SAFETY DATA SHEET

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

1.1. Product identifier

Product name: Vcopper™ High Reduction Efficiency
Product code: A00000240

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

Use of the substance: PC21:Laboratory chemicals

1.3. Details of the supplier of the safety data sheet

Supplier: VELP Scientifica srl.
Via Stazione 16, 20865 Usmate (MB) ITALY
TEL: +39 039 628811
FAX: +39 039 6288120
analyticalsupport@velp.it

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Hazard classes and categories
(Reg. 1272/2008): Aquatic Acute 1, Aquatic Chronic 3

Hazard statements
(Reg. 1272/2008): H400; H412

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 (CLP/GHS)

Pictogram

Hazard statement
H400 Very toxic to aquatic life
H412 Very toxic to aquatic life with chronic effect
Precautionary statement:
P273 Avoid release to the environment.
P391 Collect spillage.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

The substance does not meet the criteria for a PBT or vPvB substance in accordance to Regulation EC 1907/2006 -13

SECTION 3: Composition/Information on ingredients

3.2. Mixtures

Chemical name	CAS number:	EC number:	REACH registration number:	Classification
Copper Conc. (% w/w) min 95	7440 – 50 – 8	231 – 159 – 6	01 – 2119480154 – 42 – 000	Aquatic Acute1, Aquatic chronic 3, H400

SECTION 4: First Aid measures

4.1. Description of first aid measures

Inhalation	Move the exposed person to fresh air at once. Perform artificial respiration if necessary. Obtain medical attention as soon as possible.
Ingestion	In case of significant oral intake (several mg Cu), rinse mouth and give 200-300 ml water to drink. Do not induce vomiting. Get medical attention if any discomfort continues.
Skin contact	Wash carefully contaminated skin with soap and warm water. Obtain medical advice if irritation occurs. In case of contact with the molten product, cool rapidly with water and seek immediate medical attention. Do not attempt to remove molten product from skin, because skin tear easily. Cuts or abrasion should be treated promptly with thorough cleansing of the affected area.
Eye contact	Use general measures if eye irritations occur. Do not rub eyes. Remove any contact lenses. Flush eyes thoroughly with water, taking care to rinse under eyelids. If irritation persists continue flushing for 15 minutes, rinsing from time to time under eyelids. If discomfort continues, consult a physician.

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

General information: Gastro-intestinal symptoms are the first symptoms for high oral intakes of soluble copper compounds. Vomiting may occur. The most critical organ for delayed effects from “copper excess” is the liver. Nose-lung irritation may be symptoms occurring after inhalation of fumes/dusts/mists containing copper. Exposure by inhalation of fine powders in large quantities, may produce symptoms called metal fume fever which last 24/48 hours.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor: No specific recommendations. If in doubt, get medical attention promptly.

SECTION 5: Fire fighting

5.1. Extinguish media

Suitable extinguishing media: Dry powder extinguisher class D or dry sand.

DO NOT USE: Do not use water or halogenated extinguishing media.

Particular practice: WARNING: Special attention must be paid to processes and/or systems that might raise clouds of very fine powder likely to be flammable in the presence of primers.

5.2. Special hazards arising from the substance or mixture

Specific hazards: Respirable dust and fume.

5.3. Recommendations for Firefighters

Protective Actions During Firefighting: Advice for fire-fighters: Wear a self-contained breathing apparatus and a fully protective suit and gloves. Dispose of fire debris and contaminated fire-fighting media in accordance with official regulations.

Special protective equipment for firefighters: Wear oxygen or air respirator and suitable safety devices (suit, shoes, hard hat, gloves and glasses).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: protective equipment and emergency procedures

For non-emergency personnel: Avoid formation of dust. Ensure adequate ventilation. Avoid inhalation of dust and fumes. Wear suitable protective equipment

6.2. Environmental precautions

Environmental precautions: Keep product away from sewers, surface and underground waters and from the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Do not use compressed air.
Place in a container for recycling with a small shovel.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Usage precautions: Do not reuse empty vessels before they have been cleaned or reconditioned. Clear up industrial lines and vessels before working with ignition sources. Before making operations of pouring off, assure yourself that inside the tank there aren't residuals of incompatible substances. In the matter of protective devices, consult section No. 8 of this SDS.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions: Covered, dry and naturally-ventilated area.
Avoid placing material on the floor.
Keep away from food, feed and beverages
Keep away vessels from strong oxidizing agents
Powder must be kept dry.
Do not stack more than 3 pallets high (for products packed in drums).
Do not stack more than 1 pallet high (for products packed in big-bags).
The storage of the product in the stockpiling area must avoid soil percolation of accidental spillages.

7.3. Specific end use(s)

Specific end use(s): None

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Ingredient comments:

Exposure pattern	Route	Descriptor	DNEL
Human – long – term – systemic effects	Oral, dermal and inhalation	Internal dose DNEL (Derive No Effect Level) Using adsorption factors of 25% for oral, 100% inhalation (respirable) and 0,03% for dermal exposure routes	0,041 mg Cu/Kg B wt/d
Human – short – term – systemic effects	Oral, dermal and inhalation	Internal dose DNEL (Derive No Effect Level) Using adsorption factors of 25% for oral, 100% inhalation (respirable) and 0,03% for dermal exposure routes	0,082 mg Cu/Kg B wt/d
Human – short – term – systemic effects – drinking water	Oral	A NOAEL for drinking water	4 mg/l

For Denmark, exposure limits are: TLV-TWA (ACGIH, 2009), fumes OEL Cu 0.1 mg/m3
TLV-TWA (ACGIH, 2009), dust and fogs OEL Cu 1 mg/m3

8.2. Exposure controls

Protective equipment

Eye face protection	Use safety glasses (EN 166 1F), do not use contact lenses
Hand protection	Not necessary
Other skin and body protection	Not necessary
Respiratory protection	Filter mask FFP2 (S) for dusts and FFP3 for fumes. Local exhaust fumes ventilation (high efficiency: 90-95%) Cyclones/Filters (to minimize atmospheric emission of dust)

Environmental exposure controls	avoid release to the environment Take precautions against spillage into public sewage or into water channels. Dispose of material and its vessels in hazardous waste collecting area. No smoking, eating or drinking in the work area.

SECTION 9: Physical and Chemical properties

9.1. Information on basic physical and chemical properties

physical state (20°C at 1013 hPa)	Solid. Irregular powder with various granulometry
Colour	Copper red
Odour	Odourless
Odour threshold	Not applicable as odourless
pH	Not applicable to an inorganic solid
melting point	1059-1069°C
Initial boiling point and rage	Not applicable to a solid that melts > 300°C (column 2 of Annex VII of the Reach Regulation)
flash point	Not applicable to an inorganic solid
evaporation rate	Not applicable to an inorganic solid
flammability	Non flammable
upper/lower flammability or explosive limits	Non flammable
vapour pressure	Not applicable to a solid that melts > 300°C (column 2 of Annex VII of the Reach Regulation)
vapour density	Not applicable to an inorganic solid
relative density (g/cm^3)	0.65 – 5.5
specific weight (g/cm^3 at 20°C)	8.78
water solubility	Insoluble – copper needs to be transformed into a copper compound to become soluble. A solubility test (OECD 105) demonstrated a solubility of <1mg Cu/L for a copper powder
partition coefficient n-octanol/water	Not applicable to an inorganic solid
auto-ignition temperature	No auto-ignition
decomposition temperature	Decomposition and/or melting starts at 1,059 °C
viscosity	Not applicable to an inorganic solid
explosive properties	Non explosive. The substance does not contain chemical groups associated with explosive properties

SECTION 10: Stability and Reactivity

10.1. Reactivity

Reactivity: See section 9.

10.2. Chemical stability

Stability: Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reaction: Reaction with H- equivalents releases soluble copper compounds.

10.4. Conditions to avoid

Conditions to avoid: Avoid dust formation and contact with acids.

10.5. Incompatible materials

Materials to avoid: Strong acid

10.6. Hazardous decomposition products

Hazardous decomposition products: The element Cu does not decompose but may be transformed

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Routes of exposure:

Acute oral, dermal and inhalation toxicity:	Oral. LD-50 rats: > 2000 mg/kg body weight. Not classified
Dermal.	Not classified
Inhalation:	Fractions with d50 > 10 µm: Not classified. (Fraction < 10 µm: Harmful by inhalation. LD-50 rats: 1-5 g/m3 air)

Risk of exposure:

STOT single exposure:	Not classified
Skin corrosion/irritation:	Not classified
Respiratory or skin sensitization:	Not classified
Repeated dose toxicity and STOT-RE:	Not classified
Mutagenicity:	Not classified
Carcinogenity:	Not classified
Reproductive toxicity:	Not classified

Only selected registry of toxic effects of chemical substances (rtecs) data is presented here.
See actual entry in rtecs for complete information.

SECTION 12: Ecological Information

12.1. Toxicity

Toxicity:	Toxicity for pH = 5,5-6,5:L (E)C50 of 25.0 µg Cu/L (Van Sprang et al., 2010, in Copper Chemical Safety Report(CSR), 2010). M-factor: 1
Chronic freshwater toxicity:	Not classified.
Predicted No-Effect Concentration (PNEC):	7,8 µg/l is the value of dissolved Cu/l to be used to assess local risks.
Chronic marine waters toxicity: Not classified. PNEC:	5,2 µg/l is the value of dissolved Cu/l to be used to assess local risks.

Chronic freshwater sediment toxicity: PNEC in freshwater sediment is: 87 mg Cu/kg dry sediment weight. It should be used to assess local risks.

Soil toxicity: PNEC in soil is: 65,5 mg Cu/kg dry weight. It should be used to assess local risks.

12.2. Persistence and degradability

Persistence and degradability: Not applicable

12.3. Bioaccumulative potential

Bioaccumulative potential: Not applicable

12.4. Mobility in soil

Mobility: Copper-ions bind strongly to the soil matrix. The binding depends on the soil properties.
A median water-soil partitioning coefficient (Kp) of 2120 L/kg has been derived for soils

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment: The PBT and vPvB criteria of Annex XIII to the REACH Regulation do not apply to inorganic substances, such as copper and its inorganic compounds

12.6. Other adverse effects

Other effects: Copper is not expected to contribute to ozone depletion, ozone formation, global warming

SECTION13: Disposal considerations

13.1. Waste treatment methods

Disposal methods: Disposal procedures according to Reg 2014/13572/UE and to decisions 2008/98/EC, as amended by 2014/955/UE

Product disposal: dispose as hazardous waste, according to in force law. In virtue of the origin of the waste and of its present state, several European Waste Codes (EWC) can be applied.

Packaging disposal: dispose according to in force law. In virtue of the origin of the waste and of its present state, several European Waste Codes (EWC) can be applied

SECTION14: Transport Information

14.1. UN number

UN number: 3077

14.2. Transport Hazard class(es)

9
9
III

14.3. Packing group

9
9

14.4. Environmental hazards

14.5. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15: Regulatory information

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

EU legislation: Safety, health and environmental regulations/legislation specific for the substance.

The substance is NOT subject to: Regulation (EC) n. Regulation (EC) No 2037/2000 of the European Parliament and of the Council of 29 June 2000 on substances that deplete the ozone layer;
Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants;
Regulation (EC) n. 689/2008 of the European Parliament and of the Council of 17 June 2008 concerning the export and import of dangerous chemicals.

15.2. Chemical safety assessment

Chemical Safety Assessment: it has been carried out

SECTION16: Other information

Revision date: 21/08/2024
Revision: A4

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.