

# SNEYD CERAMICS LIMITED

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SAFETY DATA SHEET

SDS: 2024

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## **Section 1: Identification of the substance / mixture and of the company / undertaking**

Product: **Copper Oxide K285**

Product form : Substance

Chemical name : Cupric Oxide

EC No : 215-269-1

CAS No. : 1317-38-0

REACH registration No. : 01-2119502447-44-0012

Formula : CuO

Synonyms : Black Copper Oxide, Copper (II) Oxide, Copper Oxide, Tenorite

Details of the supplier of the data sheet:

Sneyd Ceramics Limited, Sneyd Mills, Leonora Street, Burslem, Stoke on Trent, ST6 3BS, UK

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## **Section 2: Hazard Identification**

Aquatic Acute 1, H400

Aquatic Chronic 3, H412

Classification according to Directive 67/548/EEC (Dangerous substances directive)

N; R50

Full text of R,H & S-phrases: see section 16 See Section 11 for more detailed information on health effects and symptoms.

Hazard Pictogram (CLP)

GHS09



Signal word (CLP): WARNING

Hazard statements (CLP) :

H400: Very toxic to aquatic life (Aquatic Acute 1)

H412: Harmful to aquatic life with long lasting effects (Aquatic Chronic 3)

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Precautionary statements (CLP):

Disposal: P273: Avoid release to the environment.

P391: Collect spillage.

P501: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Safety phrases (CLP):

S60: This material and its container must be disposed of as hazardous waste.

S61: Avoid release to the environment. Refer to special instructions/safety data sheets.

Other hazards:

This substance/mixture does not meet the PBT criteria of REACH, annex XIII.

This substance/mixture does not meet the vPvB criteria of REACH, annex XIII.

### **Section 3: Composition / information on ingredients**

<u>Chemical Name</u>	<u>EC No</u>	<u>CAS No</u>	<u>Weight %</u>	<u>Classification</u> <u>(67/548/EEC)</u>	<u>Classification</u> <u>(1272/2008/EC)</u>
Cupric Oxide	1317-38-0	215-269-1	>97	N, R:50	Aquatic Acute 1 H400 Aquatic Chronic 3 H412

### **Section 4: First Aid Measures**

Ingestion: Do not induce vomiting. Seek medical attention if deemed necessary.

Inhalation: Move affected personnel to fresh air, keep warm and at rest.

Skin: Remove contaminated clothing and wash affected areas thoroughly with soap and water. If skin irritation or rash occurs, seek medical attention / advice.

Eyes: Irrigate eyeball thoroughly with water for at least 10 minutes. If discomfort persists, seek medical attention.

### **Section 5: Firefighting Measures**

Extinguishing Media: Use fire-extinguishing media suitable for the surrounding fire.

Note for fire-fighters: Use of approved supplied air or self-contained breathing apparatus operated in positive pressure mode are satisfactory. Totally impervious protective suits, gloves, and boots must be worn.

**Section 6: Accidental Release Measures**

Personal precautions: Wear protective clothing as per any relevant risk assessment.  
Provide adequate ventilation.

Environmental precautions: Do not allow to enter soil / subsoil. Do not allow to enter surface water or drains.

Methods and material for containment / cleaning up  
Collect mechanically and transfer into appropriate container for disposal.

**Section 7: Handling and Storage**

Precautions for sale handling: Do not eat, drink or smoke when using this product. Good personal hygiene / house-keeping procedures should be observed. Avoid the creation / spreading of dust / spray. Avoid release to the environment.

Storage precautions: Store in a dry place – avoiding extremes of temperature.

**Section 8: Exposure Controls / Personal Protection**

Exposure controls:



Country	Long term exposure limit 8 h TWA	Short term exposure limit 15m TWA	Notes
Australia	1 mg/m <sup>3</sup>		Copper, dusts and mists (as Cu)
UK	1 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	Copper, dusts and mists (as Cu)
Germany	0.1 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>	Copper & it's inorganic inhalable aerosol
France	1 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	Copper, dusts and mists (as Cu)
Spain	1 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	Copper, dusts and mists (as Cu)
Netherlands	0.1 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	Inhalable aerosol

Protective equipment: Respirator / Safety Goggles / Gloves. Ensure adequate ventilation is available and observe any occupational exposure limits for the product – see guidance Note EH40 latest edition.

Eye Protection: Eyewear complying with an approved standard should be worn if a risk assessment indicated eye contact is possible. Dust-resistant, chemical splash goggles are recommended.

Hand Protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn in a risk assessment indicates skin contact is possible.

Respiratory Protection: Respiratory protection must be used if the airborne contamination exceeds the airborne contamination exceeds the recommended OEL.  
Particulate filter, type P2

### **Section 9: Physical and Chemical Properties**

Appearance:	Solid Powder - Black
Odour:	Odourless
Melting Point:	1326 Deg C
Solubility in water:	Insoluble <0.1 mg/l

### **Section 10: Stability and Reactivity**

Reactivity:	Stable under normal conditions and when used as recommended
Stability:	Stable under normal conditions and when used as recommended
Conditions to avoid:	No specific data available
Materials to avoid:	No specific data available

### **Section 11: Toxicological Information**

Copper is an essential element and therefore it's concentration in the body is strictly and efficiently regulated by homeostatic mechanisms.

Acute Toxicity:

Oral: LD50>2,500 mg/kg bw (male rats). Test guideline OECD 423 [Sanders, 2002]. Cupric Oxide does not meet the criteria for classification.

Inhalation: Copper oxide showed little/no toxicity when administered to test animals by other routes. Furthermore, information on the particle size distribution and low water solubility of copper oxide indicate a low potential for inhalation exposure. Cupric oxide does not meet the criteria for classification.

Dermal: LD50>2,000 mg/kg (male and female rats). Test guideline OECD 402 [Sanders, 2002]. Cupric Oxide does not meet the criteria for classification

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Based on available data, the classification criteria are not met.

Genotoxicity: Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT – single exposure: Based on available data, the classification criteria are not met.

STOT – repeated exposure: Based on available data, the classification criteria are not met.

## **Section 12: Ecological Information**

### Acute Toxicity

Acute toxicity of Copper ions was assessed using 451 L(E)C50 values from studies on soluble copper compounds. The lowest species-specific geometric mean reference value of 25.0 µg Cu/L was an L(E)C50 obtained for *Daphnia magna* at pH 5.5 - 6.5 [Van Sprang et al., 2010]. Copper is an essential nutrient regulated by homeostatic mechanisms and does not bio-accumulate. Bio-available Copper ions are rapidly removed from the water column [Rader, 2010].

According to Directive 67/548/EEC:-

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

According to CLP/GHS:-

Aquatic Acute 1 H400: Very toxic to aquatic life, M-factor 1. Aquatic Chronic 2 H412: Harmful to aquatic life with long lasting effects

### Chronic Freshwater Toxicity

Chronic toxicity of copper ions from soluble copper compounds was assessed using 139 NOEC/EC10 values from 27 species representing different trophic levels (fish, invertebrates and algae). Species-specific NOECs were normalised using Biotic Ligand Models and used to derive Species Sensitivity Distributions (SSD) and a lowest HC5 (the median fifth percentile of the SSD) of 7.8 µg dissolved Cu/L. This value is considered to be protective of 90% of EU surface waters and represents a reasonable worst case. Applying an assessment factor of 1, a default chronic freshwater PNEC of 7.8 µg dissolved Cu/L is assigned to assess local risks.

### Chronic Marine Waters Toxicity

Chronic toxicity of copper ions from soluble copper compounds was assessed using 51 NOEC/EC10 values from 24 species representing different trophic levels (fish, invertebrates and algae). Species-specific NOECs were calculated after normalizing to dissolved organic carbon (DOC) and were used to derive SSDs and HC5 values. Normalization at a typical DOC for coastal waters of 2 mg/l resulted in an HC5 of 5.2 µg dissolved Cu/L. Applying an assessment factor of 1, a default chronic marine PNEC of 5.2 µg dissolved Cu/L is assigned to assess local risks.

### Chronic Freshwater Sediment Toxicity

Toxicity of Copper ions from soluble Copper compounds was assessed using 62 NOEC values from 6 benthic species. The NOECs were related to DOC and Acid Volatile Sulphide (AVS) and were used to derive SSDs and HC5 values. An HC5 of 1741 mg Cu/kg OC, corresponding to 87 mg Cu/kg dry weight, was calculated for a low AVS sediment with a default OC of 5%. Applying an assessment factor of 1, a default chronic freshwater sediment PNEC of 87 mg Cu/kg dry weight is assigned to assess local risks.

### Chronic Terrestrial Toxicity

Toxicity of Copper ions from soluble Copper compounds was assessed using 252 NOEC/EC10 values from 28 different species representing different trophic levels (decomposers, primary producers, primary consumers). NOEC values were adjusted to account for differences between lab-spiked soils and field-contaminated soils by the addition of a leaching ageing factor of 2. The adjusted values were then normalized to a range of EU soils using regression bioavailability models and used to derive SSDs and a lowest HC5 value of 65.5 mg Cu/kg dry weight [Oorts et al., 2010]. Applying an assessment factor of 1, a default chronic soil PNEC of 65.5 mg Cu/kg dry weight is assigned.

#### Toxicity to Sewage Treatment Plant micro-organisms

The toxicity of Copper ions from soluble Copper compounds was assessed using NOEC and EC50 values from high quality studies with STP bacteria and protozoa. The NOEC was 0.23 mg Cu/L in the STP [Cha et al., 2004]. Applying an assessment factor of 1, a PNEC of 0.23 mg Cu/L is assigned for Sewage Treatment Plant.

#### Persistence and degradability

Copper ions derived from Copper Oxide cannot be degraded. The fate of Copper ions in the water column was modelled using the Ticket Unit World Model [Rader, 2010]. Removal was also assessed using data from one mesocosm and three field studies. "Rapid" removal was demonstrated, defined as 70% removal within 28 days. Literature data confirm the strong binding of Copper ions to sediment, with the formation of stable Cu-S complexes. Re-mobilization of Copper ions to the water column is therefore not expected. Copper Oxide does not meet the criteria as "persistent"

#### Bio-accumulative potential

The "bio-accumulative" criteria are not applicable to essential metals.

#### Mobility in soil

Copper ions bind strongly to soil. The median water-soil partitioning coefficient (kp) is 2120 l/kg

#### Results of PBT and vPvB assessment

The PBT and vPvB criteria of Annex XIII to the Regulation do not apply to inorganic substances, such as copper and its inorganic compounds. Copper (as Copper Oxide) is not PBT or vPvB.

### **Section 13: Disposal Considerations**

#### Waste treatment methods Waste treatment methods:

Dispose of this material and its container at hazardous or special waste collection point. Dispose in a safe manner in accordance with local/national regulations.

#### Additional information:

Empty packaging can have residues or dusts and are subject to proper waste disposal, as above. Dispose in a safe manner in accordance with local/national regulations.

Ecology - waste materials: See the European waste catalogue.

### **Section 14: Transport Information**

UN No :	UN 3077
UN Proper Shipping Name :	ENVIRONMENTALLY HAZARDOUS SUBSTANCE SOLID, N.O.S – (CONTAINS COPPER OXIDE)
Class:	9
Packing Group:	PG 111
Overland Transport:	IERG No: 47 / Hazchem Code: 2Z

### **Section 15: Regulatory Information**

No REACH Annex XVII restrictions Copper Oxide is not a SEVESO substance, ozone depleting substance, nor a persistent organic pollutant. A chemical safety assessment has been carried out for the substance. A list of full references can be provided upon request. Other regulations, restrictions and prohibition regulations: Not required.

### **Section 16: Other Information**

H400 Very toxic to aquatic life

H410 Very toxic to aquatic life with long lasting effects

H412 Harmful to aquatic life with long lasting effects

R50 Very toxic to aquatic organisms

P273 Avoid release to the environment

P391 Collect spillage

P501 Dispose of contents/containers in accordance with all local. Regional. National and international regulations

S60 This material and its container must be disposed of as hazardous waste

S61 Avoid release to the environment. Refer to special instructions/safets data sheets

N Dangerous for the environment

The information contained in this safety data sheet has been prepared using the best available information, however in view of technical developments, this may alter.

The material must only be used for its stated purpose and the information contained within this data sheet is offered solely for use in the evaluation of this product in respect of safety, health and environmental hazards. Due to the many factors outside our control when using this product, we cannot accept liability for any injury, accident, loss or damage caused through its use.