



PAGE 1 of 7	BASE METALS REFINERY	
REVISION N°.: 9	*SAFETY DATA SHEET – COPPER CATHODE	
	DOCUMENT N°.: MAN-HDS-002	

DISTRIBUTION CONTROL SHEET

COPY N°	LOCATION	TITLE
1	Quality Offices	Document Controller
2	SHEQ	Safety & Hygiene Manager (Electronic)
3	Despatch	Process Supervisor (Electronic)
4	Plant Manager's Office	Plant Manager – Nickel (Electronic)
5	Manager – BMR Office	Manager – BMR (Electronic)
6	Lab. Manager's Office	Laboratory Manager (Electronic)
7	Marketing	Marketing Executive (Electronic)
8	IRS	IRS Superintendent (Electronic)
9	Sales Admin.	Sales Admin Manager (Electronic)

This document is valid for 30 days of print (Top Left Corner) only!
Please destroy after use!

PAGE 2 of 7	BASE METALS REFINERY	
REVISION N ^o : 9	*SAFETY DATA SHEET – COPPER CATHODE	
	DOCUMENT N ^o :	MAN-HDS-002

1. **IDENTIFICATION OF THE MATERIAL AND SUPPLIER**

1.1 **Supplier Details**

Impala Platinum Ltd – Refineries

Base Metals Refinery

P.O. Box 222

SPRINGS

1560

GAUTENG

Republic of South Africa

Tel.: +27 11 360 3777

Fax.: +27 11 360 3495

Head Office

Implats

Private Bag x18

NORTHLANDS

2116

Gauteng

Republic of South Africa

Tel.: +27 11 731 9000

Fax.: +27 11 731 9254

1.2 **Contact Persons**

Refineries - Manager, BMR

Head Office - Marketing Executive

1.3 **Emergency Contact Information:** For emergency information – see above for contacts

1.4 **Product Description:** Copper Cathodes

1.5 **Synonyms:** ISA Copper, Copper Cathode, Copper sheet, Cathode Copper, Impala Copper, Copper Metallic.

1.6 **Use(s):** Catalyst, Alloys, Construction Materials, Wiring, Plumbing, Electrolysis.

2. **HAZARDS IDENTIFICATION**

CLASSIFIED AS HAZARDOUS

NOT CLASSIFIED AS A DANGEROUS GOOD

Health Hazard Summary

Low to moderate toxicity. Avoid dust / fume inhalation (e.g. during cutting / welding). Chronic or high level dust/fume exposure may cause liver, kidney and blood damage. Inhalation of fumes (e.g. if welding) may cause metal fume fever, a flu-like illness with dry throat, cough, chills, tight chest, weakness and muscular aches (symptoms last 1 – 2 days).

Page 3 of 7	Document N°.: MAN-HDS-002	BASE METALS REFINERY
Revision N°.: 9	*SAFETY DATA SHEET – COPPER CATHODE	

- 2.1 **Eye:** Exposure is considered highly unlikely due to product form. Dust irritant. Exposure may result in laceration, irritation, pain and redness. Product form greatly reduces the risk of eye injuries. Flush gently with running water. Seek medical attention if irritation develops.
- 2.2 **Inhalation:** Exposure is considered highly unlikely due to product form. Irritant. Toxic fume if heated. Exposure to dust / fume generated may cause irritation of the nose and throat with ulceration / perforation of the nasal septum. Inhalation of fumes (if welding) may result in metal fume fever. Product form greatly reduces the risk of inhalation. If over exposure occurs, leave exposure area immediately if other minor symptoms are displayed, seek immediate medical attention.
- *2.3 **Skin:** Exposure is considered highly unlikely due to product form. Dust irritant. Remove contaminated clothing and gently flush affected area with water. Seek medical attention if irritation develops. Launder clothing before re-use.
- *2.4 **Ingestion:** Exposure is considered highly unlikely due to product form. Low to moderate toxicity from dust / fumes. Ingestion may result in nausea, vomiting, abdominal pain and diarrhoea. Large doses may result in blood and liver /kidney damage. Due to product form, ingestion is considered unlikely. If poisoning occurs, contact a Doctor of the POISONS Information Centre +27 11 642 2417 or 0800 113911 (South Africa). Do not induce vomiting without first seeking medical advice.

3. **COMPOSITION / INFORMATION ON INGREDIENTS**

Ingredient	:	Copper
Formula	:	Cu
CAS N°.	:	7440-50-8
Poison Sched.	:	None Allocated
Conc.	:	>99.90%
ICSC#	:	0240
RTECS#	:	GL5325000

4. **FIRST AID MEASURES**

- 4.1 **Eye:** Not applicable.
- 4.2 **Inhalation:** Not applicable. Due to product form, acute inhalation symptoms are not anticipated. When melted metal fumes may cause slight irritation.
- 4.3 **Skin:** Not applicable. However, sensitive individuals may develop allergic skin reactions. Seek medical attention if this occurs.
- 4.4 **Ingestion:** Due to product form and application, ingestion is considered highly unlikely.

5. **FIRE FIGHTING MEASURES**

- 5.1 **Flammability:** Not flammable. No fire or explosion hazard exists.
- 5.2 **Fire and Explosion:** Non flammable. May cause fire or explosion with incompatible materials (see Reactivity section 10.2). Evacuate area and contact emergency services. Remain upwind and notify those downwind of the hazard. Wear full protective equipment, including self contained Breathing apparatus (SCBA) when combating fire. Bund water to prevent contamination of drains.
- 5.3 **Extinguishing:** Non flammable.
- 5.4 **Hazchem Code:** None allocated.

Page 4 of 7	Document N ^o .: MAN-HDS-002	BASE METALS REFINERY
Revision N ^o .: 9	*SAFETY DATA SHEET – COPPER CATHODE	

6. ACCIDENTAL RELEASE MEASURES

- 6.1 **Spillage:** If spill is cathode form, collect and re-use where possible. If spilt and contaminated wear dust proof goggles, PVC / Rubber gloves, a Class PI (Particulate) respirator and overalls. Collect the spill and place in sealable containers for re-use where possible or for disposal. Avoid generating dust. Toxic to aquatic organisms in very low concentrations. Do not flush residues to sewer. Absorb all residues.
- 6.2 **Environment:** Due to product form (insoluble solid plates), the environmental impact of this product will be negligible. Small amounts of the product may dissolve if product is in contact with acidic water, and soluble copper compounds are highly toxic to aquatic and plant life. Insoluble copper compounds are significantly less environmentally hazardous.

7. HANDLING AND STORAGE

- 7.1 **Packaging Material:** Packed in bale weights slightly in excess of 2000kg. Each bale is mounted on a pallet. The copper is secured to the pallet by means of two metal strips which pass through the pallet and encompass the copper.
- 7.2 **Handling:** Use safe work practices to avoid eye or skin contact and inhalation. Observe good personal hygiene. Prohibit eating, drinking and smoking in contaminated areas. Wash hands before eating.
- 7.3 **Storage:** Store in a cool, dry, well ventilated area, removed from oxidising agents, strong acids, (e.g. Nitric acid) chlorine, fluorine, ethylene oxide, acetylene, hydrogen sulfide and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.
- 7.4 **Transport:** Not regulated for transport purposes.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- 8.1 **Ventilation:** No special precautions are normally required when handling this product. Maintain dust / fume levels below the recommended exposure standard.
- 8.2 **Occupational Exposure Limits:** TLV Cu fume: 0.2 mg/m³
TLV Cu dust/mist: 1mg/m³ (ACG1H 2007)
- 8.3 **PPE:** Wear safety glasses, safety boots and leather gloves. Whilst this product does not present a chemical exposure hazard with normal use, personal protective equipment has been recommended to protect against the physical hazards associated with handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Bright or reddish coloured metal, approx. 450mm high, 1050mm long and 1050mm wide
Odour	:	Odourless
Flammability	:	Non Flammable
Flash Point	:	Not Relevant
Boiling Point	:	2567 °C
Melting Point	:	1083 °C
Exposure Standard (TWA)	:	0.2 mg/m ³ (fume); 1 mg/m ³ (dust or mist)
Evaporation Rate	:	Not Available
pH	:	Not Available
%Volatiles	:	Not Available
Specific Gravity	:	8.94
Vapour Pressure	:	Not Relevant
Solubility (water)	:	Insoluble
Lower Explosion Limit	:	Not Relevant

Page 5 of 7	Document N ^o .: MAN-HDS-002	BASE METALS REFINERY
Revision N ^o .: 9	*SAFETY DATA SHEET – COPPER CATHODE	

Upper Explosion Limit : Not Relevant
Molecular Weight : 63.546
Cu concentration : >=99.90%

10. **STABILITY AND REACTIVITY**

10.1 **Flammability:** Non flammable. May evolve toxic gases (copper oxide) when heated to decomposition.

10.2 **Reactivity:** Incompatible with oxidising agents (e.g. magnesium chlorate), acids (e.g. nitric acid), and reacts violently with chlorine, fluorine, ethylene oxide, acetylene and hydrogen sulfide. Also incompatible with aluminium sulfur, sodium azide and lead azide.

10.3 **Decomposition Products:** May evolve toxic gases if heated to decomposition.

11. **TOXICOLOGICAL INFORMATION**

Low toxicity. Due to product form (block), no adverse health effects are anticipated with normal use.

11.1 **Eye:** Not applicable. Due to product form eye irritation is not anticipated.

11.2 **Inhalation:** Not applicable. Due to product form and nature of use, an inhalation hazard is not anticipated.

11.3 **Skin:** Non irritating. Allergic contact dermatitis has been reported, although rare.

11.4 **Ingestion:** Due to product form, ingestion is considered highly unlikely.

Acute Toxicity Data:
 LDLo (Ingestion): 375mg/kg (rabbit)

12. **ECOLOGICAL INFORMATION**

Due to product form (insoluble solid block), the environmental impact of this product will be negligible. Small quantities of the product may dissolve if product is in contact with acidic water, and such soluble copper compounds are highly toxic to aquatic and plant life. Insoluble copper compounds are significantly less environmentally hazardous.

13. **DISPOSAL CONSIDERATION**

13.1 **Waste Disposal:** Return bulk cathodes to the supplier. For small amounts of contaminated copper, cover with moist sand, vermiculite or similar to avoid dust hazard. Contact Impala Refineries on +27 11 360 3777 for additional specific information

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

14. **TRANSPORT INFORMATION**

Transport : Not classified as a Dangerous Good.
Hazchem. : None Allocated
U.N. # : None Allocated
D.G Class : None Allocated
PKG Group : None Allocated
EPG : None Allocated
Sub/Tert. Risk : None Allocated

15. **REGULATORY INFORMATION**

None allocated.

Page 6 of 7	Document N ^o .: MAN-HDS-002	BASE METALS REFINERY
Revision N ^o .: 9	*SAFETY DATA SHEET – COPPER CATHODE	

16. OTHER INFORMATION

16.1 **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).

16.2 **Colour Rating System:** Green. Chem Alert reports are assigned a colour rating of Green, Amber or Red for the purpose of providing users with a quick and easy means of determining the hazardous nature of a product. Safe handling recommendations are provided in all Chem Alert reports so as to clearly identify how users can control the hazards and thereby reduce the risk (or likelihood) of adverse effects. As a general guideline a Green colour rating indicates a low hazard, and Amber colour rating indicates a moderate hazard and a Red colour indicates a high hazard.

Whilst all due care has been taken in the preparation of the Colour Rating System, it is intended as a guide only and does not provide any warranty in relation to the accuracy of the Colour Rating System. As far as is lawfully possible, Impala accepts no liability or responsibility whatsoever for the actions or omissions of any person in reliance on the Colour Rating System.

16.3 **Personal Protective Equipment Guidelines:** The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as 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. Information provided by Risk Management Technologies is summarised for ease of use. Additional technical information is available by calling +61 89 322 1711.

16.4 **Health Effects from Exposure:** It should be noted that the effects from exposure to this will depend on several factors including: 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 Chem Alert report which encompasses all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

16.5 **Abbreviations:** mg/m³ – Milligrams per cubic metre.
ppm – Parts Per Million.
TWA/ES – Time Weighted Average of Exposure Standard.
pH – Relates to hydrogen ion concentration - this value will relate to a scale of 0 – 14, where 0 is highly acidic and 14 is highly alkaline.
CAS# - Chemical Abstract Service number – used to uniquely identify chemical compounds.
M – Moles per litre, a unit of concentration.
IARC – International Agency for Research on Cancer.
RTECS – The Registry of Toxic Effects of Chemical Substances
ICSC – International Chemical Safety Card.

16.6 **Report Reviewed:** *17 March 2009.

16.7 **Report Status:** Impala Platinum Ltd. have exercised reasonable care in the preparation of the information contained in this SDS, however, it assumes no responsibility or liability to the accuracy and suitability of such information, for application to the Buyer's intended purposes or consequences of its use. As regulatory standards and guideline recommendations are revised from time to time, Impala gives no assurance that the information contained in this SDS will be current at the time that the SDS is used. It is the responsibility of the Buyer/User to ensure that the most recent version of this document is available.

The data in this SDS relates only to the specific material designated herein and does not relate to use in combination with other materials and in any process. Impala assumes no

Page 7 of 7	Document N°.: MAN-HDS-002	BASE METALS REFINERY
Revision N°.: 9	*SAFETY DATA SHEET – COPPER CATHODE	

responsibility for any physical or chemical changes, which the Buyer/User may make to the material designated in this SDS. Since use of this SDS information and the opinions and conditions of the use of the product are not within the control of Impala Platinum Ltd., the Buyer/User is obligated to determine the conditions of safe use of the product.

*This document is valid for date of print (Top Left Corner) only!
Please destroy after use!*