

Trade name: Copper sulfate pentahydrate

Current version : 5.0.0, issued: 16.12.2014

Replaced version: 5.0.0, issued: 14.07.2014

Region: GB

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

1.1 Product identifier

Trade name

Copper sulfate pentahydrate

Substance name copper sulphate, 5-hydrate
REACH registration no. 01-2119520566-40-0014

Identification numbers

CAS no. 7758-99-8
EC no. 231-847-6
Index no. 029-004-00-0

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

Relevant identified uses of the substance or mixture

Feed additive, technical use; water treatment(algaecide)
fertilizer

Reference to relevant exposure scenarios

For an overview of the exact titles of the relevant exposure scenarios please refer to section 16 of this SDS.

1.3 Details of the supplier of the safety data sheet

Address

Timna Copper Mine Ltd
DOAR NA
EILLOT ISRAEL 8880200

Telephone no. 972-8-6374171
Fax no. 972-8-6374174
Email timna@timna.co.il

Information provided by / telephone

972-8-6374171

Advice on Safety Data Sheet

timna@timna.co.il

Only representative according to art. 8 Regulation (EC) 1907/2006

Address

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21107 Hamburg
GERMANY

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1.4 Emergency telephone number

For medical advice (in German and English):
+49 (0)551 192 40 (Giftinformationszentrum Nord)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 (CLP)

Acute Tox. 4; H302
Aquatic Acute 1; H400
Aquatic Chronic 1; H410
Eye Irrit. 2; H319
Skin Irrit. 2; H315

Classification in accordance with Directive 67/548/EEC or 1999/45/EC

Xn; R22
Xi; R36/38
N; R50/53

Trade name: Copper sulfate pentahydrate

Current version : 5.0.0, issued: 16.12.2014

Replaced version: 5.0.0, issued: 14.07.2014

Region: GB

Note	Specific concentration limits	M-factor (acute)	M-factor (chronic)
-	-	M = 10	-

2.2 Label elements

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

Product identifier

7758-99-8 (copper sulphate, 5-hydrate)

Hazard pictograms



GHS07



GHS09

Signal word

Warning

Hazard statements

H302 Harmful if swallowed.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P264 Wash thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
 P302+P352 IF ON SKIN: Wash with plenty of soap and water.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P330 Rinse mouth.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P337+P313 If eye irritation persists: Get medical advice/attention.
 P391 Collect spillage.
 P501 Dispose of contents/container to hazardous or special waste collection point.

2.3 Other hazards

PBT assessment

The product is not considered to be a PBT.

vPvB assessment

The product is not considered to be a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical characterization

Substance name copper sulphate, 5-hydrate
 Formula $\text{Cu SO}_4 \times 5 \text{ H}_2\text{O}$
 Molecular weight 249.68

Identification numbers

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3.2 Mixtures

Not applicable. The product is not a mixture.

Trade name: Copper sulfate pentahydrate

Current version : 5.0.0, issued: 16.12.2014

Replaced version: 5.0.0, issued: 14.07.2014

Region: GB

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

In case of persisting adverse effects, consult a physician. Remove contaminated clothing and shoes immediately, and launder thoroughly before reusing.

After inhalation

Remove affected person from the immediate area. Ensure supply of fresh air. Keep breathing passages free. Seek medical advice immediately.

After skin contact

Wash immediately with plenty of water for several minutes.

After eye contact

Separate eyelids, wash the eyes thoroughly with water (15 min.).

After ingestion

Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. If individual is drowsy or unconscious, place in recovery position (on left side, with head down). Do not induce vomiting. Call a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms

Shortness of breath; muscular pain; Coughing

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Product itself is non-combustible; adapt fire extinguishing measures to surrounding areas.

Unsuitable extinguishing media

No data available.

5.2 Special hazards arising from the substance or mixture

None known

5.3 Advice for firefighters

Cool endangered containers with water spray jet. Use self-contained breathing apparatus. Wear protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Refer to protective measures listed in sections 7 and 8. Avoid contact with skin, eyes and clothing. Avoid dust formation. Keep away sources of ignition. Ensure adequate ventilation.

For emergency responders

No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up

Take up mechanically. Send in suitable containers for recovery or disposal.

6.4 Reference to other sections

No data available.

Trade name: Copper sulfate pentahydrate

Current version : 5.0.0, issued: 16.12.2014

Replaced version: 5.0.0, issued: 14.07.2014

Region: GB

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Provide good ventilation of working area (local exhaust ventilation, if necessary). If workplace exposure limits are exceeded, respiratory protection approved for this particular job must be worn. Avoid the formation and deposition of dust. Avoid contact with skin and eyes.

General protective and hygiene measures

Avoid contact with eyes and skin. Do not inhale dust. At work do not eat, drink, smoke or take drugs. Keep away from foodstuffs and beverages. Remove soiled or soaked clothing immediately. Store work clothing separately.

Advice on protection against fire and explosion

Keep away from sources of heat and ignition. Avoid formation of dust.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Keep container tightly closed in a cool, well-ventilated place. Protect from heat and direct sunlight.

Requirements for storage rooms and vessels

Always keep in containers of same material as the original one. Store product in closed containers.

Inappropriate material iron; steel

Advice on storage assembly

Bases; Hydrazine; nitromethane; Protect against humidity

7.3 Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

DNEL and PNEC values

DNEL values (worker)

No	Substance name			CAS / EC no
	Route of exposure	Exposure time	Effect	Value
1	copper sulphate, 5-hydrate			7758-99-8 231-847-6
	dermal			137 mg/kg/day
	Remarks: valid for dry copper compounds			
	inhalative	Long term (Chronic)	systemic	1 mg/m ³

DNEL value (consumer)

No	Substance name			CAS / EC no
	Route of exposure	Exposure time	Effect	Value
1	copper sulphate, 5-hydrate			7758-99-8 231-847-6
	oral			0.041 mg/kg/day

Trade name: Copper sulfate pentahydrate

Current version : 5.0.0, issued: 16.12.2014

Replaced version: 5.0.0, issued: 14.07.2014

Region: GB

PNEC values

No	Substance name		CAS / EC no	
	ecological compartment	Type	Value	
1	copper sulphate, 5-hydrate		7758-99-8 231-847-6	
	water	fresh water	7.8	µg/l
	water	marine water	5.2	µg/l
	water	fresh water sediment	87	mg/kg
	with reference to: dry weight			
	water	marine water sediment	676	mg/kg
	with reference to: dry weight			
	soil	-	65	mg/kg
	with reference to: dry weight			
	sewage treatment plant	-	230	µg/l

8.2 Exposure controls

Appropriate engineering controls

No data available.

Personal protective equipment

Respiratory protection

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. In case of dust formation, take appropriate measures for breathing protection in the event workplace threshold values are not specified.

Eye / face protection

Safety glasses (EN 166)

Hand protection

Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product. Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

Other

Normal chemical work clothing.

Environmental exposure controls

No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form/Colour	
crystalline	
blue	
Odour	
odourless	
Odour threshold	
No data available	
pH value	
Value	4
Concentration	0.2 mol/l
Boiling point / boiling range	
No data available	
Melting point / melting range	
not determined	

EC safety data sheet



Trade name: Copper sulfate pentahydrate

Current version : 5.0.0, issued: 16.12.2014

Replaced version: 5.0.0, issued: 14.07.2014

Region: GB

Decomposition point / decomposition range	
Value	560 °C
Flash point	
Not applicable	
Auto-ignition temperature	
No data available	
Oxidising properties	
No data available	
Explosive properties	
No data available	
Flammability (solid, gas)	
No data available	
Lower flammability or explosive limits	
No data available	
Upper flammability or explosive limits	
No data available	
Vapour pressure	
Not applicable	
Vapour density	
No data available	
Evaporation rate	
No data available	
Relative density	
No data available	
Density	
Value	2.286 g/cm ³
Reference temperature	15.6 °C
Solubility in water	
Value	22 g/100g H ₂ O
Reference temperature	25 °C
Solubility(ies)	
No data available	
Partition coefficient: n-octanol/water	
No data available	
Viscosity	
No data available	
9.2 Other information	
Other information	
No data available.	

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available.

10.2 Chemical stability

Stable under recommended storage and handling conditions (See section 7).

Trade name: Copper sulfate pentahydrate

Current version : 5.0.0, issued: 16.12.2014

Replaced version: 5.0.0, issued: 14.07.2014

Region: GB

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

air humidity

10.5 Incompatible materials

Bases; Hydrazine; Nitromethane

10.6 Hazardous decomposition products

Sulphurous oxides (SO_x); Copper oxides; hydrogen sulphide (H₂S)

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity			
No	Substance name	CAS no.	EC no.
1	copper sulphate, 5-hydrate	7758-99-8	231-847-6
LD50		482	mg/kg bodyweight
Species	rat		
Method	OECD 401		
Source	CSR		

Acute dermal toxicity			
No	Substance name	CAS no.	EC no.
1	copper sulphate, 5-hydrate	7758-99-8	231-847-6
LD50		> 2000	mg/kg bodyweight
Species	rat		
Method	OECD 402		
Source	CSR		

Acute inhalational toxicity			
No data available			

Skin corrosion/irritation			
No	Substance name	CAS no.	EC no.
1	copper sulphate, 5-hydrate	7758-99-8	231-847-6
Species	rabbit		
Method	OECD 404		
Source	CSR		
Evaluation	non-irritant		

Serious eye damage/irritation			
No	Substance name	CAS no.	EC no.
1	copper sulphate, 5-hydrate	7758-99-8	231-847-6
Species	rabbit		
Method	OECD 405		
Source	CSR		
Evaluation	strongly irritant		

Respiratory or skin sensitisation			
No	Substance name	CAS no.	EC no.
1	copper sulphate, 5-hydrate	7758-99-8	231-847-6
Route of exposure	Skin		
Species	guinea pig		
Method	OECD 406		
Source	CSR		
Evaluation	non-sensitizing		

EC safety data sheet



Trade name: Copper sulfate pentahydrate

Current version : 5.0.0, issued: 16.12.2014

Replaced version: 5.0.0, issued: 14.07.2014

Region: GB

Germ cell mutagenicity			
No	Substance name	CAS no.	EC no.
1	copper sulphate, 5-hydrate	7758-99-8	231-847-6
Source		CSR	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Reproduction toxicity			
No	Substance name	CAS no.	EC no.
1	copper sulphate, 5-hydrate	7758-99-8	231-847-6
Source		CSR	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Carcinogenicity			
No	Substance name	CAS no.	EC no.
1	copper sulphate, 5-hydrate	7758-99-8	231-847-6
Source		CSR	
Evaluation/classification		Based on available data, the classification criteria are not met.	
STOT-single exposure			
No data available			
STOT-repeated exposure			
No data available			
Aspiration hazard			
No data available			
Delayed and immediate effects as well as chronic effects from short and long-term exposure			
Inhalation may lead to irritation of the respiratory tract.			

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish (acute)		
No data available		
Toxicity to fish (chronic)		
No data available		
Toxicity to Daphnia (acute)		
No data available		
Toxicity to Daphnia (chronic)		
No data available		
Toxicity to algae (acute)		
No data available		
Toxicity to algae (chronic)		
No data available		
Bacteria toxicity		
No data available		
Other aquatic organisms		
LC50		34.4 µg Cu/l
Species	Other aquatic organisms	
Remarks	The stated concentration is an extrapolated value based on numerous studies taken from the CSR.	
NOEC		14.9
Species	Other aquatic organisms	
Remarks	The stated concentration is an extrapolated value based on numerous studies taken from the CSR.	

Trade name: Copper sulfate pentahydrate

Current version : 5.0.0, issued: 16.12.2014

Replaced version: 5.0.0, issued: 14.07.2014

Region: GB

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

Results of PBT and vPvB assessment	
PBT assessment	The product is not considered to be a PBT.
vPvB assessment	The product is not considered to be a vPvB.

12.6 Other adverse effects

No data available.

12.7 Other information

Other information
Do not discharge into the drains or waters and do not store on public depositories.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

Packaging

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse. Packaging that cannot be cleaned should be disposed of in agreement with the regional waste disposal company.

SECTION 14: Transport information

14.1 Transport ADR/RID/ADN

Class	9
Classification code	M7
Packing group	III
Hazard identification no.	90
UN number	UN3077
Technical name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Danger releasing substance	copper sulphate, 5-hydrate
Tunnel restriction code	E
Label	9
Environmentally hazardous substance mark	Symbol "fish and tree"

14.2 Transport IMDG

Class	9
Packing group	III
UN number	UN3077
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Danger releasing substance	copper sulphate, 5-hydrate
EmS	F-A+S-F
Label	9
Marine pollutant mark	Symbol "fish and tree"

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Current version : 5.0.0, issued: 16.12.2014

Replaced version: 5.0.0, issued: 14.07.2014

Region: GB

14.3 Transport ICAO-TI / IATA

Class	9
Packing group	III
UN number	UN3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Danger releasing substance	copper sulphate, 5-hydrate
Label	9
Environmentally hazardous substance mark	Symbol "fish and tree"

14.4 Other information

No data available.

14.5 Environmental hazards

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user

No data available.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not relevant

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)

In accordance with the Reach regulation (EC) 1907/2006, the product does not contain any substances that are considered as subject to listing in annex XIV, inventory of substances requiring authorisation.

REACH candidate list of substances of very high concern (SVHC) for authorisation

In accordance with article 57 and article 59 of the Reach regulation (EC) 1907/2006, this substance is not considered as subject to listing in annex XIV, inventory of substances requiring authorisation ("Authorization list").

Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, PREPARATIONS AND ARTICLES

The substance is not subject to the provisions of annex XVII (restriction entries) of the Reach regulation (EC) 1907/2006.

Council Directive 96/82/EC on the control of major-accident hazards involving dangerous substances

Remarks Annex I, part 2, category 9 a

15.2 Chemical safety assessment

No data available.

SECTION 16: Other information

Sources of key data used to compile the data sheet:

EC Directive 67/548/EC resp. 1999/45/EC as amended in each case.

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

EC Directives 2000/39/EC, 2006/15/EC, 2009/161/EU

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding chapter.

Full text of the R-, H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)

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.

Trade name: Copper sulfate pentahydrate

Current version : 5.0.0, issued: 16.12.2014

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H400 Very toxic to aquatic life.

List of existing exposition scenarios

ES001 Use in fertilizers - industrial use
ES002 Formulation and (re)packing of substance and mixtures - industrial use
ES003 Use in synthesis - industrial use
ES004 Use in fertilisers - professional use
ES005 Water treatment - industrial use

Department issuing safety data sheet

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This information is based on our present state of knowledge and experience.
The security data sheet describes products with a view to the security requirements.
However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.

Alterations/supplements:

Alterations to the previous edition are marked in the left-hand margin.