

Trade name: CoCr DG1 (REF 50522)  
Product no: REF 50522  
Current revision: 2



## EC safety data sheet

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

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#### 1.1 Product identifier

Trade name CoCr DG1 (REF 50522)

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

Relevant identified uses of the substance or mixture Manufacturing of dental prosthesis in a dental laboratory.

Uses advised against No data available.

#### 1.3 Details of the supplier of the safety data sheet

##### Address

BEGO Bremer Goldschlägerei  
Wilh. Herbst GmbH & Co. KG  
Wilhelm-Herbst-Str. 1  
28359 Bremen

Telephone no. +49/ 421/ 2028 - 0  
Fax no. +49/ 421/ 2028 - 115  
e-mail msds@bego.com

##### Information provided by / telephone

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

##### Advice on safety data sheet

msds@bego.com

##### Emergency telephone number

For medical advice (in German and English):  
+49 (0)551 192 40 (Giftinformationszentrum Nord)

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### Section 2: Hazards identification

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#### 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	<b>Cobalt</b>			
	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	<b>Chromium</b>			
	7440-47-3 231-157-5 - -	-	> = 10.00 - < 30.00	%-b.w.
3	<b>Tungsten</b>			
	7440-33-7 231-143-9 - 01-2119488910-30	-	> = 5.00 - < 10.00	%-b.w.
4	<b>Silicon</b>			
	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.

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### **Section 5: Fire-fighting measures**

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#### **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.

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### **Section 6: Accidental release measures**

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#### **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.

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### **Section 7: Handling and storage**

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#### **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	<b>Cobalt</b>	<b>7440-48-4</b>	<b>231-158-0</b>
	<b>List of approved workplace exposure limits (WELs) / EH40</b>		
	Cobalt		
	TWA	0.1 mg/m <sup>3</sup>	
	<b>List of approved workplace exposure limits (WELs) / EH40</b>		
	Cobalt compounds		
	Co		
	TWA	0.1 mg/m <sup>3</sup>	
2	<b>Chromium</b>	<b>7440-47-3</b>	<b>231-157-5</b>
	<b>List of approved workplace exposure limits (WELs) / EH40</b>		
	Chromium		
	TWA	0.5 mg/m <sup>3</sup>	
	<b>2006/15/EC</b>		
	Chromium Metal, Inorganic Chromium (II) Compounds and Inorganic Chromium (III) Compounds (insoluble)		
	TWA	2 mg/m <sup>3</sup>	
3	<b>Dust</b>		
	<b>List of approved workplace exposure limits (WELs) / EH40</b>		
	Total inhalable dust		
	TWA	10 mg/m <sup>3</sup>	
	<b>List of approved workplace exposure limits (WELs) / EH40</b>		
	Respirable dust		
	TWA	4 mg/m <sup>3</sup>	
4	<b>Tungsten</b>	<b>7440-33-7</b>	<b>231-143-9</b>
	<b>List of approved workplace exposure limits (WELs) / EH40</b>		
	Tungsten: soluble		
	STEL	3 mg/m <sup>3</sup>	
	TWA	1 mg/m <sup>3</sup>	
	<b>List of approved workplace exposure limits (WELs) / EH40</b>		
	Tungsten: insoluble		
	STEL	10 mg/m <sup>3</sup>	
	TWA	5 mg/m <sup>3</sup>	
5	<b>Silicon</b>	<b>7440-21-3</b>	<b>231-130-8</b>
	<b>List of approved workplace exposure limits (WELs) / EH40</b>		
	Silicon		
	Total inhalable dust		
	TWA	10 mg/m <sup>3</sup>	
	<b>List of approved workplace exposure limits (WELs) / EH40</b>		
	Silicon		
	Respirable dust		
	TWA	4 mg/m <sup>3</sup>	

**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 <sup>3</sup>

**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 <sup>3</sup>

**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.

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**Section 9: Physical and chemical properties**


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**9.1 Information on basic physical and chemical properties**

<b>Form/colour</b>	
Powder	
Grey	
<b>Odour</b>	
Odourless	
<b>Odour threshold</b>	
No data available	
<b>pH value</b>	
No data available	
<b>Boiling point/boiling range</b>	
No data available	
<b>Melting point/melting range</b>	
Value	1200 - 1550 °C
<b>Decomposition point/decomposition range</b>	
No data available	
<b>Flash point</b>	
No data available	
<b>Auto-ignition temperature</b>	
No data available	
<b>Oxidising temperature</b>	
Not oxidising	
<b>Explosive properties</b>	
This product does not have explosive properties	
<b>Flammability (solid, gas)</b>	
Not flammable	
<b>Lower flammability or explosive limits</b>	
No data available	
<b>Upper flammability or explosive limits</b>	
No data available	
<b>Vapour pressure</b>	
No data available	
<b>Vapour density</b>	
No data available	
<b>Evaporation rate</b>	
No data available	
<b>Relative density</b>	
No data available	
<b>Density</b>	
No data available	
<b>Bulk density</b>	
Value	4000 - 5000 kg/m <sup>3</sup>
<b>Solubility in water</b>	
No data available	
<b>Solubility(ies)</b>	
No data available	
<b>Partition coefficient: n-octanol/water</b>	
No data available	
<b>Viscosity</b>	
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 DG1 (REF 50522)
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		



<b>Skin corrosion/irritation</b>			
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	

<b>Serious eye damage/irritation</b>			
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	

<b>Respiratory or skin sensitisation</b>			
No data available			

<b>Germ cell mutagenicity</b>			
No data available			

<b>Reproductive toxicity</b>			
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.	

<b>Carcinogenicity</b>			
No data available			

<b>STOT-single exposure</b>			
No data available			

<b>STOT-repeated exposure</b>			
No data available			

<b>Aspiration hazard</b>			
No data available			

<b>Delayed and immediate effects as well as chronic effects from short and long-term exposure</b>			
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

<b>Toxicity to fish (acute)</b>			
No data available			

<b>Toxicity to fish (chronic)</b>			
No data available			

<b>Toxicity to Daphnia (acute)</b>			
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	

<b>Toxicity to Daphnia (chronic)</b>			
No data available			

<b>Toxicity to algae (acute)</b>			
No data available			

<b>Toxicity to algae (chronic)</b>			
No data available			

<b>Bacteria toxicity</b>			
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**

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.

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