

Material Safety Data Sheet	Copper – Mill Scale
-----------------------------------	----------------------------

SUPPLIER DETAILS			
-------------------------	--	--	--

Supplier Name:	Palabora Copper (Pty) Ltd	Emergency Telephone Number:	+27 (0)15 780 2666
Address:	PO Box 65 1 Copper Road Phalaborwa, 1390 South Africa	E-Mail Address:	palabora.msds@palabora.co.za
Person Responsible for Updating MSDS:	Manager: Environment & SHEQ MS	Telephone Number:	+27 (0)15 780 2911
		URL / WebPages:	http://www.palabora.com/

1. PRODUCT IDENTIFICATION	
----------------------------------	--

Chemical Names and Synonyms: Copper cathode, Copper rod, Copper metal	UN Number: NA
CAS Number: 7440-50-8	NIOSH Number: NA

2. COMPOSITION	
-----------------------	--

Composition - Copper
 Percent by wt. - 99.9% minimum
 Remaining components not determined hazardous and/or hazardous components present at less than 1.0% (0.1% for carcinogens). These include a coating of synthetic water soluble lubricant (SK-12) having the following composition:
 Polyalkylene glycols, Hexylene glycol, 2-(2-Butoxyethoxy) ethanol and Oleamide Dea.

3. HAZARDOUS IDENTIFICATION	
------------------------------------	--

Emergency Overview - Metallic product which poses little or no immediate hazard in solid form.
Inhalation - Can cause irritation to the nose, throat, lungs, and mucous membranes. Inhalation of particulate may cause metal fume fever (high temperature, metallic taste, nausea, coughing, general weakness, muscle aches, and exhaustion), bronchitis, chills, decreased pulmonary function, and asthma-like symptoms. Inhalation of particulate containing metallic copper can cause ulceration and perforation of the nasal septum.
Ingestion - Copper ingestion is not a normal route of entry, but may cause nausea, vomiting, abdominal pain, metallic taste, and diarrhea if ingested as a powder.
Skin & Eyes – Particulates or copper fumes may cause a greenish-black skin discoloration.
Long-term health effects - Prolonged or repeated exposure to copper can discolor skin and hair and irritate the skin; may cause mild dermatitis, runny nose, and irritation of the mucous membranes. Repeated ingestion may damage the liver and kidneys.

4. FIRST AID MEASURES	
------------------------------	--

Inhalation:	Breathing difficulty caused by inhalation of particulate requires immediate removal to fresh air. If breathing has stopped, perform artificial respiration and obtain medical help.
Ingestion:	Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person
Skin contact:	Thoroughly wash skin cuts or wounds to remove all particulate, debris from the wound Seek medical attention for wounds that cannot be thoroughly cleansed. Treat skin cuts and wounds with standard first aid practices such as cleansing, disinfecting and covering to prevent wound infection and contamination before continuing work. Obtain medical help for persistent irritation. Material accidentally implanted or lodged under the skin must be removed.
Eye Contact:	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower & upper eyelids occasionally. Get medical attention immediately

5. FIRE FIGHTING MEASURES

Flash Point (Method Used): This material does not give a flash point by conventional test methods. Elevated temperatures, including surrounding fire or welding and oxy-gas burning may produce metal fume or vapor. Copper dust may form explosive mixtures in air.

Extinguishing Media: Dry Sand or Metal Extinguishing Powders (dry chemical)

Special Fire Fighting Procedures: Use NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing if involved in fire.

Unusual Fire and Explosion Hazards: Solid form can burn at minimum rate without flame (smolder). Do not use water on molten or smoldering metal. Grinding or other machining operations can produce fine particulate dust that may explode in the presence of a strong ignition source.

6. ACCIDENTAL RELEASE MEASURES

Pick up spilled copper shavings or mill scale. If soiled or dirty, store in closed container for delivery to a metals recycling center. Do not dispose in trash or domestic waste - recycle.

7. HANDLING AND STORAGE

Handling: Particulate may enter the body through cuts, abrasions or other wounds on the surface of the skin. Wear gloves when handling parts with loose surface particulate or sharp edges.

Storage: - Store in a dry area inside sealed containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne copper below the TLV. If ventilation alone cannot so control exposures, use approved respirators selected according to local regulations. Avoid repeated skin contact. Wear suitable gloves. Wash skin thoroughly after handling. Launder clothing and gloves as needed.

TLV-TWA (Copper Dusts & Mists) - 1mg/m³ OSHA PEL and ACGIH TLV

TLV-TWA (Copper Fumes) - 0.1 mg/m³ OSHA PEL Water soluble oil: OSHA PEL for Hexylene glycol: ceiling 25ppm.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color: Reddish metal with lubricated feel from clear soluble oil which is violet/purple.

Melting point: 1083 Degrees celcius

Specific Gravity (H₂O=1): 8.89-8.94 (copper).

Solubility in Water: copper mill scale – negligible, whilst the oil is completely soluble.

The water soluble oil has a mild odour.

10. STABILITY AND REACTIVITY

Stability : Copper mill scale with soluble oil is stable under normal conditions of use.

Incompatibility (Material to avoid with copper mill scale) : Do not mix with powdered alkali and alkaline earth metals or strong oxidizing agents. May react with acetylene, ammonium nitrate, bromates, phosphorus, potassium peroxide, sodium azide, and sodium peroxide.

Conditions to Avoid : None Known

Hazardous Polymerization : Will not occur.

Products of Decomposition : None

11. TOXICOLOGICAL INFORMATION

Inhalation : Inhalation of dust an fumes can irritate the respiratory tract.

Ingestion : Can cause allergic reaction in some individuals.

Skin : Can cause allergic reaction in some individuals.

Eye : Contact with fumes can irritate the eyes.

Cancer Information : No ingredients listed as human carcinogens by NTP or IARC.

Water soluble oil on mill scale: overexposure to high vapour concentrations of hexylene glycol may cause central nervous system depression, with possible effects such as nausea, headache, dizziness and unconsciousness.



12. ECOLOGICAL INFORMATION

Environmental Impact Information: In its solid form it has no known toxicity to ecological systems. Some copper derivatives (salts) are microelements but may be toxic in high concentrations to aquatic life. The soluble oil covered mill scale should be kept out of sewers and waterways.

13. DISPOSAL CONSIDERATIONS

Copper-containing waste is normally collected to recover copper values. Should waste disposal be deemed necessary, follow local regulations.

14. TRANSPORT INFORMATION

Not regulated for either air or ground shipments.

15. REGULATORY INFORMATION

This product contains metallic Copper which may be subject to local and international regulations.

16. OTHER INFORMATION

HANDLING/STORAGE: Avoid inhalation of fumes from the heated/molten material.

DISCLAIMER

All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors or omissions or the consequences thereof. It is the user's obligation to determine the conditions of safe use of the material, all risks of use of the product are therefore assumed by the user and we expressly disclaim all warranties of every kind and nature, including warranties of merchantability and fitness for a particular purpose in respect to the use or suitability of the product.