

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Copper powder

Revision Date: 8/14/2025

Version: 3

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY / UNDERTAKING

1.1 Product identifier

Product name	Copper powder 25 nm Nanoform 25 nm
Product code	NM-0016
CAS	7440-50-8
EC-Number:	231-159-6
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.

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

Identified uses	Laboratory chemicals, Manufacture of substances
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1.3 Details of the supplier of the safety data sheet

Supplier	IoLiTec Ionic Liquids Technologies GmbH Im Zukunftspark 9 D – 74076 Heilbronn Germany
Telephone	+49 (0)7131-89839-0
Fax	+49 (0)7131-89839-109
Email	msds@iolitec.de

1.4 Emergency telephone number

Emergency telephone	+49 (0)151-41255671
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2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable solids, (Category 1)

Hazardous to the aquatic environment, (Acute Category 1)

M-factor 10

Hazardous to the aquatic environment, (Chronic Category 1)

M-factor 10

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008, GHS)

Pictogram



Signal word

Danger

H-phrases

H228

Flammable solid.

H410

Very toxic to aquatic life with long lasting effects.

P phrases

P210

Keep away from heat/ sparks/ open flames/ hot surfaces. - No smoking.

P240

Ground and bond container and receiving equipment.

P241

Use explosion-proof equipment.

P273

Avoid release to the environment.

P280

Wear protective gloves/ protective clothing/ eye protection/ face protection.

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P370 + P378	In case of fire: Use sand or fire extinguisher class D for extinction.
P391	Collect spillage.
P422	Store contents under inert gas.
P501	Dispose of contents/container in accordance with Local Authority requirements. Recover and reclaim or recycle, if practical. Do not dispose in communal waste water.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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3 COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Copper powder 25 nm

CAS: 7440-50-8

EC-Number: 231-159-6

Ingredient name	Contents	Classification
Copper powder 25 nm	99.5%	Flam. Solid 1, Aq. Acute 1, Aq. Chronic 1

Formula	Molecular Weight
Cu	63.55 g/mol
No components need to be disclosed according to the applicable regulations.	

4 FIRST AID MEASURES

4.1 Description of first aid measures

General

Contaminated clothing should be removed and washed before being reused.

[Contaminated clothing should not be allowed out of the work place.](#)

Inhalation

Move the exposed person to fresh air at once. If respiratory problems, provide artificial respiration/oxygen. [Get medical attention if you feel unwell.](#)

Ingestion

Immediately rinse mouth and provide fresh air. Do not induce vomiting. Get medical attention immediately.

Skin

Wash the skin immediately with soap and water. [Get medical attention if you feel unwell.](#)

Eyes

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Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. [Get medical attention if you feel unwell.](#)

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.

5 FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use: Dry chemical powder. Do not use water.

5.2. Special hazards arising from the substance or mixture

Flammable powder. Emission of toxic fumes under fire conditions possible.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing as combustion may produce hazardous fumes.

6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective clothing and avoid inhalation of vapor, skin or eye contact.

6.2 Environmental precautions

Avoid washing into water courses. Avoid contaminating public drains or water supply.

6.3 Methods and materials for containment and cleaning up

Avoid contact with skin or inhalation of spillage, dust or vapor. Avoid dust formation. Collect and reclaim or dispose in sealed containers in license waste. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate.

6.4 Reference to other sections

For disposal see section 13.

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7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Keep away from heat, sparks and open flame. Do not use in confined spaces without adequate ventilation and/or respirator

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Store at moderate temperatures in dry, well-ventilated area. Air sensitive. Handle and store under inert gas. Chemical storage.

Storage class

Storage class (TRGS 510): LGK 4.1B

Special storage criteria

Store away from oxidizing and acidic materials.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control parameters

Ingredients with workplace control parameters

8.2 Exposure controls

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

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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.

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).

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Physical state	Solid
b) Color	Red/Black
c) Odor	No characteristic odor
d) Melting point/freezing point	1083°C
e) Initial boiling point	2595°C
f) Flammability	Highly flammable
g) Upper/lower explosive limits	no data available
h) Flash point	no data available
i) Autoignition temperature	no data available
j) Decomposition temperature	no data available
k) pH	no data available
l) Kinematic viscosity	no data available

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m) Water solubility	Insoluble
n) Partition coefficient	no data available
o) Vapor pressure	no data available
p) Density	8.940 g/cm ³ at 25°C- lit.
q) Relative vapor density	no data available
r) Particle characteristics	25 nm APS
s) Explosive properties	no data available
t) Oxidizing properties	no data available

9.2 Other safety information

No data available.

10 STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

No particular stability concerns if handled according to specifications.

10.3 Possibility of hazardous reactions

Exothermic reaction with: Ethylene oxide, Fluorine, hydrogen sulphide, halogen-halogen compounds, alkali oxides, nitrides, Salts of hydrazine, Sulfuric acid, Risk of ignition or formation of inflammable gases or vapours with: Oxidizing agents, Chlorine
Risk of explosion with: Acetylene, azides, ammonium compounds, iodates, bromopropane, perchlorates, bromates, picrates, chlorates, Peroxides.

10.4 Conditions to avoid

Avoid contact to strong oxidizers and bases, oxidizing agents, acids.

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Metal oxide fume.

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11 TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes

Acute toxicity

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

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

Potential health effects

Inhalation No data available.

Ingestion No data available.

Skin No data available.

Eyes No data available.

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Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

11.2 Additional Information

Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU)2018/605 at levels of 0.1% or higher.

RTECS:

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12 ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish: LC50 - Oncorhynchus mykiss (rainbow trout) - 0,15 mg/l - 96 h

Remarks: (ECOTOX Database)

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 0,04 - 0,05 mg/l - 48 h

Remarks: (ECOTOX Database)

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

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12.6 Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU)2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available.

13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Contact specialist disposal companies. Dispose of in accordance with Local Authority requirements. Recover and reclaim or recycle, if practical. [Do not dispose in communal waste water.](#)

14 TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 3089

IMDG: 3089

IATA: 3089

14.2 UN proper shipping name

ADR/RID: METAL POWDER, FLAMMABLE, N.O.S. (COPPER)

IMDG: METAL POWDER, FLAMMABLE, N.O.S. (COPPER)

IATA: Metal powder, flammable, n.o.s. (copper)

14.3 Transport hazard class(es)

ADR/RID: 4.1

IMDG: 4.1

IATA: 4.1

14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

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14.5 Environmental hazards

ADR/RID: yes

IMDG: Marine pollutant: yes

IATA: yes

14.6 Special precautions for user

Tunnel restriction code : (D/E)

Further information : No data available.

15 REGULATORY INFORMATION

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

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

15.2 Chemical safety assessment

no data available

Country specific information

Germany

WGK: 3

(Self-Classification)

16 OTHER INFORMATION

DISCLAIMER

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