

Safety Data Sheet **COPPER (FOIL, TURNINGS AND WIRE)**

SDS no. 28GDTPM3 • Version 1.0 • Date of issue: 2024-01-23

SECTION 1: Identification

GHS Product identifier

Product name COPPER (FOIL, TURNINGS AND WIRE)

Other means of identification

COPPER WIRE LR	CL076
COPPER FOIL LR	CL054
COPPER TURNINGS TG	CT056
COPPER FOIL AR	CA054

Recommended use of the chemical and restrictions on use

Electrical wiring and conductors, switches, ammunition, manufacture of bronzes, brass and other copper alloys, plumbing, works of art; electroplated protective coatings and undercoats for nickel chromium, zinc etc. cooking utensils; corrosion resistant piping; insecticides; catalyst; antifouling paints. Flakes used as insulation for liquid fuels. Whiskers used in thermal and electrical composites; laboratory reagent.

Supplier's details

Name ChemSupply Australia Pty Ltd
Address 38-50 Bedford Street
5013 Gillman South Australia
Australia

Telephone 08 8440 2000
email www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

Not classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as non-Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

Not a hazardous substance or mixture.

GHS label elements, including precautionary statements

Not a hazardous substance or mixture.

Other hazards which do not result in classification

Not a hazardous substance or mixture.

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 63.55

Components

Component	CAS no.	Concentration
Copper (Foil, Rod, Slug) (EC no.: 231-159-6; Index no.: 029-024-00-X)	7440-50-8	100 - 100 % (weight)
CLASSIFICATIONS: Hazardous to the aquatic environment, long-term (chronic), Cat. 2. HAZARDS: H411 - Toxic to aquatic life with long lasting effects.		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash fountain in work area.
If inhaled	No specific measures
In case of skin contact	Remove contaminated clothing and wash affected skin with soap and water. Seek medical advice if effects persist.
In case of eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.

Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically based on judgement of doctor and individual reactions of the patient.

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Use extinguishing media most appropriate for the surrounding fire.

Specific hazards arising from the chemical

Irritating, toxic and corrosive fumes and vapours, including copper fumes and oxides of copper.

Special protective actions for fire-fighters

Use suitable protective equipment for surrounding fire.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment listed in Section 8.

Methods and materials for containment and cleaning up

Sweep up (avoid generating dust) and remove to a suitable, clearly labelled container for disposal in accordance with local regulations.

SECTION 7: Handling and storage

Precautions for safe handling

Keep away from incompatibles such as acetylene, ammonium nitrate, bromates, chlorates, iodates, chlorine, (chlorine and oxygen difluoride), chlorine trifluoride, ethylene oxide, fluorine, hydrogen peroxide, hydrazine mononitrite, hydrogen sulfide, hydrazoic acid, lead azide, potassium peroxide, sodium azide, and sodium peroxide, strong acids and strong oxidizing agents.

Conditions for safe storage, including any incompatibilities

More resistant to atmospheric corrosion than iron, forming a green layer of hydrated basic carbonate. Readily attacked by alkalies. Attacked by acetic acid and other organic acids.

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection

Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Excellent: Nitrile, Neoprene gloves Fair: NR Latex.

Body protection

Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection

Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state
Appearance
Color

Solid
A metal with a distinct reddish colour.
No data available.

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Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	1083 °C
Boiling point or initial boiling point and boiling range	2595 °C
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	No data available.
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Insoluble. Solubility in Organic Solvents: Slowly soluble in ammonia water.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	1 mm (@ 1628 °C)
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 8.94
Relative vapor density	No data available.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes

No data available.

Further safety characteristics (supplemental)

Other Information: Ductile, malleable. Excellent conductor of electricity. Dissolves readily in nitric and hot concentrated sulfuric acids, in hydrochloric and dilute sulfuric acids slowly, but only when exposed to the atmosphere.

Heat of fusion: 48.9 cal/g.

Mohs' hardness: 3.0.

Specific Resistance: 1.673 microohms/cm.

SECTION 10: Stability and reactivity

Reactivity

Stable under normal conditions of storage and handling.

Chemical stability

May discolour on exposure to air and moisture.

Possibility of hazardous reactions

Reacts violently with acetylene, ammonium nitrate, bromates, chlorates, iodates, chlorine, chlorine trifluoride, (chlorine + oxygen difluoride), ethylene oxide, fluorine, hydrogen peroxide, hydrazine mononitrate, hydrazoic acid, hydrogen sulfide, lead azide, potassium peroxide, sodium azide and sodium peroxide.

Conditions to avoid

Moisture. Heat, flames, ignition sources and incompatibles.

Incompatible materials

Keep away from incompatibles such as acetylene, ammonium nitrate, bromates, chlorates, iodates, chlorine, (chlorine and oxygen difluoride), chlorine trifluoride, fluorine, ethylene oxide, fluorine, hydrogen peroxide, hydrazine mononitrite, hydrogen sulfide, hydrazoic acid, lead azide, potassium peroxide, sodium azide, and sodium peroxide, strong acids and strong oxidizing agents.

Hazardous decomposition products

Copper oxides. Emits toxic fumes.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Ingestion: Ingestion of sufficient concentrations may cause irritation and possible burning and pain of mucous membranes in the mouth, pharynx, oesophagus, and gastrointestinal tract, with metallic taste, salivation, headache, nausea, abdominal/gastric pain, dizziness, convulsions, shock, bloody diarrhoea and vomiting. The vomitus is characteristically greenish-blue. If vomiting does not occur immediately systemic copper poisoning may occur, symptoms include of capillary damage, headache, cold sweat, weak pulse, stomach and intestine ulceration, internal haemorrhage, nephritis, jaundice, CNS damage, kidney and liver damage, shock, coma and possibly death. Poisoning could occur due to this material being soluble in hydrochloric acid, which the stomach contains.

Inhalation: Inhalation of copper dust and fumes may irritate the respiratory tract (nose, throat, lungs) and mucous membranes. Symptoms may include of coughing, sore throat, wheezing, metallic taste, high temperature, and shortness of breath. May result in harmful corrosive effects including lesions, ulcerations and perforation of the nasal septum and respiratory tract, delayed pulmonary oedema, pneumonitis and emphysema. When heated this compound may give off copper fume, which may cause 'fume metal fever' with symptoms similar to the common cold, including chills and stiffness of the head as well as high temperatures, nausea, coughing and general weakness.

Skin corrosion/irritation

May cause discolouration of the skin; greenish-black skin. May cause skin irritation, possibly severe, resulting in redness, itching and pain. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.

Serious eye damage/irritation

Causes eye irritation with symptoms including redness, itching, pain, stinging, blurred vision, discoloration and possible eye damage (permanent corneal opacification, chemical conjunctivitis, ulceration) leading to irreversible eye injury.

Respiratory or skin sensitization

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

No data available.

Reproductive toxicity

No data available.

Summary of evaluation of the CMR properties

No data available.

Specific target organ toxicity (STOT) - single exposure

No data available.

Specific target organ toxicity (STOT) - repeated exposure

No data available.

Aspiration hazard

No data available.

Additional information

Chronic Effects: Prolonged or repeated exposure to dusts of copper may cause discolouration of the skin or hair and or demantitis. Repeated inhalation can cause chronic respiratory disease. Prolonged or repeated exposure to the eye may cause severe injury to the iris or cornea and may cause blindness. Prolonged or repeated exposure may cause blood and liver damage, ulceration and perforation of the

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nasal septum, runny nose, metallic taste, atrophic changes and irritation of the mucous membranes. Chronic copper poisoning is typified by hepatic cirrhosis, enlargement of the liver, jaundice, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis.

Pregnant women should not use this product! This product has been suspected to cause birth defects, low birth weight, psychological, behavioural defects, and cause adverse effects on the female and male reproductive systems.

Other Information: Due to the physical form of this product no hazardous properties are expected when used and handled with appropriate care. The above TOXICOLOGICAL INFORMATION relates to copper dust.

SECTION 12: Ecological information

Toxicity

No data available.

Persistence and degradability

No data available.

Bioaccumulative potential

No data available.

Mobility in soil

No data available.

Results of PBT and vPvB assessment

No data available.

Endocrine disrupting properties

No data available.

Other adverse effects

No data available.

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP

Poison Schedule: NS

SECTION 16: Other information

Further information/disclaimer

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

Preparation information

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'

Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.

Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)