



MATERIAL SAFETY DATA SHEET

COPPER(II) SULFATE PENTAHYDRATE with ANTI-CAKING AGENT

This document is in accordance with the European Regulation (EC) n. 1907/2006

Document version date: January 2010

Revision No. 1

1. Identification of the substance/preparation and of the company/undertaking

- 1.1 *Name of the substance:* **COPPER(II) SULPHATE PENTAHYDRATE WHIT ANTI-CAKING AGENT**
- 1.2 *Utilization of the Substance:* Main uses: Agriculture, Animal feed additive, galvanic, electronic and electroplating
- 1.2 *Name of the Company:* MANICA S.P.A.
Via all' Adige,4
I-38068 ROVERETO (Trento) - Italy
tel. +39/0464/433705 fax +39/0464/437224
E-mail: info@manica.com
e-mail of the person in charge of SDS: r.rosa@manica.com
- 1.3 *Emergency telephone number:* tel. +39/0464/433705

2. Description of hazards

Classification: Xn, N – Harmful, Dangerous for the environment R22, 36/38, 50/53.

Physical-chemical hazard: None

Negative effects on health:

Possible symptoms: Could cause sore throat, abdominal pains, diarrhoea, vomiting. Strongly irritating to eyes and irritating to skin and mucosa.

Negative effects on the environment:

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. Composition/information on ingredients

Ingredients	% (p/p)	CAS number	EINECS number	Hazard classification	Risk phrases
Copper (II) sulphate pentahydrate	98 min	7758-99-8	231-847-6	Xn, N	R22,36/38,50/53
Anti caking agent	< 1	-	-	Not classified	None

4. First aid measure

4.1 Skin contact

Take off the contaminated clothes and wash with soap and plenty of water all the contaminated parts of the body. In case of irritation seek for medical advice.

4.2 Eyes contact

Wash immediately with plenty of water for at least 15 minutes. Seek for medical advice

4.3 Ingestion

If swallowed seek immediately for medical advice. Show this safety data sheet or the label

4.4 Inhalation

If possible reduce exposure using fresh air. Remove from exposure take the person in a well aerated place and calm. Seek for medical advice.

5. Fire-fighting measures

5.1 Suitable extinguishing media

Product is not flammable. Use extinguishing media appropriate for surrounding fire (micronized water, CO₂, foam). Collect the contaminated water to avoid reaching of sewers or water courses.



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5.2 Extinguishing media which must not be used for safety reason
None but avoid using plenty of water.

5.3 Special exposure hazard
Avoid breathing fumes that could be toxic (presence of sulphur oxides SO_x).

5.4 Special protective equipment for fire-fighters
Fire-fighters should wear proper protective equipment and self-contained (positive pressure if available) breathing apparatus with full face piece.

6. Accidental release measures

6.1 Personal precaution
Protect adequately all the body parts. The air passages must be protected (suitable filter mask) if the material is in microcrystals form (higher probability that the product forms dust). Take away all the unauthorised people, children and animals.

6.2 Environmental precautions
Use sand or soil to contain the loss of product.
Avoid the possibility that significant quantity of product has entered water courses or sewer; if this should happen advise immediately the local competent authority.

6.3 Methods for cleaning up
Cover the product with sand or soil and clean up accurately all the product. Put it into another clean and dry container, close and remove it from the area. Do not clean contaminated area with water. If necessary arrange disposal in an authorised area. Contact local Waste Disposal Authority.

7. Handling and storage

7.1 Handling
Avoid dust formation. Do not breathe dust. Handle in a well ventilated area or wear adequate respiratory protection (anti-dust mask). Avoid contact with skin and eyes wearing working clothes, gloves and protective glasses. Do not eat, smoke or drink during use. After use keep the packaging well closed. See also point 8.

7.2 Storage
Keep in sealed containers away from humidity and sunlight. Store the product in well ventilated warehouse away from flammable product. Keep out of the reach of children, animal and unauthorised people. Keep away from food, drink and feeding stuff.

7.3 Main uses
The product could be used in a large number of applications. The main uses are: agriculture, animal feed, galvanic, electronic, biocide product, etc.

8. Exposure control / personal protection

8.1 Exposition limits
Not specified as copper sulphate pentahydrate.

TLW/TWA: 1 mg/m³ (as Cu)

8.2 Exposure control

8.2.1 Personal exposure control

8.2.1.1 Respiratory protection

Use a suitable dust mask if the product forms dust. Do not breathe dust.

8.2.1.2 Hand protection

Protect the hands using suitable gloves resistant to chemical product. Wash the hands after use.

8.2.1.3 Eyes protection

Avoid contact with eyes. Use protective glasses.



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8.2.1.4 Skin protection

Use appropriate clothes and avoid prolonged contact with skin. Wash deeply and daily the working clothes. After use wash the body with water and soap.

8.2.1 Environment exposure control

Avoid the uncontrolled release of the product in the environment.

9. Physical and chemical properties

9.1 General information.

Aspect: blue or light blue crystalline solid (crystals or microcrystals)
Odour: Odourless

9.2 Important information on human health, safety an environment

pH(5% water solutions	3 – 4
Boiling point	not applicable
Melting point	Product decomposes over 560°C (Merck Index, 1996)
Flammable temperature	not applicable
Flammability	not applicable
Auto- flammability:	> 400°C
Thermal decomposition:	> 560°C
Explosivity	non explosive
Density a 20°C:	2.28 (H ₂ O=1)
Apparent density	1.1 – 1.3 Kg/l
Solubility	In water: soluble (266 g/l a 20°C) In fat: insoluble
Vapour tension	negligible
Partition coefficient(n-octanole/water):	not applicable

9.3 Further information

Copper content: 25% w/w

10. Stability and reactivity

General conditions

Stable to the light, humidity and heat. Stable in the usual warehouse conditions and in the original bags for at least 2 years. Loss water of crystallization from 30°C and 250°C. Decomposes over 560°C.

10.1 Condition to avoid

The product could be corrosive for iron material in presence of humidity.

10.2 Material to avoid

Strong reducing agents.

10.3 Hazardous decomposition products

The product decomposes over 560°C producing toxic g ases of sulphur oxides (SO_x).



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11. Toxicological information

Acute toxicity

LD50 (oral-rat):	450 - 1000 mg/Kg
LD50 (Dermal-rabbit):	> 2000 mg/Kg
LD50 (Inhalation-rat):	Not necessary data. Product is not volatile

Irritation

Skin	Non irritant (rabbit)
Eyes	Severe irritant (rabbit) – may cause serious damage to eyes
Skin sensitization:	non sensitizing (guinea pigs)

Chronic toxicity

Non applicable. Copper is naturally present in food, feed and water.	
Carcinogenicity	no evidence of carcinogenicity
Mutagenicity:	not relevant effects
Teratogenicity	not relevant effects

12. Ecotoxicity

Use the product according to the good working practice avoiding to disperse material

12.1 Ecotoxicity

Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment

Species (the most sensitive for each group)	Exposition	Results
Fish: <i>Pimephales promelas</i> (fathead minnow)	96 hours	LC50 = 675 µg Cu/litre
Invertebrates: <i>Daphnia magna</i>	48 hours	EC50 = 18.9 µg Cu/litre
Algae: <i>Pseudokirchneriella subcapitata</i>	72 hours	EC50 = 18.7 µg Cu /litre

12.2 Mobility

In soil copper is mainly bounded to organic material naturally present in the soil. Organic material content and pH determine the bioavailability of copper. Copper is strongly bounded to various components of the soil so that the free copper is at a very low level in the soil. The mobility of copper towards the deeper layer is negligible.

13. Disposal considerations

Product





Contact your supplier, local competent authorities or a serious disposal company to collect and dispose of the product or contaminated containers. The product has to be disposed of as hazardous waste.

Packaging

Dispose according to current legislation recommendations.

14. Transport information

Road / Railway transport:		Maritime transport (IMDG Code)	
UN number:	3077	UN number:	3077
Class:	9, M7	Class:	9, M7
Packaging group:	III	Packaging group:	III
Tunnel restriction code	E		
		Marine pollutant :	YES, Severe marine pollutant
		EmS Code:	F-A, S-F

Road / Railway transport:		Maritime transport (IMDG Code)	
Appropriate description for delivery: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper sulphate pentahydrate)		Appropriate description for delivery: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (copper sulphate pentahydrate)	
Label: 9 	Mark (Dangerous for the environment) 	Label: 9 	Mark (Dangerous for the environment) 

ICAO/IATA: Information not available.
Other information: None

15. Regulatory information

15.1 Labelling

According to the Directive 67/548/CEE

HAZARDOUS
SYMBOLS



HARMFUL



DANGEROUS FOR THE ENVIRONMENT

RISK PHASES

R22 Harmful if swallowed
R36/38 Irritating to eyes and skin
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

SAFETY PHASES

S 2 Keep out of the reach of children
S 22 do not breathe dust
S 60 This material and its container must be disposed of as hazardous waste
S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets

15.2 Specific provision:

None

16. Any other relevant information

This document is in accordance with the annex II of the European Regulation (EC) n. 1907/2006 dated 18/12/2006

The highlighted parts have been changed compared to the previous version

This new version cancels and substitutes all the previous ones.

Complete text of the risk phrases mentioned under point 2 and 3.

R22 Harmful if swallowed

R36/38: Irritating to eyes and skin.

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

All the above information is in accordance with our actual best knowledge on this matter. Do not use this information improperly.