



Safety Data Sheet

SkySpring Nanomaterials, Inc.

www.ssnano.com

Rev 08/01/2025

1 Identification of substance:

- **Product details:**
- **Product name:** Copper Nanopowder
- **Stock number:** 0811DX
- **Manufacturer/Supplier:**
SkySpring Nanomaterials, Inc.
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2 Hazards identification

- **Classification of the substance or mixture GHS**

Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable solids (Category 1), H228

Short-term (acute) aquatic hazard (Category 1), H400

Long-term (chronic) aquatic hazard (Category 1), H410

- **GHS Label elements, including precautionary statements**



Pictogram

Signal word Danger

Hazard statement(s)

H228 Flammable solid.

H251 Self-heating; may catch fire.

H410 Very toxic to aquatic life with long
lasting effects.

Precautionary statement(s)

P210 Keep away from heat/ sparks/ open flames/

hot surfaces. No smoking.

P235 + P410 Keep cool. Protect from sunlight.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P273 Avoid release to the environment.

P280 Wear protective gloves/ eye protection/ face protection.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

P391 Collect spillage.

P403 + P235 Store in a well-ventilated place. Keep cool.

P407 Maintain air gap between stacks/ pallets.

P420 Store away from other materials.

P501 Dispose of contents/ container to an approved waste disposal plant.

- **Hazards not otherwise classified (HNOC) or not covered by GHS** - none

3 Composition/Data on components:

- **Chemical characterization:**

Description:

(CAS#)

Copper powder (CAS# 7440-50-8): 100%

- **Identification number(s):**
- **EINECS Number:** 231-159-6

4 First aid measures

- **After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.

- **After skin contact**

Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.

- **After eye contact**

Rinse opened eye for several minutes under running water.
Then consult a doctor.

- **After swallowing** Seek immediate medical advice.

5 Fire fighting measures

- **Suitable extinguishing agents**
Special powder for metal fires. Do not use water.
- **For safety reasons unsuitable extinguishing agents** Water
- **Protective equipment:**
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

- **Person-related safety precautions:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources
- **Measures for environmental protection:**
Do not allow material to be released to the environment
without proper governmental permits.
- **Measures for cleaning/collecting:**
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
Keep away from ignition sources.
- **Additional information:**
See Section 7 for information on safe handling
See Section 8 for information on personal protection
equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **Information for safe handling:**
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
- **Information about protection against explosions and fires:**
Keep ignition sources away.
Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

- **Storage**
- **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
- **Information about storage in one common storage facility:**
Do not store together with oxidizing and acidic materials.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection

- **Additional information about design of technical systems:**
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Copper fume, dusts and mists (as Cu)

	mg/m ³
ACGIH TLV	1 (dust, mist); 0.2 (fume)
Austria MAK	1
	0.1 (fume)
Belgium TWA	0.2 (fume); 1 (dust)
Denmark TWA	0.1
Finland TWA	0.2 (fume); 1 (dust)
France VME	0.2 (fume); 1 (dust)
	1; 2-STEL (dust)
Germany MAK	0.1 (fume); 1 (dust)
Hungary TWA	0.2; 0.4-STEL (dust)
Netherlands MAC-TGG	1 (dust)
Norway TWA	0.05
	0.1 (fume)
Poland TWA	0.1; 0.3-STEL (fume)
	1; 2-STEL (dust)
Russia	1-STEL (dust)
Sweden NGV	0.2 (resp. dust); 1 (total dust)
Switzerland MAK-W	0.1; 0.2-KZG-W (fume)
	1; 1-KZG-W
United Kingdom TWA	0.2 (fume)
	1; 2-STEL (dusts and mists as Cu)
	1; 3-STEL

USA PEL

0.1 (fume, dusts & mists)

- **Additional information:** No data
- **Personal protective equipment**
- **General protective and hygienic measures**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
- **Breathing equipment:**
Use suitable respirator when high concentrations are present.
- **Protection of hands:** Impervious gloves
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

9 Physical and chemical properties:

- **General Information**
- **Form:** Powder
- **Color:** Black brown
- **Odor:** Odorless
- | | <u>Value/Range</u> | <u>Unit</u> | <u>Method</u> |
|--|--------------------|-------------|---------------|
|--|--------------------|-------------|---------------|
- **Change in condition**
- **Melting point/Melting range:** 1083 ° C
- **Boiling point/Boiling range:** 2595 ° C
- **Sublimation temperature / start:** Not determined
- **Flash point:** Not applicable
- **Flammability (solid, gaseous)** Highly flammable.

- **Ignition temperature:** Not determined
- **Decomposition temperature:** Not determined
- **Explosion limits:**
- **Lower:** Not determined
- **Upper:** Not determined
- **Vapor pressure:** Not determined
- **Density:** at 20 ° C 8.94 g/cm³
- **Solubility in / Miscibility with**
- **Water:** Insoluble

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**
Decomposition will not occur if used and stored according to specifications.
- **Materials to be avoided:**
Oxidizing agents
Acids
- **Dangerous reactions** Contact with acids releases flammable gases
- **Dangerous products of decomposition:** Toxic metal oxide fume

11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Other information (about experimental toxicology):**
Tumorigenic effects have been observed on tests with laboratory animals.
Reproductive effects have been observed on tests with

laboratory animals.

- **Subacute to chronic toxicity:**

Copper compounds may be irritating to the skin, eyes and respiratory tract. They may cause metal fume fever, hemolysis of the red blood cells and injury to the liver, lungs, kidneys and pancreas. Ingestion may also cause vomiting, gastric pain, dizziness, anemia, cramps, convulsions, shock, coma and death. Copper solutions may cause sensitization reactions.

- **Subacute to chronic toxicity:**

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Gastrointestinal - nausea or vomiting.

Liver - hepatitis (hepatocellular necrosis), zonal

Liver - other changes.

Related to Chronic Data - death.

Kidney, Ureter, Bladder - other changes.

Cardiac - other changes.

Tumorigenic - equivocal tumorigenic agent by RTECS criteria.

Lungs, Thorax, or Respiration - fibrosis, focal (pneumoconiosis).

Lung, Thorax, or Respiration - tumors.

Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).

Reproductive - Specific Developmental Abnormalities - Central Nervous System.

Reproductive - Specific Developmental Abnormalities - musculoskeletal system.

Reproductive - Fertility - pre-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea)

Reproductive - Fertility - post-implantation mortality (e.g. dead/or resorbed implants per total number of implants).

Reproductive - Maternal Effects - uterus, cervix, vagina.

Reproductive - Fertility - female fertility index (e.g. # females pregnant per # sperm positive females; # females pregnant per # females mated)

- **Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

EPA-D: Not classifiable as to human carcinogenicity:

inadequate human and animal evidence of carcinogenicity or no data are available.

12 Ecological information:

- **General notes:**

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations

- **Product:**

- **Recommendation**

Consult state, local or national regulations to ensure proper disposal.

- **Uncleaned packagings:**

- **Recommendation:**

Disposal must be made according to official regulations.

14 Transport information

- **DOT regulations:**

- **Hazard class:** 4.1

- **Identification number:** UN3089

- **Packing group:** II

- **Proper shipping name (technical name):**

Metal powders, flammable, n.o.s.
(copper)

- **Land transport ADR/RID (cross-border)**

- **ADR/RID class:** 4.1 Flammable solids

- **Item:** 13c

- **Danger code (Kemler):** 40

- **UN-Number:** 3089

- **Description of goods:** Metal powders, flammable, n.o.s.
(copper)

- **Maritime transport IMDG:**

- **IMDG Class:** 4.1

- **UN Number:** 3089
- **Packaging group:** II
- **Proper shipping name:** Metal powders, flammable, n.o.s. (copper)
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** 4.1
- **UN/ID Number:** 3089
- **Packaging group:** II
- **Proper shipping name:** Metal powders, flammable, n.o.s. (copper)

15 Regulations

- **Product related hazard informations:**
- **Hazard symbols:**
Xn Harmful F Highly flammable
- **Risk phrases:**
 - 11 Highly flammable.
 - 62 Possible risk of impaired fertility
 - 63 Possible risk of harm to the unborn child
- **Safety phrases:**
 - 7 Keep container tightly closed.
 - 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 - 33 Take precautionary measures against static discharges.
 - 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 - 43 In case of fire, use metallic extinguishing powder. Never use water.
 - 60 This material and its container must be disposed of as hazardous waste.
- **National regulations**
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory.

- **Information about limitation of use:**

For use only by technically qualified individuals.

This product contains copper and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.