

Copper(II) sulfate pentahydrate**12849-1KG**

Version 1.1

Revision Date 11/10/2020

Print Date 05/11/2023

SECTION 1. IDENTIFICATION

Product name : Copper(II) sulfate pentahydrate

Number : 000000020682

Product Use Description : Laboratory chemicals

Manufacturer or supplier's details : Honeywell International Inc.
1953 South Harvey Street
Muskegon, MI 49442

For more information call : 1-800-368-0050
+1-231-726-3171(Monday-Friday, 9:00am-5:00pm)

In case of emergency call : **Medical: 1-800-498-5701 or +1-303-389-1414**
: **Transportation (CHEMTREC): 1-800-424-9300 or**
: **+1-703-527-3887**
:
: (24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION**Emergency Overview**

Form : solid

Color : blue green

Odor : odourless

Classification of the substance or mixture

Classification of the substance or mixture : Acute toxicity, Category 4, Oral
Skin irritation, Category 2
Eye irritation, Category 2A

GHS Label elements, including precautionary statements

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Symbol(s)

:



Signal word

:

Warning

Hazard statements

:

Harmful if swallowed.
Causes skin irritation.
Causes serious eye irritation.

Precautionary statements

:

Prevention:
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.

Response:
IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Rinse mouth.
If skin irritation occurs: Get medical advice/ attention.
If eye irritation persists: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.

Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula

:

CuO4S · 5H2O

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Chemical nature : Substance

Chemical name	CAS-No.	Concentration
Copper sulphate-5-hydrate	7758-99-8	100.00 %

SECTION 4. 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.
- Skin contact : After contact with skin, wash immediately with plenty of water.
- Eye contact : Protect unharmed eye. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- 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

Notes to physician

- Most important symptoms/effects, acute and delayed : No information available.
- Indication of immediate medical attention and special treatment needed, if necessary : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Water spray
Foam
Carbon dioxide (CO₂)
Dry powder

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- | | | |
|---|---|---|
| Specific hazards during firefighting | : | In case of fire hazardous decomposition products may be produced such as:
Copper oxides
Sulphur oxides |
| Special protective equipment 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. |
| Further information | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |

SECTION 6. ACCIDENTAL RELEASE MEASURES

- | | | |
|---|---|--|
| 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. |
| 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. |
| 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. |

SECTION 7. HANDLING AND STORAGE**Handling**

- | | | |
|-------------------------------|---|--|
| Precautions for safe handling | : | Wear personal protective equipment.
Use only in well-ventilated areas.
Avoid breathing dust. |
|-------------------------------|---|--|

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Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Storage

Conditions for safe storage, including any incompatibilities : Keep containers tightly closed in a dry, cool and well-ventilated place.
Store in original container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.
Legal requirements are to be considered in regard of the selection, use and care of personal protective equipment.
Avoid contact with skin, eyes and clothing.

Engineering measures : Use with local exhaust ventilation.

Eye protection : Safety goggles

Hand protection : Impervious gloves
Gloves must be inspected prior to use.
Replace when worn.

Skin and body protection : Impervious clothing
Wear suitable protective equipment.

Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.

Hygiene measures : When using, do not eat, drink or smoke.
Wash hands before breaks and at the end of workday.
Keep working clothes separately.
Remove and wash contaminated clothing before re-use.

Exposure Guidelines

Components	CAS-No.	Value	Control parameters	Update	Basis
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Copper sulphate-5-hydrate	7758-99-8	TWA : Time weighted average	0.2 mg/m3	03 2014	ACGIH:US. ACGIH Threshold Limit Values, as amended
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Further information	:	Form of exposure : Fume. Expressed as : as Cu			
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Copper sulphate-5-hydrate	7758-99-8	TWA : Time weighted average	1 mg/m3	03 2014	ACGIH:US. ACGIH Threshold Limit Values, as amended
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Further information	:	Form of exposure : dust/mist Expressed as : as Cu			
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Copper sulphate-5-hydrate	7758-99-8	REL : Recommended exposure limit (REL):	1 mg/m3	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
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Further information	:	Form of exposure : dust/mist Expressed as : as Cu			
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Copper sulphate-5-hydrate	7758-99-8	REL : Recommended exposure limit (REL):	0.1 mg/m3	2016	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
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Further information	:	Form of exposure : Fume. Expressed as : as Cu			
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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : solid

Color : blue green

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Odor	: odourless
Odor threshold	: Note: No data available
pH	: 3.5 - 4.5 at , 20 °C
Melting point/range	: 110 °C
Boiling point/boiling range	: Note: Decomposes on heating.
Flash point	: Note: Not applicable
Evaporation rate	: Note: No data available
Flammability	: The product is not flammable.
Lower explosion limit	: Note: Not applicable
Upper explosion limit	: Note: Not applicable
Vapor pressure	: Note: negligible
Vapor density	: Note: No data available
Density	: 2.28 g/cm ³ at 20 °C
Water solubility	: 209 g/l at 20 °C
Partition coefficient: n-octanol/water	: Note: No data available

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Ignition temperature	: Note: Not applicable
Auto-ignition temperature	: Note: not auto-flammable
Decomposition temperature	: 110 °C Note: Loss of water of crystallization on heating. 340 - 650 °C Note: Decomposition temperature
Viscosity, dynamic	: Note: No data available
Viscosity, kinematic	: Note: No data available
Oxidizing properties	: The substance or mixture is not classified as oxidizing.
Molecular weight	: 249.69 g/mol
Bulk density	: ca. 1,000 kg/m ³

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Not classified as a reactivity hazard.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Hazardous polymerisation does not occur.
Conditions to avoid	: To avoid thermal decomposition, do not overheat.
Incompatible materials	: Reactions with various metals. Acetylene
Hazardous decomposition products	: In case of fire hazardous decomposition products may be produced such as: Copper oxides Sulphur oxides

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SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	: LD50: 482 mg/kg Species: Rat Method: OECD Test Guideline 401
Acute inhalation toxicity	: Note: No data available
Acute dermal toxicity	: LD50: > 2,000 mg/kg Species: Rat
Skin irritation	: Note: Irritating to skin.
Eye irritation	: Note: Severe eye irritation
Sensitisation	: Note: No data available
Genotoxicity in vitro	: Test Method: Ames test Metabolic activation: with and without metabolic activation Result: negative Method: OECD Test Guideline 471
Genotoxicity in vivo	: Test Method: Micronucleus test Species: Mouse Result: negative
Genotoxicity in vivo	: Test Method: Unscheduled DNA synthesis Method: OECD Test Guideline 486 Result: negative

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SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity effects**

Toxicity to fish : LC50: 0.03 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates : EC50: 0.2 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Test substance: anhydrous substance

Toxicity to algae : Note: No data available

Elimination information (persistence and degradability)

Biodegradability : Result: Not readily biodegradable.

Further information on ecology**SECTION 13. DISPOSAL CONSIDERATIONS**

Disposal methods : Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

DOT	UN/ID No.	: UN 3077
	Proper shipping name	: Environmentally hazardous substances, solid, n.o.s. (Copper sulphate)
	Class	9
	Packing group	III
	Hazard Labels	9

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IATA UN/ID No. : UN 3077
Description of the goods : Environmentally hazardous substances, solid,
n.o.s.
(Copper sulphate)
Class : 9
Packaging group : III
Hazard Labels : 9
Packing instruction (cargo aircraft) : 956
Packing instruction (passenger aircraft) : 956
Packing instruction (passenger aircraft) : Y956

IMDG UN/ID No. : UN 3077
Description of the goods : Environmentally hazardous substances, solid,
n.o.s.
(COPPER SULPHATE)
Class : 9
Packaging group : III
Hazard Labels : 9
EmS Number : F-A, S-F
Marine pollutant : yes

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).

SECTION 15. REGULATORY INFORMATION**Inventories**

US. Toxic Substances : On TSCA Inventory
Control Act

Australia. Industrial : On the inventory, or in compliance with the inventory
Chemical (Notification and
Assessment) Act

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

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Substances List (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. The Toxic Substances and Hazardous and Nuclear Waste Control Act : 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 : On the inventory, or in compliance with the inventory

National regulatory information**SARA 302 Components** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.**SARA 313 Components** : The following components are subject to reporting levels established by SARA Title III, Section 313:
: Copper sulphate-5-hydrate 7758-99-8**SARA 311/312 Hazards** : Acute Health Hazard**CERCLA Reportable Quantity** : 10 lbs

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California Prop. 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Massachusetts RTK : Copper sulphate-5-hydrate 7758-99-8

New Jersey RTK : Copper sulphate-5-hydrate 7758-99-8

Pennsylvania RTK : Copper sulphate-5-hydrate 7758-99-8

SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health hazard	: 2	2
Flammability	: 0	0
Physical Hazard	: 0	
Instability	:	0

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further information

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

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

Previous Issue Date: 09/24/2016

Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group