

**Safety Data Sheet**  
According to OSHA and ANSI

Printing date 04/26/2013

Reviewed on 04/16/2013

**1 Identification of the substance/mixture and of the company/undertaking****Product identifier****Product name:** Copper(II) chloride, anhydrous**Stock number:** 12457**CAS Number:**

7447-39-4

**EC number:**

231-210-2

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

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

**Information Department:** Health, Safety and Environmental Department**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

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

GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.



GHS05 Corrosion

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

Eye Dam. 1

**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**Label elements****Labelling according to Regulation (EC) No 1272/2008**

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

**Hazard pictograms**

GHS05



GHS06

**Signal word** Danger**Hazard statements**

H301 Toxic if swallowed.

H314 Causes severe skin burns and eye damage.

**Precautionary statements**

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

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

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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.

P405 Store locked up.

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

**WHMIS classification**

D2B - Toxic material causing other toxic effects

E - Corrosive material

**Classification system**

**HMIS ratings (scale 0-4)**

**(Hazardous Materials Identification System)**

HEALTH	2
FIRE	0
REACTIVITY	1

Health (acute effects) = 2

Flammability = 0

Reactivity = 1

**Other hazards**

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

### 3 Composition/information on ingredients

**Chemical characterization: Substances**

**CAS# Description:**

7447-39-4 Copper(II) chloride, anhydrous

**Identification number(s):**

**EC number:** 231-210-2

### 4 First aid measures

**Description of first aid measures**

**General information** Immediately remove any clothing soiled by the product.

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

**After eye contact**

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

**After swallowing** Seek medical treatment.

**Information for doctor**

**Most important symptoms and effects, both acute and delayed**

No further relevant information available.

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

### 5 Firefighting measures

**Extinguishing media**

**Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

**Special hazards arising from the substance or mixture**

If this product is involved in a fire, the following can be released:

Metal oxide fume

Hydrogen chloride (HCl)

**Advice for firefighters**

**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

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**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

**Environmental precautions:**

Do not allow material to be released to the environment without proper governmental permits.

**Methods and material for containment and cleaning up:**

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

**Prevention of secondary hazards:** No special measures required.**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 disposal information.

**7 Handling and storage****Handling****Precautions for safe handling**

Handle under dry protective gas.

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

**Information about protection against explosions and fires:** The product is not flammable**Conditions for safe storage, including any incompatibilities****Storage****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:**

Store away from oxidizing agents.

Store away from air.

Store away from water/moisture.

**Further information about storage conditions:**

Store under dry inert gas.

This product is hygroscopic.

This product is air sensitive.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Protect from humidity and water.

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

**Control parameters****Components with limit values that require monitoring at the workplace:**

Copper	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)
Netherlands MAC-TGG	1 (dust)
Norway TWA	0.05
	0.1 (fume)
Poland TWA	0.1; 0.3-STEL (fume)
	1; 2-STEL (dust)
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; 2-STEL (dusts and mists as Cu)

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1; 3-STEL

USA PEL 0.1 (fume, dusts & mists)

**Additional information:** No data

**Exposure controls**
**Personal protective equipment**
**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use suitable respirator when high concentrations are present.

**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

**Eye protection:**

Tightly sealed goggles

Full face protection

**Body protection:** Protective work clothing.

### 9 Physical and chemical properties

**Information on basic physical and chemical properties**
**General Information**
**Appearance:**

<b>Form:</b>	Powder
<b>Color:</b>	Yellow-brown
<b>Odor:</b>	Odorless
<b>Odor threshold:</b>	Not determined.

**pH-value (50 g/l) at 20°C (68 °F):** 3.5

**Change in condition**

<b>Melting point/Melting range:</b>	620°C (1148 °F)
<b>Boiling point/Boiling range:</b>	993°C (1819 °F) (dec)
<b>Sublimation temperature / start:</b>	Not determined

<b>Flash point:</b>	Not applicable
<b>Flammability (solid, gaseous)</b>	Not determined.
<b>Ignition temperature:</b>	Not determined
<b>Decomposition temperature:</b>	Not determined
<b>Auto igniting:</b>	Not determined.

**Danger of explosion:** Product does not present an explosion hazard.

**Explosion limits:**

<b>Lower:</b>	Not determined
<b>Upper:</b>	Not determined

**Vapor pressure:** Not applicable.

**Density at 20°C (68 °F):** 3.386 g/cm<sup>3</sup> (28.256 lbs/gal)

**Relative density** Not determined.

**Vapor density** Not applicable.

**Evaporation rate** Not applicable.

**Solubility in / Miscibility with**

**Water at 20°C (68 °F):** 422 g/l  
Soluble

**Partition coefficient (n-octanol/water):** Not determined.

**Viscosity:**

**dynamic:** Not applicable.

**kinematic:** Not applicable.

**Other information** No further relevant information available.

### 10 Stability and reactivity

**Reactivity** No information known.

**Chemical stability** Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions** No dangerous reactions known

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**Incompatible materials:**

Alkali metals

Bases

Air

Water/moisture

**Hazardous decomposition products:**

Metal oxide fume

Hydrogen chloride (HCl)

**11 Toxicological information****Information on toxicological effects****Acute toxicity:**

Harmful if swallowed.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

**LD/LC50 values that are relevant for classification:** No data**Skin irritation or corrosion:** Causes severe skin burns.**Eye irritation or corrosion:** Causes serious eye damage.**Sensitization:** No sensitizing effects known.**Germ cell mutagenicity:** No effects known.**Carcinogenicity:**

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**Reproductive toxicity:** No effects known.**Specific target organ system toxicity - repeated exposure:** No effects known.**Specific target organ system toxicity - single exposure:** No effects known.**Aspiration hazard:** No effects known.**Other information (about experimental toxicology):**

Mutagenic effects have been observed on tests with bacteria.

**Subacute to chronic toxicity:**

Copper compounds may be irritating to the skin, eyes and respiratory tract. They may cause metal fume fever, hemolysis of the red blood cells and injury to the liver, lungs, kidneys and pancreas. Ingestion may also cause vomiting, gastric pain, dizziness, anemia, cramps, convulsions, shock, coma and death.

**Subacute to chronic toxicity:**

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Behavioral - somnolence (general depressed activity).

Behavioral - convulsions or effect on seizure threshold.

Behavioral - changes in motor activity (specific assay).

Blood - changes in serum composition (e.g. TP, bilirubin, cholesterol).

Blood - other changes.

Blood - changes in leukocyte (WBC) count.

Nutritional and Gross Metabolic - weight loss or decreased weight gain.

Nutritional and Gross Metabolic - changes in chlorine.

Endocrine - hyperglycemia.

Reproductive - Fertility - post-implantation mortality (e.g. dead/or resorbed implants per total number of implants).

Reproductive - Effects on Embryo or Fetus - extra-embryonic structures (e.g., placenta, umbilical cord)

Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).

Reproductive - Paternal Effects - spermatogenesis (including genetic material, sperm morphology, motility, and count).

Reproductive - Paternal Effects - prostate, seminal vesicle, Cowper's gland, accessory glands.

Reproductive - Paternal Effects - other effects on male.

Reproductive - Effects on Embryo or Fetus - fetal death.

**Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**12 Ecological information****Toxicity****Aquatic toxicity:** No further relevant information available.**Persistence and degradability** No further relevant information available.**Behavior in environmental systems:****Bioaccumulative potential** No further relevant information available.**Mobility in soil** No further relevant information available.**Ecotoxicological effects:****Remark:** Very toxic for aquatic organisms

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**Additional ecological information:****General notes:**

Do not allow product to reach ground water, water course or sewage system.  
Danger to drinking water if even small quantities leak into the ground.  
Also poisonous for fish and plankton in water bodies.  
Do not allow material to be released to the environment without proper governmental permits.  
May cause long lasting harmful effects to aquatic life.  
Very toxic for aquatic organisms

**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

**13 Disposal considerations****Waste treatment methods**

Recommendation Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

**14 Transport information****UN-Number**

DOT, ADR, IMDG, IATA

UN2802

**UN proper shipping name**

DOT, IATA

COPPER CHLORIDE

ADR

2802 COPPER CHLORIDE

IMDG

COPPER CHLORIDE, MARINE POLLUTANT

**Transport hazard class(es)**

DOT



Class

8 Corrosive substances.

Label

8

ADR



Class

8 (C2) Corrosive substances

Label

8

IMDG



Class

8 Corrosive substances.

Label

8

IATA



Class

8 Corrosive substances.

Label

8

**Packing group**

DOT, ADR, IMDG, IATA

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<b>Environmental hazards:</b>	Environmentally hazardous substance, solid; Marine Pollutant
<b>Marine pollutant (IMDG):</b>	Yes (P) Symbol (fish and tree)
<b>Special precautions for user</b>	Warning: Corrosive substances
<b>Danger code (Kemler):</b>	80
<b>Segregation groups</b>	Acids
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	
<b>DOT</b>	
<b>Hazardous substance:</b>	10 lbs, 4.54 kg
<b>Marine Pollutant (DOT):</b>	Yes (PP)
<b>Remarks:</b>	Special marking with the symbol (fish and tree).
<b>UN "Model Regulation":</b>	UN2802, COPPER CHLORIDE, 8, III

### 15 Regulatory information

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

#### National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

#### Information about limitation of use:

For use only by technically qualified individuals.

This product contains copper and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

#### Other regulations, limitations and prohibitive regulations

**EINICS (European Inventory of Existing Commercial Substances)** Substance is listed.

**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.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 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 MSDS:** Health, Safety and Environmental Department.

#### Abbreviations and acronyms:

**RID:** Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

**ICAO:** International Civil Aviation Organization

**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

**DOT:** US Department of Transportation

**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)

**HMIS:** Hazardous Materials Identification System (USA)

**WHMIS:** Workplace Hazardous Materials Information System (Canada)

USA