

Trade name: EOS Aluminium Al2139AM**Product no.:** 9030-0008**Current version :** 1.0.0, issued: 21.05.2021**Replaced version:****Region:** GB**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade name

EOS Aluminium Al2139AM**1.2 Relevant identified uses of the substance or mixture and uses advised against****Relevant identified uses of the substance or mixture**

Aluminium alloy for DMLS processes in EOSSINT 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 Chronic 3; H412

Water-react. 3; H261

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**

GHS02

Signal word

Warning

Hazard statement(s)

H261

In contact with water releases flammable gases.

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H412	Harmful to aquatic life with long lasting effects.
Precautionary statement(s)	
P231+P232	Handle and store contents under inert gas. Protect from moisture.
P273	Avoid release to the environment.
P370+P378	In case of fire: Use dry sand or metal fire powder to extinguish. Never use water.
P402+P404	Store in a dry place. Store in a closed container.
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).

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	aluminium powder		
	7429-90-5 231-072-3 - 01-2119529243-45	-	88.70 - 90.50 wt%
2	copper		
	7440-50-8 231-159-6 - 01-2119480154-42	Aquatic Acute 1; H400 Aquatic Chronic 2; H411	5.20 - 5.40 wt%
3	zirconium, massive		
	7440-67-7 231-176-9 040-001-00-3 01-2119490102-49	Flam. Sol. 1; H228	> 1.90 wt%

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

No	Note	Specific concentration limits	M-factor (acute)	M-factor (chronic)
3	T	-	-	-

Full text for the notes: pls. see section 16 "Notes relating to the identification, classification and labelling of substances ((EC) No 1272/2008, Annex VI)".

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.

After inhalation

Ensure supply of fresh air.

After skin contact

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

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Remove contact lenses. Rinse eye thoroughly under running water keeping eyelids wide open and protecting the unaffected eye (at least 10 to 15 minutes). Get medical attention if pain still persists.

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; Hydrogen

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

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.

SECTION 7: Handling and storage**7.1 Precautions for safe handling****Advice on safe handling**

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

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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.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Occupational exposure limit values**

No	Substance name	CAS no.	EC no.
1	aluminium powder	7429-90-5	231-072-3
List of approved workplace exposure limits (WELs) / EH40			
Aluminium metal			
total inhalable dust			
	WEL long-term (8-hr TWA reference period)	10	mg/m ³
List of approved workplace exposure limits (WELs) / EH40			
Aluminium metal			
respirable dust			
	WEL long-term (8-hr TWA reference period)	4	mg/m ³
2	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/m ³
List of approved workplace exposure limits (WELs) / EH40			
Copper			
dusts and mists			
Cu			
	WEL short-term (15 min reference period)	2	mg/m ³
	WEL long-term (8-hr TWA reference period)	1	mg/m ³

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 (acute)	systemic	273	mg/kg/day
	dermal	Long term (chronic)	systemic	137	mg/kg/day
	inhalative	Long term (chronic)	local	1	mg/m ³
	inhalative	Short term (acute)	local	1	mg/m ³
2	zirconium, massive			7440-67-7 231-176-9	
	dermal	Long term (chronic)	systemic	2.2	mg/kg/day
	with reference to: Zr				
	inhalative	Long term (chronic)	systemic	5	mg/m ³
	with reference to: Zr				

DNEL value (consumer)

No	Substance name			CAS / EC no	
	Route of exposure	Exposure time	Effect	Value	

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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/m ³
	inhalative	Long term (chronic)	local	1	mg/m ³
2	zirconium, massive			7440-67-7 231-176-9	
	oral	Long term (chronic)	systemic	5.5	mg/kg/day
	with reference to: Zr				
	dermal	Long term (chronic)	systemic	5.5	mg/kg/day
	with reference to: Zr				
	inhalative	Long term (chronic)	systemic	2.5	mg/m ³
	with reference to: Zr				

PNEC values

No	Substance name			CAS / EC no	
	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	
	water	marine water sediment	676	mg/kg	
	soil	-	65	mg/kg	
	sewage treatment plant	-	230	µg/L	
2	zirconium, massive			7440-67-7 231-176-9	
	water	fresh water	0.074	mg/L	
	with reference to: Zr				
	water	marine water	0.0074	mg/L	
	with reference to: Zr				
	water	fresh water sediment	74.6	mg/kg dry weight	
	with reference to: Zr				
	water	marine water sediment	7.5	mg/kg dry weight	
	with reference to: Zr				
	soil	-	7	mg/kg dry weight	
	with reference to: Zr				

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): 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

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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/Colour			
Powder			
silver-grey			
Odour			
odourless			
pH value			
No data available			
Boiling point / boiling range			
No data available			
Melting point/freezing point			
Value	600	- 800	°C
Decomposition temperature			
No data available			
Flash point			
No data available			
Ignition temperature			
No data available			
Auto-ignition temperature			
Comments	Product is not selfigniting.		
Flammability			
No data available			
Lower explosion limit			
Value	30	g/m ³	
Upper explosion limit			
No data available			
Vapour pressure			
No data available			
Relative vapour density			
No data available			
Relative density			
No data available			
Density			
Value	2	- 3.5	g/cm ³
Reference temperature	20		°C
Bulk density			

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Value	0.7 - 1.5 g/cm ³
Solubility in water	
Comments	insoluble
Solubility	
No data available	
Partition coefficient n-octanol/water (log value)	
No data available	
Viscosity	
No data available	
Particle characteristics	
No data available	

9.2 Other information

Other information
smouldering temperature: > 400 °C Minimum ignition energy (MIE) (with inductivity): MIE > 1000 mJ Minimum ignition energy (MIE) (without inductivity): Not determined Burning Class: At 20 °C - ("BZ") and 100 °C - ("BZ") 1

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

danger of dust explosion. Exothermic reactions are possible in the event of contact with incompatible substances.

10.4 Conditions to avoid

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

10.5 Incompatible materials

Water; Acids; Alkalis; Oxidizing agents

10.6 Hazardous decomposition products

No data available.

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	zirconium, massive	7440-67-7	231-176-9
LD50	>	5000	mg/kg bodyweight
Species with reference to	rat ZrO ₂		
Acute dermal toxicity			
No data available			
Acute inhalational toxicity			
No	Substance name	CAS no.	EC no.
1	zirconium, massive	7440-67-7	231-176-9
LC50	>	4.3	mg/l
Duration of exposure		4	h
State of aggregation	Vapour		

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Species with reference to Method	rat ZrO2 OECD 436
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Skin corrosion/irritation
No data available

Serious eye damage/irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Reproduction toxicity
No data available

Carcinogenicity
No data available

STOT - single exposure
No data available

STOT - repeated exposure			
No	Substance name	CAS no.	EC no.
1	zirconium, massive	7440-67-7	231-176-9
Route of exposure		oral	
NOAEL		>	7.085 mg/kg
Duration of exposure		24	h
Species		rat	
Method		OECD 408	

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	

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Toxicity to Daphnia (acute)			
No	Substance name	CAS no.	EC no.
1	copper	7440-50-8	231-159-6
EC50		0.034	0.792
Duration of exposure			48
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
Duration of exposure			7
Species		Daphnia magna	
Method		OECD 211	

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.

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

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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	4.3
Classification code	W2
Packing group	III
Hazard identification no.	423
UN number	UN3208
Proper shipping name	METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.
Technical name	aluminium powder
Tunnel restriction code	E
Label	4.3

14.2 Transport IMDG

Class	4.3
Packing group	III
UN number	UN3208
Proper shipping name	METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.
Technical name	aluminium powder
EmS	F-G, S-N
Label	4.3

14.3 Transport ICAO-TI / IATA

Class	4.3
Packing group	III
UN number	UN3208
Proper shipping name	Metallic substance, water-reactive, n.o.s.
Technical name	aluminium powder
Label	4.3

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

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The product is considered being subject to REACH regulation (EC) 1907/2006 annex XVII.	No 40
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Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances	
This product is not subject to Part 1 or 2 of Annex I.	

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)

H228	Flammable solid.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Notes relating to the identification, classification and labelling of substances and mixtures ((EC) No 1272/2008, Annex VI)

T	This substance may be marketed in a form which does not have the physical hazards as indicated by the classification in the entry in Part 3. If the results of the relevant method or methods in accordance with Part 2 of Annex I of this Regulation show that the specific form of substance marketed does not exhibit this physical property or these physical hazards, the substance shall be classified in accordance with the result or results of this test or these tests. Relevant information, including reference to the relevant test method(s) shall be included in the safety data sheet.
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