

## SAFETY DATA SHEET

Replaced version: 2.0.0, issued: 08.09.2021

Region: GB

### 1. Identification

#### 1.1 Product identifier

Trade name

**CopperAlloy CuCrZr**

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

**Relevant identified uses of the substance or mixture**

Copper powder for DMLS processes in EOS M systems

**Uses advised against**

No data available.

#### 1.3 Details of the supplier of the safety data sheet

**Address**

Heeger Materials Inc.  
230 Steele St Denver  
CO 80206  
United States  
Tel: 925-385-8104

**Email:**

sales@heegermaterials.com

#### 1.4 Emergency telephone number

+49 (0) 89 / 893 36 - 0 (8 am - 5 pm)

+49 (0) 89 / 893 36 - 151 (Mo - Thu: 9 am - 12 pm & 1 - 6 pm; Fr: 1 - 4 pm) (CET)

### 2. Hazard(s) identification

#### 2.1 Classification of the substance or mixture

**Classification in accordance with Regulation (EC) No 1272/2008 (CLP)**

Aquatic Acute 1; H400

Aquatic Chronic 2; H411

**Classification information**

This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:

Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP

Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3, 4 and 5 of Annex I to CLP.

#### 2.2 Label elements

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

**Hazard pictograms**



GHS09

**Signal word**

Warning

**Hazard statement(s)**

H410

Very toxic to aquatic life with long lasting effects.

## Precautionary statement(s)

P273	Avoid release to the environment.
P391	Collect spillage.
P501	Dispose of contents/container to a facility in accordance with local and national regulations.

## 2.3 Other hazards

### PBT assessment

The study does not need to be conducted according to Annex XIII of Regulation (EC) 1907/2006 (REACH).

### vPvB assessment

The study does not need to be conducted according to Annex XIII of Regulation (EC) 1907/2006 (REACH).

## 3. Composition/Information on Ingredients

### 3.1 Substances

Not applicable. The product is not a substance.

### 3.2 Mixtures

#### Hazardous ingredients

No	Substance name	Additional information	
	CAS / EC / Index / REACH no	Classification (EC) 1272/2008 (CLP)	Concentration
			%
1	<b>copper</b>		
	7440-50-8 231-159-6 -	Aquatic Acute 1; H400 Aquatic Chronic 2; H411	< 100.00
			wt%
2	<b>chromium</b>		
	7440-47-3 231-157-5 -	-	< 2.50
			wt%

Full Text for all H-phrases and EUH-phrases: pls. see section 16

## 4. First-aid measures

### 4.1 Description of first aid measures

#### General information

Remove contaminated clothing and shoes immediately, and launder thoroughly before reusing. In case of persisting adverse effects, consult a physician. If the patient is likely to become unconscious, place and transport in stable sideways position.

#### After inhalation

Ensure supply of fresh air.

#### After skin contact

When in contact with the skin, clean with soap and water.

#### After eye contact

Remove contact lenses. Rinse eye thoroughly under running water keeping eyelids wide open and protecting the unaffected eye (at least 10 to 15 minutes).

#### After ingestion

Rinse the mouth thoroughly with water. Do not induce vomiting. Never give anything by mouth to an unconscious person.

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

No data available.

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

No data available.

## 5. Fire-fighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Extinguishing powder; Sand; Metal fire powders

#### Unsuitable extinguishing media

Water; Foam; Carbon dioxide

### 5.2 Special hazards arising from the substance or mixture

In the event of fire, the following can be released: Metal oxides

### 5.3 Advice for firefighters

Use self-contained breathing apparatus. Wear protective clothing. Run-off water from fire fighting must not be discharged into drains or enter surface water.

## 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

Refer to protective measures listed in sections 7 and 8. Avoid dust formation. Ensure adequate ventilation.

#### For emergency responders

Personal protective equipment (PPE) - see section 8.

### 6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater. In case of entry into waterways, soil or drains, inform the responsible authorities.

### 6.3 Methods and material for containment and cleaning up

Avoid raising dust. Collect mechanically. Send in suitable containers for recovery or disposal.

### 6.4 Reference to other sections

Information regarding safe handling, see section 7. Information regarding personal protective measures, see section 8. Information regarding waste disposal, see section 13.

## 7. Handling and storage

### 7.1 Precautions for safe handling

#### Advice on safe handling

Provide good ventilation at the work area (local exhaust ventilation, if necessary). Avoid the formation and deposition of dust.

#### General protective and hygiene measures

Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Wash hands before breaks and after work. Do not inhale dust.

#### Advice on protection against fire and explosion

Dust can form an explosive mixture with air. Keep away from sources of heat and ignition. Avoid formation of dust.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Technical measures and storage conditions

Keep container tightly closed in a cool, well-ventilated place.

#### Requirements for storage rooms and vessels

Always keep in containers of same material as the original. Containers which are opened must be carefully closed and kept upright to prevent leakage.

#### Incompatible products

Substances to be avoided, see section 10.

### 7.3 Specific end use(s)

No data available.

## 8. Exposure controls / personal protection

### 8.1 Control parameters

#### Occupational exposure limit values

No	Substance name	CAS no.	EC no.
1	copper	7440-50-8	231-159-6
<b>List of approved workplace exposure limits (WELs) / EH40</b>			
Copper			
fume			
	WEL long-term (8-hr TWA reference period)	0.2	mg/m <sup>3</sup>
<b>List of approved workplace exposure limits (WELs) / EH40</b>			
Copper			
dusts and mists			
Cu			
	WEL short-term (15 min reference period)	2	mg/m <sup>3</sup>
	WEL long-term (8-hr TWA reference period)	1	mg/m <sup>3</sup>
2	chromium	7440-47-3	231-157-5
<b>List of approved workplace exposure limits (WELs) / EH40</b>			
Chromium			
	WEL long-term (8-hr TWA reference period)	0.5	mg/m <sup>3</sup>
<b>2006/15/EC</b>			
Chromium Metal, Inorganic Chromium (II) Compounds and Inorganic Chromium (III) Compounds (insoluble)			
	WEL long-term (8-hr TWA reference period)	2	mg/m <sup>3</sup>
3	Dust		
<b>List of approved workplace exposure limits (WELs) / EH40</b>			
Dust respirable			
	WEL long-term (8-hr TWA reference period)	4	mg/m <sup>3</sup>
	Comments	see Definition 44 "Dust"	
<b>List of approved workplace exposure limits (WELs) / EH40</b>			
Dust inhalable			
	WEL long-term (8-hr TWA reference period)	10	mg/m <sup>3</sup>
	Comments	see Definition 44 "Dust"	

#### DNEL, DMEL and PNEC values

##### DNEL values (worker)

No	Substance name	CAS / EC no		
	Route of exposure	Exposure time	Effect	Value
1	copper	7440-50-8 231-159-6		
	dermal	Long term (chronic)	systemic	137 mg/kg bw/day
	dermal	Short term (acut)	systemic	273 mg/kg bw/day
	inhalative	Long term (chronic)	local	1 mg/m <sup>3</sup>
	inhalative	Short term (acut)	local	1 mg/m <sup>3</sup>

##### DNEL value (consumer)

No	Substance name	CAS / EC no		
	Route of exposure	Exposure time	Effect	Value
1	copper	7440-50-8 231-159-6		
	oral	Long term (chronic)	systemic	0.041 mg/kg bw/day
	dermal	Long term (chronic)	systemic	137 mg/kg bw/day
	dermal	Short term (acut)	systemic	273 mg/kg bw/day
	inhalative	Long term (chronic)	local	1 mg/m <sup>3</sup>
	inhalative	Short term (acut)	local	1 mg/m <sup>3</sup>

##### PNEC values

No	Substance name	CAS / EC no
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	ecological compartment	Type	Value	
1	copper		7440-50-8 231-159-6	
	water	fresh water	7.8	µg/L
	water	marine water	5.2	µg/L
	water	fresh water sediment	87	mg/kg dry weight
	water	marine water sediment	676	mg/kg dry weight
	soil	-	65	mg/kg dry weight
	sewage treatment plant	-	230	µg/L

## 8.2 Exposure controls

### Appropriate engineering controls

Ensure adequate ventilation, local exhaust at the work station if necessary.

### Personal protective equipment

#### Respiratory protection

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. In case of dust formation, take appropriate measures for breathing protection in the event that workplace threshold values are not specified.

Respiratory filter (part): P2-P3

#### Eye / face protection

Tightly fitting safety glasses (EN 166).

#### Hand protection

Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product. Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

Appropriate Material nitrile rubber

#### Other

Chemical-resistant work clothes.

### Environmental exposure controls

No data available.

## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

<b>State of aggregation</b>	solid
<b>Form/Colour</b>	Powder product specific
<b>Odour</b>	No data available
<b>pH value</b>	No data available
<b>Boiling point / boiling range</b>	No data available
<b>Melting point/freezing point</b>	No data available

<b>Decomposition temperature</b>
No data available
<b>Flash point</b>
No data available
<b>Ignition temperature</b>
No data available
<b>Flammability</b>
No data available
<b>Lower explosion limit</b>
No data available
<b>Upper explosion limit</b>
No data available
<b>Vapour pressure</b>
No data available
<b>Relative vapour density</b>
No data available
<b>Relative density</b>
No data available
<b>Density</b>
No data available
<b>Solubility in water</b>
Comments insoluble
<b>Solubility</b>
No data available
<b>Partition coefficient n-octanol/water (log value)</b>
No data available
<b>Viscosity</b>
No data available
<b>Particle characteristics</b>
No data available

## 9.2 Other information

<b>Other information</b>
No data available.

## 10. Stability and reactivity

### 10.1 Reactivity

No data available.

### 10.2 Chemical stability

Stable under recommended storage and handling conditions (See section 7).

### 10.3 Possibility of hazardous reactions

Spontaneously flammable when finely dispersed

### 10.4 Conditions to avoid

Avoid formation of dust. Protect from humid air and water.

### 10.5 Incompatible materials

Acids; Bases; Oxidizing agents; Halogenated compounds

### 10.6 Hazardous decomposition products

No data available.

## 11. Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

<b>Acute oral toxicity</b>
No data available
<b>Acute dermal toxicity</b>
No data available
<b>Acute inhalational toxicity</b>
No data available
<b>Skin corrosion/irritation</b>
No data available
<b>Serious eye damage/irritation</b>
No data available
<b>Respiratory or skin sensitisation</b>
No data available
<b>Germ cell mutagenicity</b>
No data available
<b>Reproduction toxicity</b>
No data available
<b>Carcinogenicity</b>
No data available
<b>STOT - single exposure</b>
No data available
<b>STOT - repeated exposure</b>
No data available
<b>Aspiration hazard</b>
No data available

### 11.2 Information on other hazards

**Endocrine disrupting properties**

No data available.

**Other information**

No data available.

## 12. Ecological information

### 12.1 Toxicity

Toxicity to fish (acute)			
No	Substance name	CAS no.	EC no.
1	copper	7440-50-8	231-159-6
	LC50	0.035	mg/l
	Duration of exposure	96	h
	Species	Danio rerio	
	Method	ISO TC 147/SC 5/WG3 (secretariat 6)	
	Source	ECHA / Read across	
Toxicity to fish (chronic)			
No	Substance name	CAS no.	EC no.
1	copper	7440-50-8	231-159-6
	NOEC	0.023	mg/l

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Duration of exposure	7	day(s)
Species	Pimephales promelas	
Method	OECD 204	
Source	ECHA	

Toxicity to Daphnia (acute)			
No	Substance name	CAS no.	EC no.
1	copper	7440-50-8	231-159-6
EC50	0.034	- 0.792	mg/l
Duration of exposure		48	h
Species	Daphnia magna		
Method	OECD 202		
Source	ECHA		

Toxicity to Daphnia (chronic)			
No	Substance name	CAS no.	EC no.
1	copper	7440-50-8	231-159-6
NOEC		0.032	mg/l
Duration of exposure		7	day(s)
Species	Daphnia magna		
Method	OECD 211		
Source	ECHA		

Toxicity to algae (acute)	
No data available	

Toxicity to algae (chronic)	
No data available	

Bacteria 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

Results of PBT and vPvB assessment	
PBT assessment	The study does not need to be conducted according to Annex XIII of Regulation (EC) 1907/2006 (REACH).
vPvB assessment	The study does not need to be conducted according to Annex XIII of Regulation (EC) 1907/2006 (REACH).

## 12.6 Endocrine disrupting properties

No data available.

## 12.7 Other adverse effects

No data available.

## 12.8 Other information

Other information
Do not discharge into drains or waters and do not dispose of in public landfills.

## 13. Disposal considerations

### 13.1 Waste treatment methods

#### Product

Disposal of the product should be carried out in accordance with all applicable regulations following consultation with the responsible local authority and the disposal company in an authorised and suitable disposal facility.



Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

## Packaging

Residues must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

## 14. Transport information

### 14.1 Transport ADR/RID/ADN

Class	9
Classification code	M7
Packing group	III
Hazard identification no.	90
UN number	UN3077
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Technical name	copper
Tunnel restriction code	-
Label	9
Environmentally hazardous substance mark	Symbol "fish and tree"

### 14.2 Transport IMDG

Class	9
Packing group	III
UN number	UN3077
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Technical name	copper
EmS	F-A, S-F
Label	9
Marine pollutant mark	Symbol "fish and tree"

### 14.3 Transport ICAO-TI / IATA

Class	9
Packing group	III
UN number	UN3077
Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Technical name	copper
Label	9
Environmentally hazardous substance mark	Symbol "fish and tree"

### 14.4 Other information

No data available.

### 14.5 Environmental hazards

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

### 14.6 Special precautions for user

No data available.

### 14.7 Maritime transport in bulk according to IMO instruments

Not relevant

## 15. Regulatory information

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

#### Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain

any substances considered as substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

#### **REACH candidate list of substances of very high concern (SVHC) for authorisation**

According to available data and the information provided by preliminary suppliers, the product does not contain substances that are considered substances meeting the criteria for inclusion in annex XIV (List of Substances Subject to Authorisation) as laid down in Article 57 and article 59 of REACH (EC) 1907/2006.

#### **Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES**

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances subject to restriction as listed in Annex XVII of the REACH regulation (EC) 1907/2006.

#### **Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances**

This product is subject to Part I of Annex I, risk category:

E1

## 15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this mixture.

## 16. Other information

### **Sources of key data used to compile the data sheet:**

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

Directives 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164.

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding section.

### **Full text of the H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)**

H400

Very toxic to aquatic life.

H411

Toxic to aquatic life with long lasting effects.