

Copper(II) Sulphate Pentahydrate (Cupric Sulphate Pentahydrate)

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

Issue date: 04-Jul-2011; Revision date: 12-Aug-2024;
Supersedes version of: 27-Feb-2024; Version: 6.2

Revision date: 12-Aug-2024 EN (English) 1/12



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

1.1. Product identifier

Product form : Substance

Substance name : Copper(II) Sulphate Pentahydrate (Cupric Sulphate Pentahydrate)

Chemical name : copper sulphate pentahydrate

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 : A229 - P229 - P514 - P514-FEMAS - T514 - A514 - P1453 - P229CU

Chemical structure :

Synonyms : Copper Sulphate 5 Hydrate / Copper(II) sulphate pentahydrate

Other means of identification : CuSO4.5H2O

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

Use of the substance/mixture : food ingredient

Laboratory chemicals

Industrial use resulting in manufacture of another substance (use of intermediates)

Incorporation in soil

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

02079282633

Intaglio Printmaker Ltd

9 Playhouse Court

62 Southwark Bridge Road

London

SE10AT

1.4. Emergency telephone number

02079282633

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 (M=10)

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.

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS05



GHS07



GHS09

Signal word (CLP) : Danger

Hazard statements (CLP) : H302 - Harmful if swallowed.

H318 - Causes serious eye damage.

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

Precautionary statements (CLP) : P264 - Wash hands, forearms and face thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P273 - Avoid release to the environment.

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

P301+P312 - IF SWALLOWED: Call a POISON CENTER, doctor 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 POISON CENTER, a doctor.

P330 - Rinse mouth.

P391 - Collect spillage.

P501 - Dispose of contents and container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name Product identifier Classification according to Regulation (EC) No. 1272/2008 [CLP]

Copper(II) Sulphate Pentahydrate (Cupric Sulphate Pentahydrate)

CAS-No.: 7758-99-8

EC-No.: 231-847-6

EC Index-No.: 029-023-00-4

REACH-no: 01-2119520566-40

Acute Tox. 4 (Oral), H302

Eye Dam. 1, H318

Aquatic Acute 1, H400 (M=10)

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 eye contact : Serious damage to eyes.

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

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

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

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes.

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".

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.

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.

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(II) Sulphate Pentahydrate (Cupric Sulphate Pentahydrate) (7758-99-8)

EU - Indicative Occupational Exposure Limit (IOEL)

Local name Copper(II) sulfate pentahydrate

IOEL TWA 0.01 mg/m³ (respirable fraction)

Remark (Year of adoption 2014)

Regulatory reference SCOEL Recommendations

Finland - Occupational Exposure Limits

Local name Kupari-(II)-sulfaatti, pentahydraatti

HTP (OEL TWA) 0.02 mg/m³ Cu, alveolijae

Regulatory reference HTP-ARVOT 2020 (Sosiaali- ja terveysministeriö)

United Kingdom - Occupational Exposure Limits

WEL TWA (OEL TWA) 1 mg/m³

WEL STEL (OEL STEL) 2 mg/m³

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

No additional information available

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

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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid

Colour : Blue.

Appearance : Crystals.

Molecular mass : 249.68 g/mol

Odour : odourless.

Odour threshold : Not available

Melting point : Decomposes 560

Freezing point : Not applicable

Boiling point : 560 °C

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 : Not available

pH : 4

pH solution : Not available

Viscosity, kinematic : Not applicable

Solubility : Material highly soluble in water. Soluble in methanol.

Partition coefficient n-octanol/water (Log Kow) : Not available

Vapour pressure : Not available

Vapour pressure at 50°C : Not available

Density : Not available

Relative density : 2.284g/cm³

Relative vapour density at 20°C : Not applicable.

Particle size : Not 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

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

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(II) Sulphate Pentahydrate (Cupric Sulphate Pentahydrate) (7758-99-8)

LD50 oral rat 960 mg/kg

LD50 dermal rat > 2000 mg/kg

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

Aspiration hazard : Not classified

Copper(II) Sulphate Pentahydrate (Cupric Sulphate Pentahydrate) (7758-99-8)

Viscosity, kinematic Not applicable

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Very toxic to aquatic life with long lasting effects.

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.

Not rapidly degradable

Copper(II) Sulphate Pentahydrate (Cupric Sulphate Pentahydrate) (7758-99-8)

LC50 - Fish [1] 11 mg/l

EC50 - Other aquatic organisms [1] 2 mg/l

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector’s sorting instructions.

HP Code : HP6 - “Acute Toxicity:” waste which can cause acute toxic effects following oral or dermal administration, or inhalation exposure.

HP4 - “Irritant – skin irritation and eye damage:” waste which on application can cause skin irritation or damage to the eye.

HP14 - “Ecotoxic:” waste which presents or may present immediate or delayed risks for one or more sectors of the environment

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 3077	UN 3077	UN 3077	UN 3077	UN 3077
14.2. UN proper shipping name				
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper Sulphate Pentahydrate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper Sulphate Pentahydrate)	Environmentally hazardous substance, solid, n.o.s. (Copper Sulphate Pentahydrate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper Sulphate Pentahydrate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper Sulphate Pentahydrate)
Transport document description				
UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper Sulphate Pentahydrate), 9, III, (-)	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper Sulphate Pentahydrate), 9, III, MARINE POLLUTANT	UN 3077 Environmentally hazardous substance, solid, n.o.s. (Copper Sulphate Pentahydrate), 9, III	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper Sulphate Pentahydrate), 9, III	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper Sulphate Pentahydrate), 9, III
14.3. Transport hazard class(es)				
9	9	9	9	9
				
14.4. Packing group				
III	III	III	III	III
14.5. Environmental hazards				
Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes

14.6. Special precautions for user

Overland transport

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

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

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

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

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

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)

Not listed on REACH Annex XVII

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

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

POP Regulation (Persistent Organic Pollutants)

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

Ozone Regulation (1005/2009)

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

Explosives Precursors Regulation (2019/1148)

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

Drug Precursors Regulation (273/2004)

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

15.1.2. National regulations

Germany

Employment restrictions : Observe restrictions according Act on the Protection of Working Mothers (MuSchG).

Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG).

Water hazard class (WGK) : WGK 3, Highly hazardous to water (Classification according to AwSV; ID No. 141).

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

Netherlands

ABM category : A(1) - highly toxic for aquatic organisms, may have longterm hazardous effects in aquatic environment

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

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

SZW-lijst van reprotoxische stoffen – Borstvoeding : The substance is not listed

SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : The substance is not listed

SZW-lijst van reprotoxische stoffen – Ontwikkeling : The substance is not listed

Denmark

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

Switzerland

Storage class (LK) : LK 11/13 - Solids

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Indication of changes

Section Changed item Change Comments

Revision date Modified

Supersedes version of Modified

1.1 Product code Modified

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 Derived Minimal Effect level

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 Predicted No-Effect Concentration

RID Regulations concerning the International Carriage of Dangerous Goods by Rail

Abbreviations and acronyms:

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 Very Persistent and Very Bioaccumulative

ED Endocrine disruptor

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.

The classification complies with : ATP 12

CC Safety Data Sheet (SDS)

The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship.

The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.