#### COPPER

## SAFETY DATA SHEET

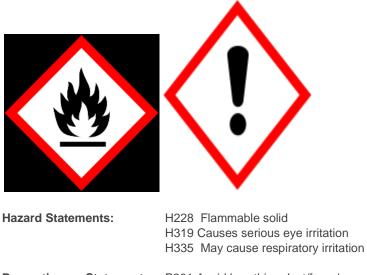
DATE OF LAST REVISION: 0 6/25/15

Section 1: Identification

Product Name: Copper CAS Number: 7440-50-8 / EC Number: 231-159-6 Company: Angstrom Sciences, Inc. 40 South Linden Street Duquesne, PA 15110 For more information call: 412-469-8466 (Monday - Friday 9:00 - 5:00 EST)

## Section 2: HAZARD IDENTIFICATION

Signal Word: Danger



Precautionary Statements:P261 Avoid breathing dust/fume/vapor<br/>P210 Keep away from heat/sparks/open flames/hot surfaces - No smoking<br/>P280 Wear protective gloves/protective clothing/eye protection/face protection<br/>P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.<br/>Remove contact lenses if present and easy to do - continue rinsing<br/>P405 Store locked up<br/>P501 Dispose of contents/container in accordance with local/regional/national/<br/>international regulations

#### HMIS Health Ratings (scale 0-4)

	Powder	Bulk
Health	1	Ο
Flammability	3	0
Physical	1	0

#### COPPER

## SAFETY DATA SHEET

Section 3: Composition

Chemical characterization: Metal CAS# Description: 7440-50-8 Percentage: 100 wt% EC number: 231-159-6

### Section 4: FIRST AID MEASURES

**Eye Contact**: Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

Skin Contact: Wash affected area with mild soap and water.

**Inhalation:** Remove victim to fresh air. If unconscious, place patient stably in side position for transportation.

Ingestion: Seek medical treatment.

General Treatment: Seek medical attention if symptoms persist.

Special Treatment: None

Important Symptoms: None

#### Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing Media: Do not use water for metal fires - use CO2, sand, extinguishing powder

#### Flammability: Flammable as powder only

**Special Fire Fighting Procedure:** Use full-face, self contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

## Section 6: ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill are and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust. **Environmental Precautions:** Isolate runoff to prevent environmental pollution.

### Section 7: HANDLING AND STORAGE

Handling Precautions for safe handling: Wash thoroughly after handling.

**Conditions for safe storage, including any incompatibilities** Store in a cool dry place in a tightly sealed container. Store apart from materials and conditions listed in Section 10.

**Work/Hygienic Maintenance:** Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

Ventilation: Provide sufficient ventilation to maintain concentration at or below threshold limit.

#### Section 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Permissible Exposure Limits: 0.1 mg/m3 as Cu, metal fume, long-term value

1 mg/m<sup>3</sup> as Cu, metal dusts and mists, long-term value

# COPPER SAFETY DATA SHEET

Threshold Limit Value:	0.2 mg/m³ as Cu, metal fume, long-term value	
	1 mg/m <sup>3</sup> as Cu, metal dusts and mists, long-term value	
Special Equipment:	None	
<b>Respiratory Protection:</b>	Dust respirator	
Protective Gloves:	Rubber Gloves	
Eye Protection:	Safety glasses or goggles	
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.	

# Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Color:	Metallic Light Brown
Odor:	Odorless
Water Solubility:	Insoluble
Boiling Point:	N/A
Melting Point:	1083°C
Flash Point:	2562°C
Autoignition Temperature:	N/A
Density:	8.94 g/cc
Molecular Weight:	63.55 g/mol

## Section 10: STABILITY AND REACTIVITY

Reactivity: Chemical Stability: Incompatible Conditions: Hazardous Decomposition Products: Reacts with Acids, Oxidizing agents Stable under recommended storage conditions Protect against electrostatic charges Metal oxide fume, copper oxides

# Section 11: TOXICOLOGICAL INFORMATION

# Potential Health Effects:

Eyes: Causes serious eye damageSkin: May cause irritationIngestion: May cause irritation

Inhalation: May cause irritation

Chronic: N/A

Signs & Symptoms: N/A Aggravated Medical Conditions: N/A

# COPPER

# SAFETY DATA SHEET

Median Lethal Dose: Carcinogen: >5000 mg/kg for mouse by mouth
The Registry of Toxic Effects of Chemical Substances (RTECS)
contains tumorigenic and/or carcinogenic and/or neoplastic
data for this substance.
EPA-D: Not classifiable as to human carcinogenicity: inadequate
human and animal evidence of carcinogenicity or no data available.

### Section 12: ECOLOGICAL INFORMATION

Aquatic Toxicity: Medium

Persistence Bioaccumulation Toxicity: No

Very Persistent, Very Bioaccumulative: No

Notes: May cause long lasting harmful effect on acquatic life. Do not allow material to be released to the

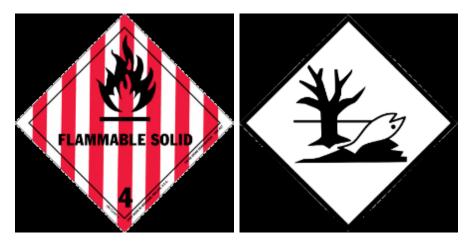
environment without proper governmental permits. Also poisonous for fish and plankton in water bodies. Avoid transfer into the environment. Toxic to aquatic life.

## Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with local, state, national, and international regulations

## Section 14: TRANSPORT INFORMATION

Hazardous: Hazardous as powder only.



Hazard Class:4.1 Flammable solids, self-reactive substances and solid desensitized explosives.Packing Group:IIIUN Number:UN3089Proper Shipping Name:Metal powders, flammable, n.o.s. (Copper Powder)

# COPPER SAFETY DATA SHEET

# Section 15: REGULATORY INFORMATION

Sec 302 Extremely Hazardous:	No
Sec 304 Reportable Quantities:	N/A
Sec 313 Toxic Chemicals:	Yes

## Section 16: OTHER INFORMATION

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.