

# SAFETY DATA SHEET

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

### 1.1 Product identifier

**Product name** COPPER CATHODE

**Synonyms** 8710 - PRODUCT CODE • CATHODE • COPPER • COPPER CATHODE • COPPER CATHODE (ZINIFEX METALS) (FORMERLY) • COPPER SHEET • COPPER SWEEPINGS • CU

### 1.2 Uses and uses advised against

**Uses** FEEDSTOCK

### 1.3 Details of the supplier of the product

**Supplier name** NYRSTAR PORT PIRIE

**Address** PO Box 219, Port Pirie, SA, 5540, AUSTRALIA

**Telephone** (08) 8638 1500

**Fax** (08) 8638 1583

**Website** <http://www.nyrstar.com>

### 1.4 Emergency telephone numbers

**Emergency** (08) 8638 1500

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

### 2.2 GHS Label elements

No signal word, pictograms, hazard or precautionary statements have been allocated.

### 2.3 Other hazards

No information provided.

## 3. COMPOSITION/ INFORMATION ON INGREDIENTS

### 3.1 Substances / Mixtures

| Ingredient | CAS Number | EC Number | Content |
|------------|------------|-----------|---------|
| COPPER     | 7440-50-8  | 231-159-6 | >99.9%  |

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

**Eye** Exposure is considered unlikely.

**Inhalation** Exposure is considered unlikely. Due to product form / nature of use, an inhalation hazard is not anticipated.

**Skin** No adverse effects are anticipated. However, sensitive individuals may develop allergic skin reactions. Gently flush affected areas with water and discontinue use.

**Ingestion** For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.

**First aid facilities** None allocated.

### 4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

**4.3 Immediate medical attention and special treatment needed**

Treat symptomatically.

---

**5. FIRE FIGHTING MEASURES**

---

**5.1 Extinguishing media**

Use an extinguishing agent suitable for the surrounding fire.

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

Non flammable. May evolve toxic gases if strongly heated.

**5.3 Advice for firefighters**

No fire or explosion hazard exists.

**5.4 Hazchem code**

None allocated.

---

**6. ACCIDENTAL RELEASE MEASURES**

---

**6.1 Personal precautions, protective equipment and emergency procedures**

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

**6.2 Environmental precautions**

Prevent product from entering drains and waterways.

**6.3 Methods of cleaning up**

If spilt, collect and reuse where possible.

**6.4 Reference to other sections**

See Sections 8 and 13 for exposure controls and disposal.

---

**7. HANDLING AND STORAGE**

---

**7.1 Precautions for safe handling**

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

**7.2 Conditions for safe storage, including any incompatibilities**

Store removed from incompatible substances and foodstuffs.

**7.3 Specific end uses**

No information provided.

---

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

---

**8.1 Control parameters**

**Exposure standards**

| Ingredient                    | Reference | TWA |                   | STEL |                   |
|-------------------------------|-----------|-----|-------------------|------|-------------------|
|                               |           | ppm | mg/m <sup>3</sup> | ppm  | mg/m <sup>3</sup> |
| Copper (fume)                 | SWA (AUS) | --  | 0.2               | --   | --                |
| Copper, dusts & mists (as Cu) | SWA (AUS) | --  | 1                 | --   | --                |

**Biological limits**

No biological limit values have been entered for this product.

**8.2 Exposure controls**

**Engineering controls**

No special precautions are normally required when handling this product. Maintain dust levels below the recommended exposure standard.

**PRODUCT NAME COPPER CATHODE**

**PPE**

|                    |  |
|--------------------|--|
| <b>Eye / Face</b>  | Wear safety glasses.                         |
| <b>Hands</b>       | Wear leather gloves.                         |
| <b>Body</b>        | Wear safety boots.                           |
| <b>Respiratory</b> | Not required under normal conditions of use. |



---

**9. PHYSICAL AND CHEMICAL PROPERTIES**

---

**9.1 Information on basic physical and chemical properties**

|                                  |                        |
|----------------------------------|------------------------|
| <b>Appearance</b>                | REDDISH METALLIC SOLID |
| <b>Odour</b>                     | ODOURLESS              |
| <b>Flammability</b>              | NON FLAMMABLE          |
| <b>Flash point</b>               | NOT RELEVANT           |
| <b>Boiling point</b>             | 2595°C                 |
| <b>Melting point</b>             | 1083°C                 |
| <b>Evaporation rate</b>          | NOT AVAILABLE          |
| <b>pH</b>                        | NOT AVAILABLE          |
| <b>Vapour density</b>            | NOT AVAILABLE          |
| <b>Specific gravity</b>          | 8.92                   |
| <b>Solubility (water)</b>        | INSOLUBLE              |
| <b>Vapour pressure</b>           | 0 mm Hg @ 25°C         |
| <b>Upper explosion limit</b>     | NOT RELEVANT           |
| <b>Lower explosion limit</b>     | NOT RELEVANT           |
| <b>Partition coefficient</b>     | NOT AVAILABLE          |
| <b>Autoignition temperature</b>  | NOT AVAILABLE          |
| <b>Decomposition temperature</b> | NOT AVAILABLE          |
| <b>Viscosity</b>                 | NOT AVAILABLE          |
| <b>Explosive properties</b>      | NOT AVAILABLE          |
| <b>Oxidising properties</b>      | NOT AVAILABLE          |
| <b>Odour threshold</b>           | NOT AVAILABLE          |

**9.2 Other information**

|                    |     |
|--------------------|-----|
| <b>% Volatiles</b> | NIL |
|--------------------|-----|

---

**10. STABILITY AND REACTIVITY**

---

**10.1 Reactivity**

Massive metal is non reactive under normal conditions of use, storage and transport. Shock sensitive compounds are formed with acetylenic compounds, ethylene oxide or azide compounds.

**10.2 Chemical stability**

Stable under recommended conditions of storage.

**10.3 Possibility of hazardous reactions**

Polymerization is not expected to occur.

**10.4 Conditions to avoid**

Avoid heat, sparks, open flames and other ignition sources.

**10.5 Incompatible materials**

Incompatible with acids (e.g. nitric acid).

**10.6 Hazardous decomposition products**

May evolve toxic gases if heated to decomposition.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity** This product is expected to be of low acute toxicity. Under normal conditions of use, adverse health effects are not anticipated.

**Information available for the ingredients:**

| Ingredient | Oral LD50 | Dermal LD50        | Inhalation LC50 |
|------------|-----------|--------------------|-----------------|
| COPPER     | --        | > 2000 mg/kg (rat) | --              |

**Skin** Not classified as a skin irritant.

**Eye** Not classified as an eye irritant.

**Sensitisation** Not classified as causing skin or respiratory sensitisation. Allergic contact dermatitis has been reported in humans.

**Mutagenicity** No evidence of mutagenic effects.

**Carcinogenicity** No evidence of carcinogenic effects.

**Reproductive** No relevant or reliable studies were identified.

**STOT - single exposure** Not classified as causing organ damage from single exposure.

**STOT - repeated exposure** Not classified as causing organ damage from repeated exposure.

**Aspiration** Not applicable for solids.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

The database on copper ecotoxicity comprises over 350 high-quality acute ecotoxicity values, primarily from tests with soluble chemical forms. The species mean LC50 value of 29.2 µg/L for the rainbow trout (*Oncorhynchus mykiss*) has been proposed as the acute reference value at pH 6. The results of the Transformation/ Dissolution Assay for copper massive give an average normalized critical value of 10.11 µg/L for the acute test, while the lowest chronic reference value was 20 µg/L and the results at low loading value are 0.6 µg/L.

### 12.2 Persistence and degradability

Copper is a natural element and is therefore, by definition, not degradable. As an essential nutrient, copper is homeostatically regulated by aquatic organisms and does not pose a concern for bioaccumulation or secondary poisoning in aquatic food chains.

### 12.3 Bioaccumulative potential

Not expected to bioconcentrate or bioaccumulate. Chemical processing or extended exposure to the environment can result in the release of copper in a bio-available form.

### 12.4 Mobility in soil

Copper in the massive form is essentially immobile in the environment.

### 12.5 Other adverse effects

Due to the product form (insoluble solid block), the environmental impact of this product will be negligible. Transformation-dissolution testing has confirmed that negligible concentrations are released from massive copper in contact with water.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

**Waste disposal** Return to manufacturer/supplier where possible. Contact the manufacturer/supplier for additional information (if required).

**Legislation** Dispose of in accordance with relevant local legislation.

## 14. TRANSPORT INFORMATION

**NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA**

**PRODUCT NAME COPPER CATHODE**

|                                    | LAND TRANSPORT (ADG) | SEA TRANSPORT (IMDG / IMO) | AIR TRANSPORT (IATA / ICAO) |
|------------------------------------|----------------------|----------------------------|-----------------------------|
| <b>14.1 UN Number</b>              | None allocated.      | None allocated.            | None allocated.             |
| <b>14.2 Proper Shipping Name</b>   | None allocated.      | None allocated.            | None allocated.             |
| <b>14.3 Transport hazard class</b> | None allocated.      | None allocated.            | None allocated.             |
| <b>14.4 Packing Group</b>          | None allocated.      | None allocated.            | None allocated.             |

**14.5 Environmental hazards**

No information provided.

**14.6 Special precautions for user**

Hazchem code None allocated.

---

**15. REGULATORY INFORMATION**

---

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

|                           |   |
|---------------------------|---|
| <b>Poison schedule</b>    | Classified as a Schedule 6 (S6) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).   |
| <b>Classifications</b>    | Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.<br><br>The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)]. |
| <b>Hazard codes</b>       | None allocated.   |
| <b>Risk phrases</b>       | None allocated.   |
| <b>Safety phrases</b>     | None allocated.   |
| <b>Inventory listings</b> | <b>AUSTRALIA: AICS (Australian Inventory of Chemical Substances)</b><br>All components are listed on AICS, or are exempt.   |

---

**16. OTHER INFORMATION**

---

**Additional information** EXPOSURE STANDARDS - TIME WEIGHTED AVERAGES: Exposure standards are established on the premise of an 8 hour work period of normal intensity, under normal climatic conditions and where a 16 hour break between shifts exists to enable the body to eliminate absorbed contaminants. In the following circumstances, exposure standards must be reduced: Strenuous work conditions; hot, humid climates; high altitude conditions; extended shifts (which increase the exposure period and shorten the period of recuperation).

**PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:**

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

**HEALTH EFFECTS FROM EXPOSURE:**

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

**PRODUCT NAME COPPER CATHODE****Abbreviations**

|                   |   |
|-------------------|---|
| ACGIH             | American Conference of Governmental Industrial Hygienists                                       |
| CAS #             | Chemical Abstract Service number - used to uniquely identify chemical compounds                 |
| CNS               | Central Nervous System  |
| EC No.            | EC No - European Community Number   |
| EMS               | Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)                   |
| GHS               | Globally Harmonized System  |
| GTEPG             | Group Text Emergency Procedure Guide  |
| IARC              | International Agency for Research on Cancer   |
| LC50              | Lethal Concentration, 50% / Median Lethal Concentration   |
| LD50              | Lethal Dose, 50% / Median Lethal Dose   |
| mg/m <sup>3</sup> | Milligrams per Cubic Metre  |
| OEL               | Occupational Exposure Limit   |
| pH                | relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline). |
| ppm               | Parts Per Million   |
| STEL              | Short-Term Exposure Limit   |
| STOT-RE           | Specific target organ toxicity (repeated exposure)  |
| STOT-SE           | Specific target organ toxicity (single exposure)  |
| SUSMP             | Standard for the Uniform Scheduling of Medicines and Poisons                                    |
| SWA               | Safe Work Australia   |
| TLV               | Threshold Limit Value   |
| TWA               | Time Weighted Average   |

**Report status**

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

**Prepared by**

Risk Management Technologies  
5 Ventnor Ave, West Perth  
Western Australia 6005  
Phone: +61 8 9322 1711  
Fax: +61 8 9322 1794  
Email: [info@rmt.com.au](mailto:info@rmt.com.au)  
Web: [www.rmtglobal.com](http://www.rmtglobal.com)

**[ End of SDS ]**