

Trade name: EOS CobaltChrome SP2

Product no.: 9011-0018

Current version : 5.0.0, issued: 26.09.2018

Replaced version: 4.1.0, issued: 15.05.2015

Region: GB

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

1.1 Product identifier

Trade name

EOS CobaltChrome SP2

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

Relevant identified uses of the substance or mixture

cobalt-based metal powder for manufacture of dental restorations in EOSINT 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

Address

EOS GmbH - Electro Optical Systems
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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 1; H410

Eye Irrit. 2; H319

Repr. 2; H361f

Resp. Sens. 1; H334

Skin Sens. 1; H317

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.

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2.2 Label elements

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

Hazard pictograms



GHS08



GHS09

Signal word

Danger

Hazardous component(s) to be indicated on label:

cobalt

Hazard statement(s)

H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H361f	Suspected of damaging fertility.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P280	Wear protective gloves/protective clothing/eye protection.
P284	Wear respiratory protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P362+P364	Take off contaminated clothing and wash it before reuse.
P501	Dispose of contents/container to a facility in accordance with local and national regulations.

2.3 Other hazards

PBT assessment
No data available.

vPvB assessment
No data available.

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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	cobalt		
	7440-48-4 231-158-0 027-001-00-9 01-2119517392-44	Skin Sens. 1; H317 Eye Irrit. 2; H319 Resp. Sens. 1; H334 Repr. 2; H361f Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 50.00 - < 70.00 %-b.w.
2	chromium		
	7440-47-3 231-157-5 - -	-	>= 10.00 - < 25.00 %-b.w.
3	palladium		
	7440-05-3 231-115-6 - -	Flam. Sol. 1; H228 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335	< 2.50 %-b.w.
4	tungsten		
	7440-33-7 231-143-9 - -	-	>= 5.00 - < 10.00 %-b.w.
5	SILICON		
	7440-21-3 231-130-8 - -	-	< 2.50 %-b.w.

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

No	Note	Specific concentration limits	M-factor (acute)	M-factor (chronic)
1	-	-	M = 10	-

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

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

After inhalation

Ensure supply of fresh air. Remove affected person from the immediate area. When vapours are intensively inhaled, seek medical help immediately.

After skin contact

Wash off immediately with soap and water.

After eye contact

Remove contact lenses, irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart and seek medical advice.

After ingestion

Call a doctor immediately.

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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

Metal fire powders; Sand

Unsuitable extinguishing media

Water; Foam; Carbon dioxide; Dry chemicals

5.2 Special hazards arising from the substance or mixture

No data available.

5.3 Advice for firefighters

Use self-contained breathing apparatus. Adapt extinguisher and fire-fighting measures to fire in the environment. Wear protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Ensure adequate ventilation. Do not inhale vapours. Avoid dust formation. Refer to protective measures listed in sections 7 and 8.

For emergency responders

No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions

Collect contaminated water / firefighting water separately. Do not discharge into the drains/surface waters/groundwater. Do not discharge into the subsoil/soil.

6.3 Methods and material for containment and cleaning up

Take up mechanically. Avoid raising dust. When picked up, treat material as prescribed under heading "Disposal considerations".

6.4 Reference to other sections

No data available.

SECTION 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).

General protective and hygiene measures

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

Advice on protection against fire and explosion

Dust can form an explosive mixture with air. Take precautionary measures against static charges. Keep away from sources of ignition.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Keep container tightly closed in a well-ventilated place.

Requirements for storage rooms and vessels

No special measures required.

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Advice on storage assembly

Do not store together with: explosive substances

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	cobalt	7440-48-4	231-158-0
List of approved workplace exposure limits (WELs) / EH40			
Cobalt			
	TWA	0.1	mg/m ³
List of approved workplace exposure limits (WELs) / EH40			
Cobalt compounds			
	Co		
	TWA	0.1	mg/m ³
2	chromium	7440-47-3	231-157-5
List of approved workplace exposure limits (WELs) / EH40			
Chromium			
	TWA	0.5	mg/m ³
2006/15/EC			
Chromium Metal, Inorganic Chromium (II) Compounds and Inorganic Chromium (III) Compounds (insoluble)			
	TWA	2	mg/m ³
3	tungsten	7440-33-7	231-143-9
List of approved workplace exposure limits (WELs) / EH40			
Tungsten: soluble			
	STEL	3	mg/m ³
	TWA	1	mg/m ³
List of approved workplace exposure limits (WELs) / EH40			
Tungsten: insoluble			
	STEL	10	mg/m ³
	TWA	5	mg/m ³
4	SILICON	7440-21-3	231-130-8
List of approved workplace exposure limits (WELs) / EH40			
Silicon			
total inhalable dust			
	TWA	10	mg/m ³
List of approved workplace exposure limits (WELs) / EH40			
Silicon			
respirable dust			
	TWA	4	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	cobalt	7440-48-4 231-158-0		
	inhalative	Long term (chronic)	local	40 µg/m ³

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DNEL value (consumer)

No	Substance name			CAS / EC no	
	Route of exposure	Exposure time	Effect	Value	
1	cobalt			7440-48-4 231-158-0	
	oral	Long term (chronic)	systemic	29.8	µg/kg/day
	inhalative	Long term (chronic)	local	6.3	µg/m ³

PNEC values

No	Substance name		CAS / EC no	
	ecological compartment	Type	Value	
1	cobalt		7440-48-4 231-158-0	
	water	fresh water	0.6	µg/L
	water	marine water	2.36	µg/L
	water	fresh water sediment	9.5	mg/kg dry weight
	water	marine water sediment	9.5	mg/kg dry weight
	soil	-	10.9	mg/kg dry weight
	sewage treatment plant	-	0.37	mg/L

8.2 Exposure controls

Appropriate engineering controls

No data available.

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 workplace threshold values are not specified. Respirator with particulate filter (filter cat. P 3)

Eye / face protection

Safety glasses with side protection shield (EN 166)

Hand protection

In case of thermal processing, thermally insulating protective gloves are to be used. 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. In case of intensive contact, wear protective gloves (EN 374).

Other

Wear fully closed clothing. Closed ESD safety footwear (ESD according to EN 61340-4-3 or equivalent).

Environmental exposure controls

No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form/Colour
Powder
grey
Odour
odourless

EC safety data sheet



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Odour threshold	
No data available	
pH value	
No data available	
Boiling point / boiling range	
No data available	
Melting point / melting range	
Value	1250 - 1450 °C
Decomposition point / decomposition range	
No data available	
Flash point	
No data available	
Auto-ignition temperature	
No data available	
Oxidising properties	
not oxidizing	
Explosive properties	
The product does not have explosive properties.	
Flammability (solid, gas)	
not flammable	
Lower flammability or explosive limits	
Not applicable	
Upper flammability or explosive limits	
Not applicable	
Vapour pressure	
No data available	
Vapour density	
No data available	
Evaporation rate	
No data available	
Relative density	
No data available	
Density	
No data available	
Bulk density	
Value	4000 - 5000 kg/m ³

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Solubility in water

No data available

Solubility(ies)

No data available

Partition coefficient: n-octanol/water

No data available

Viscosity

No data available

9.2 Other information

Other information

No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity

Dangerous reactions are not expected if the product is handled according to its intended use.

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Possible hydrogen formation upon contact with acids.

10.4 Conditions to avoid

None, if handled according to intended use.

10.5 Incompatible materials

Acids

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

No	Substance name	CAS no.	EC no.
1	cobalt	7440-48-4	231-158-0
LD50		6171	mg/kg bodyweight
Species	rat		

Acute dermal toxicity

No data available

Acute inhalational toxicity

No	Substance name	CAS no.	EC no.
1	cobalt	7440-48-4	231-158-0
LC50		<	0.05 mg/l
Duration of exposure			4 h
State of aggregation	Dust		
Species	rat		
Method	OECD 436		
Source	ECHA		

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Skin corrosion/irritation			
No	Substance name	CAS no.	EC no.
1	cobalt	7440-48-4	231-158-0
Duration of exposure		15	min
Method		OECD 439	
Source		ECHA	
Evaluation		non-irritant	

Serious eye damage/irritation			
No	Substance name	CAS no.	EC no.
1	cobalt	7440-48-4	231-158-0
Duration of exposure		4	h
Method		OECD 437	
Evaluation		low-irritant	

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 data available			

Aspiration hazard			
No data available			

Delayed and immediate effects as well as chronic effects from short and long-term exposure			
Inhalation of vapours in high concentration may cause metal fume fever and may cause damage of the central nervous system in case of repeated and prolonged exposure. Repeated and prolonged exposure to high dust concentrations may lead to irritation of the respiratory tract. Inhalation of metal-containing dusts may cause acute poisoning, leading to nausea, vomiting and abdominal pain.			

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish (acute)			
No	Substance name	CAS no.	EC no.
1	cobalt	7440-48-4	231-158-0
LC50		1.512	mg/l
Duration of exposure		96	h
Species		Oncorhynchus mykiss	
Method		ASTM	
Source		ECHA	

Toxicity to fish (chronic)			
No	Substance name	CAS no.	EC no.
1	cobalt	7440-48-4	231-158-0
NOEC		0.21	mg/l
Duration of exposure		34	day(s)
Species		Pimephales promelas	
Method		ASTM	
Source		ECHA	

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Toxicity to Daphnia (acute)			
No	Substance name	CAS no.	EC no.
1	cobalt	7440-48-4	231-158-0
EC50		0.605	mg/l
Duration of exposure		48	h
Species		Ceriodaphnia dubia	
Method		USEPA 2002	
Source		ECHA	

Toxicity to Daphnia (chronic)			
No	Substance name	CAS no.	EC no.
1	cobalt	7440-48-4	231-158-0
NOEC		0.00683	mg/l
Duration of exposure		28	day(s)
Species		Hyalella azteca	
Method		OECD 211	
Source		ECHA	

Toxicity to algae (acute)			
No	Substance name	CAS no.	EC no.
1	cobalt	7440-48-4	231-158-0
ErC50		0.144	mg/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	No data available.
vPvB assessment	No data available.

12.6 Other adverse effects

No data available.

12.7 Other information

Other information
Do not discharge product unmonitored into the environment.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

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

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Packaging

Residuals 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	cobalt
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	cobalt
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	cobalt
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 Transport in bulk according to Annex II of Marpol and the IBC Code

Not relevant

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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, PREPARATIONS AND ARTICLES

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances requiring authorisation as listed on 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
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Other regulations

Adhere to the national sanitary and occupational safety regulations when using this product.

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.

EC Directives 2000/39/EC, 2006/15/EC, 2009/161/EU

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 chapter.

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.
H315	Causes skin irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.

Department issuing safety data sheet

UMCO GmbH - D-21107 Hamburg, Georg-Wilhelm-Strasse 187, Tel.: +49(40)555 546 300, Fax: +49(40)555 546 357, e-mail: umco@umco.de

This information is based on our present knowledge and experience.

The safety data sheet describes products with a view to safety requirements.

It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

Alterations/supplements:

Alterations to the previous edition are marked in the left-hand margin.

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Prod-ID 603243