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SAFETY DATA SHEET
Copper Oxide CuO

Revision: 3
Revision Date: 19th July 2016

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product Identifiers

Product Name:	**Copper oxide purifier tube for MP-2000 Rare Gas Purifier** Copper oxide wire about 0.65 x 6 mm (surface: CuO, core: Cu2O) ACS contained and sealed in a stainless steel tube.
REACH No.:	A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
CAS-No.:	1317-38-0
EC No.:	215-269-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses:	Laboratory chemicals Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company:	Sircal Instruments (UK) Ltd. Unit 19 Charlwoods Road East Grinstead West Sussex RH19 2HL UK
Telephone:	+44 (0)1342 335309
Fax:	+44 (0)1342 323608

1.4 Emergency Telephone Number

Emergency Telephone:	+44 (0)1342 335309

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SECTION 2: Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification according to EU Directives 67/548/EEC or 1999/45/EC
N Dangerous for the environment R50

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram		
Signal word	Warning	
Hazard statement(s)	H400	Very toxic to aquatic life.
	H412	Harmful to aquatic life with long lasting effects.
Precautionary statement(s)	P273	Avoid release to the environment.
Supplemental Hazard Statements	None	

2.3 Other hazards

None

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SECTION 3: Composition/Information on Ingredients

3.1 Substances

Synonyms: Cupric Oxide

Formula: CuO
Molecular Weight: 79,55 g/mol
CAS-No.: 1317-38-0
EC-No.: 215-269-1

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component		Classification	Concentration
Copper Oxide			
CAS-No. EC-No.	1317-38-0 215-269-1	Aquatic Acute 1; Aquatic Chronic 3; H400, H412	<= 100 %

Hazardous ingredients according to Directive 1999/45/EC

Component		Classification	Concentration
Copper Oxide			
CAS-No. EC-No.	1317-38-0 215-269-1	N, R50	<= 100 %

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

SECTION 4: First Aid Measures

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

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

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

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SECTION 5: Firefighting Measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Copper oxides.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for fire fighting if necessary.

5.4 Further information
No data available.

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool place. Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Powder Colour: Black
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point /freezing point	Melting point/range: 1.336 °C
f)	Initial boiling point and boiling range	No data available
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability of explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	6,320 g/cm3
n)	Water solubility	0,0001 g/l - insoluble
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	The substance or mixture is not classified as oxidizing

9.2 Other safety information

Bulk density 1,25 g/l

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SECTION 10: Stability and reactivity

10.1 Reactivity
No data available.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available.

10.4 Conditions to avoid
No data available.

10.5 Incompatible materials
Reducing agents, Hydrogen Sulfide gas, Aluminum, Alkali metals, Powdered metals.

10.6 Hazardous decomposition products
Other decomposition products - no data available. In the event of fire: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - rat - > 2.500 mg/kg
(OECD Test Guideline 423)

LD50 Dermal - rat - > 2.000 mg/kg
(OECD Test Guideline 402)

Skin corrosion/irritation
Skin - rabbit
Result: No skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - rabbit
Result: Mild eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitisation
Maximisation Test - guinea pig
Does not cause skin sensitisation.
(OECD Test Guideline 406)

Germ cell mutagenicity
No data available.

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
No data available.

Specific target organ toxicity - single exposure
No data available.

Specific target organ toxicity - repeated exposure
No data available.

Aspiration hazard
No data available.

Additional information
RTECS: GL7900000

Symptoms of systemic copper poisoning may include: capillary damage, headache, cold sweat, weak pulse, and kidney and liver damage, central nervous system excitation followed by depression, jaundice, convulsions, paralysis, and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, 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 led to hemolytic anemia and accelerates arteriosclerosis. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 0,19 - 0,21 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 0,011 - 0,039 mg/l - 48 h NOEC - Lamellibranchia (mussel) - 0,007 mg/l - 288 h
Toxicity to algae	NOEC - Phaeodactylum tricornutum - 0,0057 mg/l - 72 h

12.2 Persistence and Degradability
The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bio accumulative Potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment are not available as chemical safety assessment not required/not conducted.

12.6 Other Adverse Effects
Very toxic to aquatic life.

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SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

SECTION 14: Transport information

14.1 ADR/RID:

UN Number: 3363
Proper Shipping Name: Dangerous Goods In Machinery or Dangerous Goods In Apparatus
Class: 9
Packing Group: -
Environmental hazards: No

Not subject to ADR/RID – see subsection 1.1.3.1.b

14.2 IMDG:

UN Number: 3363
Proper Shipping Name: Dangerous Goods In Machinery or Dangerous Goods In Apparatus
Class: 9
Packing Group: -
Marine Pollutant: No

See Special Provision 301

14.3 IATA:

UN Number:3363
Proper Shipping Name: Dangerous Goods In Machinery or Dangerous Goods In Apparatus
Class: 9
Packing Group: -
Packing Instruction: 962
Environmental hazards: No

SECTION 15: Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

No data available.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

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SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute:	Acute aquatic toxicity.
Aquatic Chronic:	Chronic aquatic toxicity.
H400:	Very toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Full text of R-phrases referred to under sections 2 and 3

N	Dangerous for the environment
R50	Very toxic to aquatic organisms.

Further information

 The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions.