

Trade name: CoCr RM1 (REF 50521)
Product no: REF 50521
Current revision: 1



EC safety data sheet

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

1.1 Product identifier

Trade name CoCr RM1 (REF 50521)

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

Relevant identified uses of the substance or mixture Metal powder for additive layer manufacture.

Uses advised against No data available.

1.3 Details of the supplier of the safety data sheet

Address

BEGO Bremer Goldschlägerei
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Information provided by / telephone

Research & Development Department - Materials, alloys and ceramics; +49/ 421/ 2028 – 130 (Chief Development Officer alloys)

Advice on safety data sheet

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Emergency telephone number

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+49 (0)551 192 40 (Giftinformationszentrum Nord)

Section 2: Hazards identification

2.1 Classification of the substance or mixture

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

Acute Tox. 4; H302 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 Carc. 1B; H350i
Eye Irrit. 2; H319
Repr. 2; H361f
Resp. Sens. 1B; 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.

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

Cobalt

Hazard statements

H302

Harmful if swallowed.

H317

May cause an allergic skin reaction.

H319

Causes serious eye irritation.

H334

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H350i

May cause cancer by inhalation.

H361f

Suspected of damaging fertility.

H410

Very toxic to aquatic life with long lasting effects.

Precautionary statements

P201

Obtain special instructions before use.

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.

P304+P340

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P308+P313

IF exposed or concerned: Get medical advice/attention.

P342+P311. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

P501

Dispose of contents/container to a facility in accordance with local and national regulations.

Supplemental label elements

"Restricted to professional users".

2.3 Other hazards

PBT assessment

The components of this product are not considered to be a PBT.

vPvB assessment

The components of this product are not considered to be a vPvB.

Section 3: Composition/information on ingredients

3.1 Substance

Not applicable. The product is not a substance.

3.2 Mixtures

Hazardous ingredients

No	Substance name	Classification (EC) 1272/2008 (CLP)	Additional information	
	CAS / EC / Index / REACH no		Concentration	%
1	Cobalt			
	7440-48-4 231-158-0 027-001-00-9 01-2119517392-44	Skin Sens. 1; H317 Resp. Sens. 1B; H334 Repr. 2; H361f Carc. 1B; H350i Acute Tox. 4; H302 Eye Irrit. 2; H319 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	> = 30.00 - < 70.00	%-b.w.
2	Chromium			
	7440-47-3 231-157-5 - -	-	> = 10.00 - < 30.00	%-b.w.
3	Tungsten			
	7440-33-7 231-143-9 - 01-2119488910-30	-	> = 5.00 - < 10.00	%-b.w.
4	Silicon			
	7440-21-3 231-130-8 - 01-2119480401-47	-	< 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	-

No	Route, target organ, concrete effect
1	H350i inhalational

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. Remove contaminated clothing and shoes immediately, and launder thoroughly before reusing. If the patient is likely to become unconscious, place and transport in stable sideways position.

After inhalation

Ensure supply of fresh air. Remove affected person from the immediate area. Irregular breathing/no breathing: artificial respiration.

After skin contact

Wash off immediately with soap and water. Consult a doctor if skin irritation persists.

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). In case of irritation consult an ophthalmologist.

After ingestion

Rinse out mouth and give plenty of water to drink. Call a doctor.

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: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media Metal fire powders; sand.

Unsuitable extinguishing media Water; carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Cobalt oxide; chrome oxides.

5.3 Advice for firefighters

Use self-contained breathing apparatus. Wear protective clothing.

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. Ensure adequate ventilation. Avoid dust formation. Use personal protective clothing. Avoid contact with skin, eyes and clothing. Keep away sources of ignition.

For emergency responders

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

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

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 handling

Advice on safe handling

Provide good ventilation at the work area (local exhaust ventilation, if necessary). Product inherent handling risks must be minimised, taking the appropriate measures for protection and preventive actions. The working process should be designed to rule out the release of hazardous substances or skin contact as far it is possible by the state of the art. Avoid the formation and deposition of dust.

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 food, drink and animal feeding stuffs. Do not inhale vapours or dust. Provide eye wash fountain in work area. Have emergency shower available.

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 heat and ignition.

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 the same material as the original one.

Advice on storage assembly

Do not store together with: Acids; Alkalis.

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	Dust		
	List of approved workplace exposure limits (WELs) / EH40		
	Total inhalable dust		
	TWA	10 mg/m ³	
	List of approved workplace exposure limits (WELs) / EH40		
	Respirable dust		
	TWA	4 mg/m ³	
4	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	
5	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 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

DNEL values (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	9.5 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	0.51 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**

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 workplace threshold values are not specified.
Respiratory filter (part): EN 143 - P2/P3.

Eye/face protection

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 workstation 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: Butyl rubber.

Appropriate material: Nitrile butyl rubber.

Other

Protective clothing.

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	
Odour threshold	
No data available	
pH value	
No data available	
Boiling point/boiling range	
No data available	
Melting point/melting range	
Value	1200 – 1550 °C
Decomposition point/decomposition range	
No data available	
Flash point	
No data available	
Auto-ignition temperature	
No data available	
Oxidising temperature	
Not oxidising	
Explosive properties	
This product does not have explosive properties	
Flammability (solid, gas)	
Not flammable	
Lower flammability or explosive limits	
No data available	
Upper flammability or explosive limits	
No data available	
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
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

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

Possible hydrogen formation upon contact with acids.

10.4 Conditions to avoid

Heat, naked flames and other ignition sources.

10.5 Incompatible materials

Acids; Alkalis.

10.6 Hazardous decomposition products

In case of fire: see section 5.

Section 11: Toxicological information**11.1 Information on toxicological effects**

Acute oral toxicity (result of the ATE calculation for the mixture)	
No	Product Name
1	CoCr RM1 (REF 50521)
ATE (Mixture)	889.97
Method	Calculation method according Regulation (EC) No 1272/2008, (CLP), annex I, part 3, section 3.1.3.6.

Acute oral toxicity			
No	Substance name	CAS no.	EC no.
1	Cobalt	7440-48-4	231-158-0
LD50	appr. 550 mg/kg bodyweight		
Species	Rat		
Method	OECD 425		
Source	ECHA		

Acute dermal toxicity			
No	Substance name	CAS no.	EC no.
1	Cobalt	7440-48-4	231-158-0
LD50	> 2000 mg/kg bodyweight		
Species	Rabbit		
Method	OECD 402		

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	4h		
State of aggregation	Dust		
Species	Rat		
Method	OECD 436		
Source	ECHA		

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		4h	
Method		OECD 437	
Evaluation		Low-irritant	

Respiratory or skin sensitisation			
No data available			

Germ cell mutagenicity			
No data available			

Reproductive toxicity			
No	Substance name	CAS no.	EC no.
1	Cobalt	7440-48-4	231-158-0
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are met.	

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 data available			

Toxicity to fish (chronic)			
No data available			

Toxicity to Daphnia (acute)			
No	Substance name	CAS no.	EC no.
1	Cobalt	7440-48-4	231-158-0
EC50		> 100 mg/l	
Duration of exposure		48h	
Species		Daphnia magna	
Method		OECD 202	
Source		ECHA	

Toxicity to Daphnia (chronic)			
No data available			

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 components of this product are not considered to be a PBT.
vPvB assessment	The components of this product are not considered to be a vPvB.

12.6 Other adverse effects

No data available.

12.7 Other information

Do not discharge into drains or waters and do not store on public depositories.

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.

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
Technical name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Danger releasing substance	Cobalt
Tunnel restriction code	E
Label	9
Environmentally hazardous substance mark	Symbol "fish and tree"

14.2 Transport IMDG

Class	9
Packing group	III
UN number	UN3077
Technical name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Danger releasing substance	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
Technical name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Danger releasing substance	Cobalt
Label	9
Marine pollutant mark	Symbol "fish and tree"

14.4 Other information

Not 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 IBC code

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, 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 XIV 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

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)

H400 Very toxic to aquatic life.

Department issuing safety data sheet

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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.

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