



EOS CobaltChrome RPD

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 06/07/2018

Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Trade name : EOS CobaltChrome RPD
Product code : 9011-0048

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Cobalt-based metal powder for manufacture of dental restorations in EOSINT M systems
Restrictions on use : Not available

1.3. Supplier

Supplier

Electro Optical Systems Finland Oy
Lemminkäisenkatu 36
Turku, 20520 - FINLAND
T +358 (0) 20 765 9144/9147 - F +358 (0) 20 765 9141
MSDSInfo@eos.info - <https://www.eos.info/>

Distributor

CMP Industries LLC, d.b.a. Nobilium
413 North Pearl Street
Albany, 12207 - The United States of America
T 1-518-434-3147 - F 1-518-434-1288
info@nobilium.com - <https://www.nobilium.com/>

1.4. Emergency telephone number

Emergency number : CHEMTREC US: (800) 424-9300
CHEMTREC: +1 703 527-3887 (24h) Transport

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Serious eye damage/eye irritation, Category 2 H319
Respiratory sensitisation, Category 1 H334
Skin sensitisation, Category 1 H317
Germ cell mutagenicity, Category 2 H341
Carcinogenicity, Category 1B H350
Reproductive toxicity, Category 1B H360F
Hazardous to the aquatic environment — Acute Hazard, Category 1 H400
Hazardous to the aquatic environment — Chronic Hazard, Category 1 H410

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labelling

Hazard pictograms (CLP) :



GHS08

GHS09

Signal word (CLP) :

Danger

Hazardous ingredients :

Cobalt

Hazard statements (CLP) :

H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341 - Suspected of causing genetic defects.
H350 - May cause cancer.
H360F - May damage fertility.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.

EOS CobaltChrom RPD

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

P264 - Wash hands, forearms and face thoroughly after handling.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P284 - [In case of inadequate ventilation] wear respiratory protection.
P302+P352 - If on skin: Wash with plenty of water.
P304+P341+P342+P311 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P342+P311 - If experiencing respiratory symptoms: Call a poison center or doctor
P391 - Collect spillage.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Cobalt	(CAS-No.) 7440-48-4	61.8 - 65.8	Eye Irrit. 2, H319 Resp. Sens. 1, H334 Skin Sens. 1, H317 Muta. 2, H341 Carc. 1B, H350 Repr. 1B, H360F Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Chromium	(CAS-No.) 7440-47-3	23.7 - 25.7	Not classified
Manganese	(CAS-No.) 7439-96-5	< 0.1	Not classified

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Obtain emergency medical attention. Rinse mouth. Do NOT induce vomiting.

4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/effects : May cause cancer. Suspected of damaging fertility or the unborn child.

Symptoms/effects after inhalation : May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Symptoms/effects after eye contact : Causes serious eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

EOS CobaltChrome RPD

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Special powder for metal fires. Sand.
Unsuitable extinguishing media : Water spray. Foam. Carbon dioxide (CO₂).

5.2. Specific hazards arising from the chemical

- Fire hazard : Spontaneously flammable when finely dispersed.
Reactivity : The product is stable at normal handling and storage conditions.

5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Use self-contained breathing apparatus when in close proximity to fire. Wear protective clothing.
Protective equipment for firefighters : Do not enter fire area without proper protective equipment, including respiratory protection. Refer to chapter 8.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Ensure adequate ventilation. Do not inhale vapour. Avoid dust formation. Refer to protective measures listed in Sections 7 and 8.

6.1.1. For non-emergency personnel

- Protective equipment : Refer to section 8.
Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
Emergency procedures : Ventilate area.

6.2. Environmental precautions

Notify authorities if liquid enters sewers or public waters. Avoid release to the environment. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Take precautionary measures to prevent the formation of static electricity. Keep away from ignition sources. No smoking.
Precautions for safe handling : Avoid breathing dust/fume/gas/mist/vapours/spray. Do not handle until all safety precautions have been read and understood. Provide adequate ventilation. Do not eat, drink or smoke in areas where product is used.
Hygiene measures : Wash hands, forearms and face thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Store in a well-ventilated place. Keep container tightly closed.
Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Ignition sources. Keep container closed when not in use. Store locked up.
Incompatible products : Explosive substances and articles. Strong bases. Strong acids. Mineral acids. Fluorine (F). Ammonium nitrate (AN). Hydrazine. Performic acid (CH₂O₃). Sulphur. Potassium chlorate.
Incompatible materials : Sources of ignition. Direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Chromium (7440-47-3)		
ACGIH	ACGIH TWA (mg/m ³)	0.5 mg/m ³ (inhalable particulate matter)

EOS CobaltChrome RPD

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Chromium (7440-47-3)		
OSHA	OSHA PEL (TWA) (mg/m ³)	1 mg/m ³
IDLH	US IDLH (mg/m ³)	250 mg/m ³
NIOSH	NIOSH REL (TWA) (mg/m ³)	0.5 mg/m ³
Cobalt (7440-48-4)		
ACGIH	ACGIH TWA (mg/m ³)	0.02 mg/m ³
OSHA	OSHA PEL (TWA) (mg/m ³)	0.1 mg/m ³ (dust and fume)
IDLH	US IDLH (mg/m ³)	20 mg/m ³ (dust and fume)
NIOSH	NIOSH REL (TWA) (mg/m ³)	0.05 mg/m ³ (dust and fume)
Manganese (7439-96-5)		
ACGIH	Local name	Manganese
ACGIH	ACGIH TWA (mg/m ³)	0.02 mg/m ³ (respirable particulate matter) 0.1 mg/m ³ (inhalable particulate matter)
ACGIH	Remark (ACGIH)	CNS impair; A4 (Not classifiable as a Human Carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories)
ACGIH	Regulatory reference	ACGIH 2018
OSHA	OSHA PEL (Ceiling) (mg/m ³)	5 mg/m ³ (fume)
IDLH	US IDLH (mg/m ³)	500 mg/m ³
NIOSH	NIOSH REL (TWA) (mg/m ³)	1 mg/m ³ (fume)
NIOSH	NIOSH REL (STEL) (mg/m ³)	3 mg/m ³

8.2. Appropriate engineering controls

Appropriate engineering controls : Dust must be extracted directly at the point of origin. Use only in well-ventilated areas.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Materials for protective clothing:

Wear suitable protective clothing. safety foot-wear.

Hand protection:

In case of repeated or prolonged contact wear gloves. Chemical resistant PVC gloves (to European standard EN 374 or equivalent). Appropriate material: butyl rubber; nitrile rubber. Gloves must be replaced after each use and whenever signs of wear or perforation appear.

Eye protection:

Chemical goggles. Wear eye glasses with side protection according to EN 166.

Skin and body protection:

Wear suitable coveralls to prevent exposure to the skin. ESD according to EN 61340-4-3 or equivalent.

Respiratory protection:

In case of inadequate ventilation wear respiratory protection. Dust production: dust mask with filter type P3.

Personal protective equipment symbol(s):



EOS CobaltChrome RPD

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Powder
Colour	: Grey
Odour	: Odourless
Odour threshold	: Not applicable
pH	: Not applicable
Melting point	: 1250 - 1450 °C
Freezing point	: Not determined
Boiling point	: Not determined
Flash point	: Not determined
Relative evaporation rate (butylacetate=1)	: Not determined
Flammability (solid, gas)	: Not flammable
Vapour pressure	: Not determined
Relative vapour density at 20 °C	: Not determined
Relative density	: Not determined
Density	: 4000 - 5000 kg/m ³
Solubility	: No data available
Log Pow	: Not applicable
Auto-ignition temperature	: Not determined
Decomposition temperature	: Not applicable
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable
Explosive limits	: Not applicable
Explosive properties	: Not explosive
Oxidising properties	: Not oxidizing

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is stable at normal handling and storage conditions.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

Hydrogen gas may be released in contact with mineral acids.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Ignition sources.

10.5. Incompatible materials

Potassium chlorate. Explosive substances and articles. Strong acid. Strong bases. Mineral acids. Fluorine (F). Ammonium nitrate. Hydrazine. Performic acid (CH₂O₃).

10.6. Hazardous decomposition products

Fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

EOS CobaltChrome RPD

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Chromium (7440-47-3)	
LD50 oral rat	> 5000 mg/kg (OECD TG 420)
Cobalt (7440-48-4)	
LD50 oral rat	6171 mg/kg
LC50 inhalation rat (mg/l)	> 10 mg/l (Exposure time: 1 h)
ATE US (oral)	6171 mg/kg bodyweight
Manganese (7439-96-5)	
LD50 oral rat	9 g/kg
ATE US (oral)	9000 mg/kg bodyweight

Skin corrosion/irritation	: Not classified pH: Not applicable
Serious eye damage/irritation	: Causes serious eye irritation. pH: Not applicable
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Suspected of causing genetic defects. Based on available data, the classification criteria are not met
Carcinogenicity	: May cause cancer.

Chromium (7440-47-3)	
IARC group	3 - Not classifiable
Cobalt (7440-48-4)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicity Program (NTP) Status	Evidence of Carcinogenicity, Reasonably anticipated to be Human Carcinogen
In OSHA Hazard Communication Carcinogen list	Yes

Reproductive toxicity	: May damage fertility or the unborn child.
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified

Chromium (7440-47-3)	
LOAEC (inhalation, rat,dust/mist/fume, 90 days)	>= 4.4 mg/l/6h/day (Derelanko, M. J., W. E. Rinehart, et al., 1999, Toxicol Sci.52: 278-288)
NOAEL (oral, rat, 90 days)	1216 mg/kg bodyweight/day (Ivankovic, S. and R. Preussman, 1975, Food Cosmet Toxicol.13(3): 347-51)

Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/effects	: May cause cancer. Suspected of damaging fertility or the unborn child.
Symptoms/effects after inhalation	: May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Causes serious eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water	: Very toxic to aquatic life with long lasting effects.
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Cobalt (7440-48-4)	
LC50 fish 1	> 100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
NOEC (chronic)	0.003 mg/l (Exposure time: 28-day, reproduction and survival, Daphnia magna)
NOEC chronic crustacea	<= 0.05 mg/l (Exposure time: 21-day, reproduction and survival, Daphnia magna)

EOS CobaltChrome RPD

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

12.2. Persistence and degradability

EOS CobaltChrome RPD	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

EOS CobaltChrome RPD	
Log Pow	Not applicable
Bioaccumulative potential	Not established

Cobalt (7440-48-4)	
BCF fish 1	(no bioaccumulation)

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Additional information : Handle empty containers with care because residual vapours are flammable.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN3077 Environmentally hazardous substances, solid, n.o.s., 9, III

UN-No. (DOT) : UN3077

Proper Shipping Name (DOT) : Environmentally hazardous substances, solid, n.o.s.

Class (DOT) : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140

Packing group (DOT) : III - Minor Danger

Hazard labels (DOT) : 9 - Class 9 (Miscellaneous dangerous materials)



Transport by sea

Transport document description (IMDG) : UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., 9, III, MARINE POLLUTANT

UN-No. (IMDG) : 3077

Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Class (IMDG) : 9 - Miscellaneous dangerous substances and articles

Packing group (IMDG) : III - substances presenting low danger

Air transport

Transport document description (IATA) : UN 3077 Environmentally hazardous substance, solid, n.o.s., 9, III

UN-No. (IATA) : 3077

Proper Shipping Name (IATA) : Environmentally hazardous substance, solid, n.o.s.

Class (IATA) : 9 - Miscellaneous Dangerous Goods

EOS CobaltChrome RPD

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Packing group (IATA)

: III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

Chromium (7440-47-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

CERCLA RQ

5000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm

Cobalt (7440-48-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Manganese (7439-96-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Chromium (7440-47-3)

Listed on the Canadian DSL (Domestic Substances List)

Cobalt (7440-48-4)

Listed on the Canadian DSL (Domestic Substances List)

Manganese (7439-96-5)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Chromium (7440-47-3)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Cobalt (7440-48-4)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Manganese (7439-96-5)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Chromium (7440-47-3)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on Turkish inventory of chemical
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Cobalt (7440-48-4)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
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EOS CobaltChrome RPD

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Manganese (7439-96-5)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Pollutant Release and Transfer Register Law (PRTR Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on Turkish inventory of chemical
Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

Cobalt (7440-48-4)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
Yes	No	No	No		

SECTION 16: Other information

Sources of Key data : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H-statements:

Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Carc. 1B	Carcinogenicity, Category 1B
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Muta. 2	Germ cell mutagenicity, Category 2
Repr. 1B	Reproductive toxicity, Category 1B
Resp. Sens. 1	Respiratory sensitisation, Category 1
Skin Sens. 1	Skin sensitisation, Category 1
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H360F	May damage fertility.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

SDS US (GHS HazCom 2012) Prop 65 Correction

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product