



SECTION 1: IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

1.1 Product identifiers

Product Name : ACS Material Copper Nanowire in Water
Brand : ACS Material LLC
CAS-No. : 7440-50-8 (copper), 7789-20-0 (water)

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

Identified uses : Laboratory chemicals, Manufacturing of substances

1.3 Details of the supplier of the safety data sheet

Company : ACS MATERIAL LLC
959 E Walnut St., Suite 100,
Pasadena, CA 91106
Telephone : +1 (866)-227-0656
Fax : +1 (781)-518-0284

1.4 Emergency telephone number

Emergency Phone #: +1 (866)-227-0656

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Flammable liquids (Category 2), H225

Eye irritation (Category 2), H319

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

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Danger

Hazard statement(s)

H400

Very toxic to aquatic life.

Precautionary statement(s)

None

Supplemental Hazard Statements

None



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.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Substance name : Copper Nanowire in Ethanol
CAS-No : 7440-50-8 (copper), 64-17-5 (ethanol)
EC-No. : 231-159-6(copper), 200-578-6 (ethanol)
Synonyms : Copper, Cu

3.2 Mixtures

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

Component	Classification	Concentration
Copper		
CAS-No. 7440-50-8 EC-No. 231-159-6	Flam. Sol. 1; Aquatic Acute 1; Aquatic Chronic 3; H228, H400, H412 M-Factor - Aquatic Acute: 10	>= 10 - < 20 %

For the full text of the H-Statements 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. Move out of dangerous area.

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

Flush eyes with water as a precaution.

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

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**
Nature of decomposition products not known.
- 5.3 Advice for firefighters**
Wear self-contained breathing apparatus for firefighting if necessary.
- 5.4 Further information**
No data available.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures**
Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe area
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**
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**
Suitable extinguishing media
For precautions see section 2.2.
- 7.2 Conditions for safe storage, including any incompatibilities**



Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature 2-8 °C

Air sensitive. Handle and store under inert gas. Do not freeze. Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)

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

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

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.

8.3 Personal protective equipment

Eye/face protection

Face shield and safety glasses 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.

Body Protection

Impervious clothing, flame retardant, antistatic protective 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

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. 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

1) Appearance	Form: red dispersion Colour: red
2) Odour	Odorless
3) Odour Threshold	No data available
4) pH	No data available
5) Melting point/freezing point	Melting point: 1083°C
6) Initial boiling point and boiling range	Boiling point: 2595°C
7) Flash point	No data available
8) Evaporation rate	No data available
9) Flammability (solid, gas)	No data available
10) Upper/lower flammability or explosive limits	No data available
11) Vapour pressure	No data available
12) Vapour density	No data available
13) Relative density	No data available
14) Water solubility	No data available
15) Partition coefficient: n- octanol/water	No data available
16) Auto-ignition temperature	No data available
17) Decomposition temperature	No data available
18) Viscosity	No data available
19) Explosive properties	No data available
20) Oxidizing properties	No data available

9.2 Other safety information

No data available

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

Heat, flames and sparks.



10.5 Incompatible materials

Strong oxidizing agents

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

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

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

Additional Information

RTECS: Not available

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 lead to hemolytic anemia and accelerates arteriosclerosis.

To the best of our knowledge, the chemical, physical, and toxicological properties have not



been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence (Copper).

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

No data available

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

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.

12.6 Other adverse effects

Toxic to aquatic life

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 3089

IMDG: 3089

IATA: 3089

14.2 UN proper shipping name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Copper)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Copper)

IATA: Environmentally hazardous substance, liquid, n.o.s. (Copper)

14.3 Transport hazard class(es)

ADR/RID: 4

IMDG: 4

IATA: 4



14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

14.6 Special precaution for user

No data available

SECTION 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. 453/2010.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

SECTION 16: OTHER INFORMATION

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

H228	Flammable solid.
H400	Very toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

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