NEWCREST MINING LIMITED
TELFER

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name **TELFER COPPER CONCENTRATE**

Synonyms COPPER CONCENTRATE

1.2 Uses and uses advised against

Uses COPPER PRODUCTION ● FEED MATERIAL

1.3 Details of the supplier of the product

Supplier name **NEWCREST MINING LIMITED, TELFER MINE SITE**

Address 1 Centro Ave, Subiaco, WA, 6008, AUSTRALIA

Telephone +61 (8) 9270 7070

Email corporateaffairs@newcrest.com.au

Website http://www.newcrest.com.au

1.4 Emergency telephone numbers

Emergency +61 (8) 9179 8222 (24 hours)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

Physical Hazards

Not classified as a Physical Hazard

Health Hazards

Carcinogenicity: Category 1A
Specific Target Organ Toxicity (Repeated Exposure): Category 2

Environmental Hazards

Aquatic Toxicity (Acute): Category 2
Aquatic Toxicity (Chronic): Category 3

2.2 GHS Label elements

Signal word **DANGER**

Pictograms

Hazard statements

H350i	May cause cancer by inhalation.
H373	May cause damage to organs (lungs) through prolonged or repeated exposure (inhalation).
H401	Toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Prevention statements

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response statements

P308 + P313	IF exposed or concerned: Get medical advice/ attention.

Storage statements

P401	Store in accordance with relevant site and storage provisions.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
PYRITE (IRON SULPHIDE)	1309-36-0	215-167-7	15 to 30%
QUARTZ (CRYSTALLINE SILICA)	14808-60-7	238-878-4	15 to 20%
CHALCOPYRITE (COPPER IRON SULPHIDE)	1308-56-1	603-441-2	12 to 16%
ENARGITE	14933-50-7	-	0.1 to 0.7%
LEAD COMPOUND(S)	7439-92-1	231-100-4	0.1 to 0.2%
NON HAZARDOUS INGREDIENTS	Not Available	Not Available	Remainder
MUSCOVITE	1318-94-1	603-531-1	12 to 19%
WATER	7732-18-5	231-791-2	5 to 12%

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes. Seek medical attention if irritation persists.

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.

Skin If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting. Ingestion is considered unlikely due to product form.

First aid facilities Eye wash facilities and safety shower should be available.

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 (lead/ copper oxides, sulphur dioxide and hydrogen sulphide) when heated to decomposition.

5.3 Advice for firefighters

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

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. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Eliminate all sources of ignition. Avoid generating airborne dust and dry sweeping.

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 SDS. 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. Avoid airborne dust generation. Suitable controls may include enclosure, water suppression and respiratory protective equipment.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. If stored in bulk, minimise dust generation by covering with a tarp or similar. If stored in packages, ensure packages are adequately labelled, and check regularly for leaks or spills. Incompatible with acids (evolving hydrogen sulphide) and oxidising agents (e.g. hypochlorites).

7.3 Specific end uses

Telfer Copper Concentrates reacts slowly with atmospheric oxygen and will deplete oxygen levels in an inadequately ventilated space. Entry to poorly ventilated spaces, such as ships holds, must follow confined space protocols.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m³	ppm	mg/m³
Iron oxide fume (Fe2O3) (as Fe)	SWA [AUS]	--	5	--	--
Iron salts, soluble, as Fe	SWA [AUS]	--	1	--	--
Lead, inorganic dusts & fumes (as Pb)	SWA [AUS]	--	0.05	--	--
Quartz (respirable dust)	SWA [AUS]	--	0.05	--	--

Biological limits

Ingredient	Reference	Determinant	Sampling Time	BEI
LEAD	SWA [AUS]	Lead in blood (women of child bearing potential)	Not critical	10 µg/dL
	SWA [AUS]	Lead in blood	Not critical	30 µg/dL

8.2 Exposure controls

Engineering controls Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, use local or extraction ventilation at source. Maintain dust levels below the recommended exposure standard.

PPE

Eye / Face	Wear safety glasses. High dust areas wear dust proof goggles.
Hands	Wear PVC, Rubber or Nitrile gloves.
Body	Long sleeved shirt, trousers or coveralls.
Respiratory	Where an inhalation risk exists wear a class P2 (particulate) respirator at concentrations up to 10 times the exposure standards, for high dust levels up to 100 times the exposure standards wear a PAPR (Powered Air Purifying Respirator) with P3 filter with full facepiece or head covering or a supplied air line respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	BROWN/GREY GRANULAR SOLID
Odour	CHARACTERISTIC ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT RELEVANT
pH	NOT AVAILABLE
Vapour density	NOT RELEVANT
Relative density	NOT AVAILABLE
Solubility (water)	INSOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT RELEVANT
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

Moisture Content/Water	5 % to 12 %

10. STABILITY AND REACTIVITY

10.1 Reactivity
Not reactive under normal conditions of use.

10.2 Chemical stability
Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions
Polymerization will not occur.

10.4 Conditions to avoid
Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials
Incompatible with acids (evolving hydrogen sulphide) and oxidising agents (e.g. hypochlorites).

10.6 Hazardous decomposition products
May evolve toxic gases (lead/ copper oxides, sulphur dioxide and hydrogen sulphide) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met. Lead LD50 (oral): 50 mg/kg to 600 mg/kg (calf).
Copper LD50 (dermal): > 2000 mg/kg (rat).
Quartz LD50 (oral/dermal) > 2000 mg/kg (rat).

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
LEAD COMPOUND(S)	50 mg/kg to 600 mg/kg (calf)	--	--

Skin Contact may result in mild irritation, redness and rash. May cause discolouration of the skin. Over exposure to copper may cause allergic contact dermatitis, although rare.

Eye Contact may result in mechanical irritation, lacrimation and redness.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Insufficient data available to classify as a mutagen.

Carcinogenicity The International Agency for Research on Cancer (IARC) classifies silica dust, crystalline, in the form of quartz or cristobalite, as carcinogenic to humans (Group 1). Safe Work Australia classifies quartz (respirable fraction) at concentrations of ≥ 0.1% for carcinogenicity category 1A. This product contains low levels of lead which is classified as probably carcinogenic to humans (IARC Group 2A). Due to product composition and form, adverse health effects are not anticipated.

Reproductive Whilst there is sufficient data to indicate that lead compounds may damage fertility or the unborn child, the concentration of lead in this product is below that to require classification.

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

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure. The level of respirable crystalline silica is between 1% and 5% (noting that the criteria of 1% is published by the European Industrial Minerals Association (IMA) for declaring the respirable crystalline silica hazard). Lung cancer excess risk is associated with high and repeated occupational exposure to respirable crystalline silica (RCS). RCS containing dust may cause silicosis, a nodular pulmonary fibrosis caused by deposition in the lungs of fine particles of RCS.
Repeated exposure to copper compounds may result in liver, kidney and blood damage.
Lead is a cumulative poison, and symptoms are often delayed, over exposure may result in lead poisoning. Repeated exposure may result in blood, kidney and central nervous system/brain damage.

Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability
Arsenic and lead compounds are very persistent in the environment.

12.3 Bioaccumulative potential
Inorganic lead is considered to be bioaccumulating in the environment, and may accumulate in aquatic and terrestrial plants and animals.

12.4 Mobility in soil
Insoluble in water.

12.5 Other adverse effects
No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Waste disposal Reuse where possible or return to manufacturer/supplier. Do not release to drains or waterways. 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

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

14.5 Environmental hazards
Not a Marine Pollutant.

14.6 Special precautions for user
Hazchem code None allocated.

Other information MARPOL Annex V (Solid Bulk Cargo Residues): Classified as not Harmful to the Marine Environment (non-HME).

IMSBC Code (Solid Bulk Cargo): Classified as Group A Mineral Concentrate.

15. REGULATORY INFORMATION

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

Poison schedule Classified as a Schedule 7 (S7) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

Inventory listings **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**
All components are listed on AIIC, or are exempt.

16. OTHER INFORMATION

Additional information

Respirable crystalline silica (RCS) has an industry self-classification (IMA-Europe) under the GHS, which classifies for the STOT-RE hazard but not the carcinogenicity hazard. The Telfer Copper Concentrate, therefore, does not meet the criteria for an MHB (TX) hazard under the IMSBC Code. In Australia, RCS at concentrations ≥ 0.1% is classified as carcinogenicity category 1A in accordance with Safe Work Australia's Hazardous Chemical Information System (HCIS) criteria. Based on its RCS concentration of 1 - 5 %, the Telfer Copper Concentrate is classified as hazardous with carcinogenicity category 1A. Sampling and analysis conducted in 2022 on the Telfer Copper Concentrate determined respirable crystalline silica and quartz concentrations which are now reported in this SDS

RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

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.

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/m³	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.

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