
	Freiburg : 0761/19240		
	Göttingen : 0551/19240		
	Homburg : 06841/19240		
	Mainz : 06131/19240		
Munich : 089/19240			
Latvia	+37167042473		

Other inventory information

US. Toxic Substances Control Act
On TSCA Inventory

Australia. Industrial Chemicals Act (AIC), as amended
On the inventory, or in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)
All components of this product are on the Canadian DSL

Japan. Kashin-Hou Law List
On the inventory, or in compliance with the inventory

Korea. Existing Chemicals Inventory (KECI)
On the inventory, or in compliance with the inventory

Philippines. Inventory of Chemicals and Chemical Substances (PICCS)
On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC)
On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand

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On the inventory, or in compliance with the inventory

Taiwan Chemical Substance Inventory (TCSI)

On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

Text of H-statements referred to under heading 3

Copper sulphate-5-hydrate : 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.

Further information

All directives and regulations refer to amended versions.
Vertical lines in the left hand margin indicate a relevant amendment from the previous version.

Abbreviations:

EC European Community
CAS Chemical Abstracts Service
DNEL Derived no effect level
PNEC Predicted no effect level
vPvB Very persistent and very biaccumulative substance
PBT Persistent, bioaccumulative und toxic substance

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user.

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This information should not constitute a guarantee for any specific product properties.
