Trade name: EOS CopperAlloy CuNi30
Product no.: 9030-0018
Current version : 1.0.0, issued: 10.10.2023 **Replaced version:** -, issued: - **Region:** GB

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name

EOS CopperAlloy CuNi30
UFI: E540-A16A-400Y-H9MS

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
Electro Optical Systems Finland Oy
Lemminkäisenkatu 36
20520 Turku
FINLAND

Telephone no. +358 (0) 20 765 9144 / 9147
Fax no. +358 (0) 20 765 9141

Information provided by / telephone
+49 (0) 89 / 893 36 – 0

Advice on Safety Data Sheet
MSDSInfo@eos.info

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)

SECTION 2: Hazards 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
Carc. 2; H351
Skin Sens. 1; H317
STOT RE 1; H372

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


GHS07


GHS08


GHS09

Signal word
Danger

Hazardous component(s) to be indicated on label:
nickel powder; [particle diameter < 1 mm]

Hazard statement(s)

H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P391	Collect spillage.
P501	Dispose of contents/container to a facility in accordance with local and national regulations.

2.3 Other hazards

Dust can form an explosive mixture with air. This product 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.

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).

SECTION 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	**copper**			
	7440-50-8 231-159-6 - 01-2119480154-42	Aquatic Acute 1; H400 Aquatic Chronic 2; H411	>= 50.00 - < 70.00	wt%
2	**nickel powder; [particle diameter < 1 mm]**			
	7440-02-0 231-111-4 028-002-01-4 01-2119438727-29	Aquatic Chronic 3; H412 Carc. 2; H351 Skin Sens. 1; H317 STOT RE 1; H372**	>= 25.00 - < 35.00	wt%

Full Text for all H-phrases and EUH-phrases: pls. see section 16
(*,**,***,****) Detailed explanation pls. refer to CLP regulation No. 1272/2008, annex VI, 1.2

No	Note	Specific concentration limits	M-factor (acute)	M-factor (chronic)
1	-	-	M = 1	-

SECTION 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. In case of allergic symptoms, especially respiratory tract related, seek medical help immediately.

After inhalation
Remove affected persons from dangerous area by observing suitable respiratory protection measures. Ensure supply of fresh air.

After skin contact
After skin contact immediately wash with water and soap and rinse thoroughly.

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.

SECTION 5: Firefighting 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.

SECTION 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
Collect mechanically. When collected, handle material as described under the section heading "Disposal considerations". Avoid raising dust.

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.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Risks inherent to handling the product must be minimised by applying the appropriate protective and preventive measures. Working processes should - so far as possible, according to the state of the art - be designed to rule out bodily contact or the release of hazardous substances.

General protective and hygiene measures
Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Do not inhale dust. Avoid contact with eyes and skin. Wash hands before breaks and after work. Remove contaminated clothing and shoes and launder thoroughly before reusing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Keep container tightly closed and dry in a cool, well-ventilated place.

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

Incompatible products
Substances to be avoided, see section 10.

7.3 Specific end use(s)
No data available.

SECTION 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**
	List of approved workplace exposure limits (WELs) / EH40		
	Copper		
	fume		
	WEL long-term (8-hr TWA reference period)	0.2 mg/m³	
	List of approved workplace exposure limits (WELs) / EH40		
	Copper		
	dusts and mists Cu		
	WEL short-term (15 min reference period)	2 mg/m³	
	WEL long-term (8-hr TWA reference period)	1 mg/m³	
2	**nickel powder; [particle diameter < 1 mm]**	**7440-02-0**	**231-111-4**
	List of approved workplace exposure limits (WELs) / EH40		
	Nickel & its inorganic compounds (except nickel tetracarbonyl): water soluble nickel compounds (as Ni)		
	WEL long-term (8-hr TWA reference period)	0.1 mg/m³	
	Comments	Sk, Carc (nickel oxides and sulphides) Sen (nickel sulphate)	
	List of approved workplace exposure limits (WELs) / EH40		
	Nickel & water insoluble compounds nickel compounds (as Ni)		
	WEL long-term (8-hr TWA reference period)	0.5 mg/m³	
	Comments	Sk, Carc (nickel oxides and sulphides) Sen (nickel sulphate)	

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	Short term (acut)	systemic	273	mg/kg/day
	dermal	Long term (chronic)	systemic	137	mg/kg/day
	inhalative	Long term (chronic)	local	1	mg/m³
	inhalative	Short term (acut)	local	1	mg/m³
2	**nickel powder; [particle diameter < 1 mm]**			**7440-02-0 231-111-4**	

	dermal	Long term (chronic)	local	0.035	mg/cm²
	inhalative	Long term (chronic)	systemic	0.05	mg/m³
	inhalative	Long term (chronic)	local	0.05	mg/m³
	inhalative	Short term (acut)	local	11.9	mg/m³

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/day
	dermal	Short term (acut)	systemic	273	mg/kg/day
	dermal	Long term (chronic)	systemic	137	mg/kg/day
	inhalative	Short term (acut)	local	1	mg/m³
	inhalative	Long term (chronic)	local	1	mg/m³
2	**nickel powder; [particle diameter < 1 mm]**			**7440-02-0 231-111-4**	
	oral	Long term (chronic)	systemic	0.011	mg/kg/day
	oral	Short term (acut)	systemic	0.37	mg/kg/day
	dermal	Long term (chronic)	local	0.035	mg/cm²
	inhalative	Long term (chronic)	systemic	60	ng/m³
	inhalative	Long term (chronic)	local	60	ng/m³
	inhalative	Short term (acut)	local	0.8	mg/m³

PNEC values

No	Substance name		CAS / EC no	
	ecological compartment	Type	Value	
1	**copper**		**7440-50-8 231-159-6**	
	water	fresh water	6.3	µg/L
	water	marine water	5.2	µg/L
	water	fresh water sediment	87	mg/kg
	water	marine water sediment	676	mg/kg
	soil	-	65	mg/kg
	sewage treatment plant	-	230	µg/L
2	**nickel powder; [particle diameter < 1 mm]**		**7440-02-0 231-111-4**	
	water	fresh water	7.1	µg/L
	water	marine water	8.6	µg/L
	water	fresh water sediment	109	mg/kg dry weight
	water	marine water sediment	109	mg/kg dry weight
	soil	-	29.9	mg/kg dry weight
	sewage treatment plant	-	0.33	mg/L
	secondary poisoning	-	0.12	mg/kg food

8.2 Exposure controls

Appropriate engineering controls
Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL (=Occupational Exposure Limit), suitable respiratory protection must be worn.

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. Dust mask; FFP3 (EN 149)

Eye / face protection
Safety glasses with side protection shield (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.

Other
Chemical-resistant work clothes.

Environmental exposure controls
No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

State of aggregation
solid

Form
Powder

Colour
grey

Odour
odourless

pH value
No data available

Boiling point / boiling range
No data available

Melting point/freezing point
No data available

Decomposition temperature
No data available

Flash point
No data available

Ignition temperature
No data available

Flammability
No data available

Lower explosion limit
No data available

Upper explosion limit
No data available

Vapour pressure
No data available

Relative vapour density
No data available

Relative density	
Value	8.86
Source	supplier

Density

No data available

Solubility in water	
Comments	insoluble in water

Solubility
No data available

Partition coefficient n-octanol/water (log value)
No data available

Kinematic viscosity
No data available

Particle characteristics
No data available

9.2 Other information

Other information
No data available.

SECTION 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
Dust can form an explosive mixture with air.

10.4 Conditions to avoid
Avoid formation of dust. Protect from humid air and water.

10.5 Incompatible materials
Acids; Bases; Oxidizing agents

10.6 Hazardous decomposition products
None if stored, handled and transported properly. In case of fire: see section 5.

SECTION 11: Toxicological information

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

Acute oral toxicity				
No	**Substance name**	**CAS no.**		**EC no.**
1	**nickel powder; [particle diameter < 1 mm]**	**7440-02-0**		**231-111-4**
LD50	>	9000		mg/kg bodyweight
Species	rat			
Method	OECD 401			
Source	ECHA			

Acute dermal toxicity
No data available

Acute inhalational toxicity				
No	**Substance name**	**CAS no.**		**EC no.**
1	**copper**	**7440-50-8**		**231-159-6**
LC50	>	5.11		mg/l
Duration of exposure		4		h
State of aggregation	Dust/mist			
Species	rat			
Method	OECD 436			
Source	ECHA			

Evaluation/classification	Based on available data, the classification criteria are not met.

Skin corrosion/irritation			
No	**Substance name**	**CAS no.**	**EC no.**
1	**nickel powder; [particle diameter < 1 mm]**	**7440-02-0**	**231-111-4**
Species	rabbit		
Method	OECD 404		
Source	ECHA		
Evaluation	non-irritant		

Serious eye damage/irritation			
No	**Substance name**	**CAS no.**	**EC no.**
1	**nickel powder; [particle diameter < 1 mm]**	**7440-02-0**	**231-111-4**
Species	rabbit		
Method	OECD 405		
Source	ECHA		
Evaluation	non-irritant		

Respiratory or skin sensitisation			
No	**Substance name**	**CAS no.**	**EC no.**
1	**nickel powder; [particle diameter < 1 mm]**	**7440-02-0**	**231-111-4**
Route of exposure	Skin		
Species	Human		
Source	manufacturer		
Evaluation	sensitizing		
Evaluation/classification	Based on available data, the classification criteria are met.		

Germ cell mutagenicity			
No	**Substance name**	**CAS no.**	**EC no.**
1	**copper**	**7440-50-8**	**231-159-6**
Type of examination	in vitro gene mutation study in bacteria		
Species	Salmonella typhimurium TA98, TA100, TA102, TA1535, TA1537		
Method	OECD 471		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
Route of exposure	oral		
Type of examination	In vivo mammalian somatic cell study: cytogenicity / erythrocyte micronucleus		
Species	mouse		
Method	EU Method B.12		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Reproduction toxicity			
No	**Substance name**	**CAS no.**	**EC no.**
1	**copper**	**7440-50-8**	**231-159-6**
Route of exposure	oral		
Type of examination	Two-Generation Reproduction Toxicity Study		
Species	rat		
Method	OECD 416		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Carcinogenicity
No data available

STOT - single exposure
No data available

STOT - repeated exposure			
No	**Substance name**	**CAS no.**	**EC no.**
1	**nickel powder; [particle diameter < 1 mm]**	**7440-02-0**	**231-111-4**
Route of exposure	oral		

NOAEL	2.2		mg/kg
Species	rat		
Method	OECD 451		
Source	manufacturer		
Evaluation/classification	Based on available data, the classification criteria are met.		

Aspiration hazard
No data available

11.2 Information on other hazards

Endocrine disrupting properties
No data available.

Other information
No data available.

SECTION 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
Duration of exposure		7		day(s)
Species	Pimephales promelas			
Method	OECD 204			
Source	ECHA			
2	**nickel powder; [particle diameter < 1 mm]**	**7440-02-0**		**231-111-4**
NOEC		21.7		mg/l
Duration of exposure		28		day(s)
Species	Cyprinodon variegatus			
Method	ASTM 2004, APHA 1998			
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			
2	**nickel powder; [particle diameter < 1 mm]**	**7440-02-0**		**231-111-4**
NOEC		152.6		µg/l
Duration of exposure		48		h

Species	Dendraster excentricus
Method	ASTM E1563-95
Source	ECHA

Toxicity to algae (acute)			
No	**Substance name**	**CAS no.**	**EC no.**
1	**nickel powder; [particle diameter < 1 mm]**	**7440-02-0**	**231-111-4**

EC50	>	81.5	µg/l
Duration of exposure		72	h
Species	Pseudokirchneriella subcapitata		
Method	OECD 201		
Source	ECHA		

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 product unmonitored into the environment. Do not discharge into drains or waters and do not dispose of in public landfills.

SECTION 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.

SECTION 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

SECTION 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			
The product contains following substance(s) that are considered being subject to REACH regulation (EC) 1907/2006 annex XVII.			
No	**Substance name**	**CAS no.**	**EC no.**	**No**

1	**copper**	**7440-50-8**	**231-159-6**	**75**
2	**nickel powder; [particle diameter < 1 mm]**	**7440-02-0**	**231-111-4**	**27, 75**

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

Other regulations
Adhere to the national sanitary and occupational safety regulations when using this product. Employment restrictions, according to the regulations for protection of expectant and nursing mothers and the youth health and safety regulations, serving to protect against hazardous materials, should be observed.

15.2 Chemical safety assessment

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

SECTION 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.
H412	Harmful to aquatic life with long lasting effects.