

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Trade name **Copper(II) chloride**
 Stock number: 35673
 CAS Number: 7447-39-4
 EC number: 231-210-2

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

Identified use: No further relevant information available.
 SU24 Scientific research and development

1.3 Details of the supplier of the safety data sheet**Manufacturer/Supplier:**

Alfa Aesar GmbH & Co.KG
 A Johnson Matthey Company
 Zeppelinstr. 7b
 76185 Karlsruhe / Germany
 Tel: +49 (0) 721 84007 280
 Fax: +49 (0) 721 84007 300
 Email: tech@alfa.com
 www.alfa.com


Informing department:

Product safety Tel + +049 (0) 7275 988687-0


1.4 Emergency telephone number:

Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)
 Poison Information Center Mainz
 www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

 GHS05 corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

 GHS09 environment


Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.


 GHS07

Acute Tox. 4 H302 Harmful if swallowed.


Classification according to Directive 67/548/EEC or Directive 1999/45/EC

 C; Corrosive

R34: Causes burns.

 Xn; Harmful

R22: Harmful if swallowed.

 N; Dangerous for the environment

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

Information concerning particular hazards for human and environment:

Not applicable

Other hazards that do not result in classification

No information known.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008****Hazard pictograms****Signal word****Hazard statements**

The substance is classified and labelled according to the CLP regulation.

GHS05, GHS07, GHS09

Danger

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H410 Very toxic to aquatic life with long lasting effects.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

SECTION 3: Composition/information on ingredients**3.1 Substances**

CAS# Designation: 7447-39-4 Copper(II) chloride

Identification number(s):

EC number: 231-210-2

Additional information: Ampouled under argon

SECTION 4: First aid measures**4.1 Description of first aid measures****General information****After inhalation**

Instantly remove any clothing soiled by the product.

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

Seek immediate medical advice.

After skin contact

Instantly wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact**After swallowing**

Rinse opened eye for several minutes under running water. Then consult doctor.

Seek medical treatment.

4.2 Most important symptoms and effects, both acute and delayed

Gastric or intestinal trouble

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4.3 Indication of any immediate medical attention and special treatment needed No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents Use fire fighting measures that suit the environment.

5.2 Special hazards arising from the substance or mixture If this product is involved in a fire, the following can be released:
Hydrogen chloride (HCl)
Metal oxide

5.3 Advice for firefighters
Protective equipment: Wear self-contained breathing apparatus.
Wear full protective suit.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation

6.2 Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.
Do not allow product to reach sewage system or water bodies.
Do not allow to enter the ground/soil.

6.3 Methods and material for containment and cleaning up: Use neutralizing agent.
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.

Prevention of secondary hazards: No special measures required.

6.4 Reference to other sections See Section 7 for information on safe handling
See section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling Keep containers tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires: The product is not flammable

7.2 Conditions for safe storage, including any incompatibilities

Storage
Requirements to be met by storerooms and containers: No special requirements.

Information about storage in one common storage facility: Store away from water.

Further information about storage conditions: This product is hygroscopic.
Store under dry inert gas.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Protect from humidity and keep away from water.
Store in a locked cabinet or with access restricted to technical experts or their assistants.

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

Additional information about design of technical systems: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

8.1 Control parameters
Components with critical values that require monitoring at the workplace:

Copper fume, dusts and mists (as Cu)
mg/m³

ACGIH TLV	1 (dust, mist); 0.2 (fume)
Austria MAK	1; 0.1 (fume)
Belgium TWA	0.2 (fume); 1 (dust)
Denmark TWA	0.1
Finland TWA	0.2 (fume); 1 (dust)
France VME	0.2 (fume); 1 (dust); 1; 2-STEL (dust)
Germany MAK	0.1 (fume); 1 (dust)
Hungary TWA	0.2; 0.4-STEL (dust)
Korea TLV	1 (dust, mist); 0.2 (fume)
Netherlands MAC-TGG	1 (dust)
Norway TWA	0.05; 0.1 (fume)
Poland TWA	0.1 (fume); 0.3-STEL (fume)
Russia	1-STEL (dust)
Sweden NGV	0.2 (resp. dust); 1 (total dust)
Switzerland MAK-W	0.1; 0.2-KZG-W (fume)
	1; 1-KZG-W
United Kingdom TWA	0.2 (fume)
	1; 3-STEL (dusts and mist)
USA PEL TWA	0.1 (fume); 1 (dusts and mists)

7447-39-4 Copper(II) chloride (100,0%)

MAK (Germany)	0,1E mg/m ³
MAK (TRGS 900) (Germany)	1 E mg/m ³
	25; (DFG)

Additional information: No data

8.2 Exposure controls
Personal protective equipment
General protective and hygienic measures

The usual precautionary measures should be adhered to in handling the chemicals.
Keep away from foodstuffs, beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes and skin.
Maintain an ergonomically appropriate working environment.

Breathing equipment: Use breathing protection with high concentrations.

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Protection of hands:	Check protective gloves prior to each use for their proper condition. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.	(Contd. of page 2)
Material of gloves	Impervious gloves	
Penetration time of glove material	Not determined	
Eye protection:	Tightly sealed safety glasses. Full face protection	
Body protection:	Protective work clothing.	

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties****General Information****Appearance:**

Form:	Powder
Colour:	Yellow-brown
Smell:	Odourless
Odour threshold:	Not determined.

pH-value (50 g/l) at 20 °C: 3,5

Change in condition

Melting point/Melting range:	620 °C
Boiling point/Boiling range:	993 °C (dec)
Sublimation temperature / start:	Not determined

Flash point:	Not applicable
Inflammability (solid, gaseous)	Not determined.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Self-inflammability:	Not determined.

Danger of explosion: Product is not explosive.**Critical values for explosion:**

Lower:	Not determined
Upper:	Not determined
Steam pressure:	Not applicable.
Density at 20 °C	3,386 g/cm ³
Relative density	Not determined.
Vapour density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	

Water at 20 °C:	422 g/l
Partition coefficient (n-octanol/water):	Not determined.

Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.

9.2 Other information No further relevant information available.**SECTION 10: Stability and reactivity****10.1 Reactivity****10.2 Chemical stability****Thermal decomposition / conditions to be avoided:****10.3 Possibility of hazardous reactions****10.5 Incompatible materials:****10.6 Hazardous decomposition products:**

No information known.
Stable under recommended storage conditions.
No decomposition if used and stored according to specifications.
No dangerous reactions known
Alkali metals
Bases
Water/moisture
Hydrogen chloride (HCl)
Metal oxide

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity:****LD/LC50 values that are relevant for classification:****Skin irritation or corrosion:****Eye irritation or corrosion:****Sensitization:****Germ cell mutagenicity:****Carcinogenicity:****Reproductive toxicity:****Specific target organ system toxicity - repeated exposure:****Specific target organ system toxicity - single exposure:****Aspiration hazard:****Other information (about experimental toxicology):****Additional toxicological information:**

Harmful if swallowed. Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
No data
Causes severe skin burns.
Causes serious eye damage.
Sensitizing effect by skin contact is possible by prolonged exposure.
No effects known.
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
No effects known.
No effects known.
No effects known.
No effects known.
Mutagenic effects have been observed on tests with bacteria. Mutagenic effects have been observed on tests with laboratory animals. To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

SECTION 12: Ecological information**12.1 Toxicity****Aquatic toxicity:****12.2 Persistence and degradability****12.3 Bioaccumulative potential****12.4 Mobility in soil****Ecotoxicological effects:****Remark:****Additional ecological information:****General notes:**

No further relevant information available.
No further relevant information available.
No further relevant information available.
No further relevant information available.
Very toxic for fish
Do not allow product to reach ground water, water bodies or sewage system. Do not allow material to be released to the environment without proper governmental permits. Water hazard class 2 (Assessment by list): hazardous for water.

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according to 1907/2006/EC, Article 31

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Danger to drinking water if even small quantities leak into soil.
Also poisonous for fish and plankton in water bodies.
May cause long lasting harmful effects to aquatic life.
Avoid transfer into the environment.
Very toxic for aquatic organisms

12.5 Results of PBT and vPvB assessment**PBT:** Not applicable.**vPvB:** Not applicable.**12.6 Other adverse effects** No further relevant information available.**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Recommendation**

Hand over to disposers of hazardous waste.
Must be specially treated under adherence to official regulations.
Consult state, local or national regulations for proper disposal.

Uncleaned packagings:**Recommendation:**

Disposal must be made according to official regulations.

SECTION 14: Transport information**UN-Number****ADR, IMDG, IATA**

UN2802

14.2 UN proper shipping name**ADR****IMDG****IATA**

2802 COPPER CHLORIDE
COPPER CHLORIDE, MARINE POLLUTANT
COPPER CHLORIDE

14.3 Transport hazard class(es)**ADR****Class****Label****IMDG**

8 (C2) Corrosive substances.

8

**Class****Label****IATA**

8 Corrosive substances.

8

**Class****Label**

8 Corrosive substances.

8

Packing group**ADR, IMDG, IATA**

III

14.5 Environmental hazards:**Marine pollutant:**

Environmentally hazardous substance, solid; Marine Pollutant
Yes
Yes (P)
Symbol (fish and tree)

14.6 Special precautions for user**Kemler Number:****Segregation groups**

Warning: Corrosive substances.

80

Acids

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC**Code**

Not applicable.

Transport/Additional information:**ADR****Excepted quantities (EQ):****Limited quantities (LQ)****Transport category****Tunnel restriction code**

E1

5 kg

3

E

UN "Model Regulation":

UN2802, COPPER CHLORIDE, 8, III

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Australian Inventory of Chemical****Substances**

Substance is listed.

Standard for the Uniform Scheduling of**Drugs and Poisons**

Substance is not listed.

National regulations**Information about limitation of use:**

Employment restrictions concerning young persons must be observed.
For use only by technically qualified individuals.

Water hazard class:

Water hazard class 2 (Assessment by list): hazardous for water.

Other regulations, limitations and prohibitive regulations**ELINCS (European List of Notified Chemical****Substances)**

Substance is not listed.

Substances of very high concern (SVHC)**according to REACH, Article 57**

Substance is not listed.

REACH - Pre-registered substances

Substance is listed.

15.2 Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing data specification sheet: Health, Safety and Environmental Department.(Contd. on page 5)
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Safety data sheet
according to 1907/2006/EC, Article 31

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Trade name *Copper(II) chloride***Abbreviations and acronyms:**

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RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
P: Marine Pollutant
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

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