

# MATERIAL SAFETY DATA SHEET

## According to (EG) 1907/2006 (REACH)



Versions-No.: 11

Valid from: 11/2017

Replaces version No. 10 from 10/2017

Date of printing: 28.02.2018

**CoCr BioStar**

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### 1. Identification of the Substance / Preparation and Company:

- 1.1 Product identifier  
Tradename: CoCr BioStar
- 1.2 Product details:  
Product form: Cobalt alloy, Dental Continuous casting; or other casting process disc  
Purpose: The production of crowns, bridges and dentures in dentistry
- 1.3 Details of the supplier of the safety data sheet  
Manufacturer/Supplier: ERNST HINRICHS Dental GmbH  
Street / mailbox: Borsigstr. 1  
Country code. / postal code / city: D - 38644 Goslar  
Phone: 0 53 21 / 5 06 24  
Fax: 0 53 21 / 5 08 81  
E-mail / Website: info@hinrichs-dental.de / www.hinrichs-dental.de  
Further information obtainable from: ERNST HINRICHS Dental GmbH
- 1.4 Emergency telephone number  
ERNST HINRICHS Dental GmbH: +49 (0) 53 21 / 5 06 24 - 25 (Mon-Fri. 8 a.m. – 4 p.m.)

### 2. Hazards Identification:

- 2.1 Hazard designation: Not applicable – see section 2.2.  
Information pertaining to particular dangers for man and environment: Due to the calculation procedure of the "General rating principles for the preparation of the EG" in the ultimate version the product is not subject to marking.  
User: Skilled personnel (Dental technicians, dentists)  
Classification system: The classification is in line with the current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.
- 2.2 Hazard warning: The following marking shall not apply to the alloy but only for the processing and treatment may be incurred vapours, fumes and dusts.



Danger

- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H317 May cause an allergic skin reaction.  
H413 May cause long lasting harmful effects to aquatic life.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.

- 2.3 Other hazards in the supply and processing of the alloy: Inhalation of grinding dust, irritation of the skin and eyes.

### 3. Composition / Information on Ingredients:

The information as to risk and precautions given in the chapters 4 to 8, 10 to 12 do not only apply to the product itself, rather to the resulting dust and vapours generated on working with it.

- | 3.1 Chemical composition: |         | Chemical characterization:             |
|---------------------------|---------|--|
| Cobalt Co                 | 50-70 % | CAS-Nr. 7440-48-4<br>EINECS: 231-158-0 |
| Chrom Cr                  | 19-30 % | CAS-Nr. 7440-47-3<br>EINECS: 231-157-5 |
| Silicium Si               | 0-2 %   | CAS-Nr. 7440-21-3<br>EINECS: 231-130-8 |

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### 4. First aid measures:

4.1	General information:	No special measures required.
4.2	Important acute and delayed symptoms and effects:	
	After inhaling:	Fresh air; in case of disorders, please contact a doctor.
	After swallowing:	Rinse out the mouth and drink water afterwards. In case of continuous disorders, a doctor should be consulted.
	After skin contact:	Wash with water and soap.
	After eye contact:	Rinse eyes under running water and consult a doctor.
4.3	Information for the doctor:	Control examination according to the BG-guidelines G39.

### 5. Fire Fighting measures:

5.1	Suitable extinguishing aids:	Use firefighting measures that suit the environment. ABC dry powder, foam or sand. <b>NO WATER!</b>
5.2	Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases:	Metal vapours and metal oxides in the form of smoke and gas. Dusts are self-heating and can catch fire. Spontaneous combustion on contact with air. In contact with water releases flammable gases which may ignite spontaneously.
5.3	Protective equipment:	Only use the specified under 5.1 Extinguishing media. Avoid inhalation of fumes!

### 6. Accidental release measures:

6.1	Person-related safety precautions:	If the effects of fumes dust aerosol: aerosols. Use in the absence of aspiration breathing. Ensure adequate ventilation.
6.2	Measures for environmental protection:	Remains/Dental scrap should be disposed environmentally friendly. Swarf is not allowed to enter drainage system, surface or ground water.
6.3	Measures for cleaning/collecting:	Dry grinding dust by mechanical means or suckers record and disposal in appropriate containers fill, dust generation. Not use compressed air blow not.
6.4	Reference to other sections:	See section 4.ff.

### 7. Handling and Storage:

7.1	Information for safe handling:	Arrange good ventilation / exhaustion at workplace. Prevent formation of dust. During thermal processing or splinter processing Extractors are required on the processing machines.
7.2	Conditions for safe storage, including intolerances:	Only in the original container. The delivery units must be secured against sliding, tilting, rolling and falling.
	Common storage notes:	Not required.
	Storage and container:	Only store in original package. The delivery units need to be protected against sliding, overturning, rolling and falling.
	Further information about storage conditions:	None.
	Storage class:	VCI 13
	Classification according to Ordinal on Industrial Safety and Health:	Deleted
7.3	Specific end uses:	Guarantee batch traceability.

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### 8. Exposure controls / Personal protection:

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- 8.1 To be monitored parameter: Particulate matter limits by TRGS 900  
Limiting and monitoring exposure: Particulate matter MAK 6 mg/m<sup>3</sup>  
1317-35-7 Manganese oxide  
MAK 1 mg/m<sup>3</sup>  
7440-48-4 Cobalt (2, 3,25; TRGS 901-12)  
MAK 0,1 E mg/m<sup>3</sup>  
7440-47-3 Chrome  
AGW 2 E mg/m<sup>3</sup> (1 (I); 10, EU)  
IOELV (EU) 2 mg/m<sup>3</sup> als Cr  
Please note a valid general particulate matter limit values according to TRGS 900
- 8.2 Personal protective equipment: Wear safety shoes.  
Respiratory protection: In case of inadequate ventilation or lack of suction FFP3 mask.  
Protective gloves: At least protection index 2 injection contact recommended, corresponding to more than 30 minutes of permeation time according to EN 374  
Min thickness / gloves = 0.4 mm  
With longer and frequent contact Protective index 6 recommended, according to more than 480 minutes of permeation time according to EN 374  
Min thickness / gloves = 0.7 mm
- Material of gloves:  
- butyl rubber  
- Fluorocarbon rubber (Viton)  
- nitrile  
- Natural rubber (latex)  
- chloroprene rubber  
- Neoprene gloves
- Penetration time of glove material: The exact penetration time for the protective gloves and has to be observed.
- Eye protection: Goggles (DIN EN 175, DIN EN 166)  
Body protection: Light protective clothing  
General protective and hygienic measures: During processing not eat, drink or smoke.  
Wash hands before breaks and after finishing work. Avoid contact with eyes and skin. Dust, smoke, Do not inhale fumes.

### 9. Physical and chemical properties:

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- 9.1 Information on basic physical and chemical properties:  
Tensile strength: ~ 400 - 900 MPa  
Hardness: ~ 270 - 450 HV 10  
Elongation: > 2 - 16%  
Young's modul: ~ 150 - 240 GPa  
density: ~ 8.2 - 8.7 g / cm<sup>3</sup>  
Coefficient of thermal expansion: ~ 14 - 16 (x10<sup>-6</sup>K<sup>-1</sup>)  
Melting point: ~ 1250 - 1420 ° C  
Danger of explosion: Product is not explosive  
pH value: not applicable
- 9.2 Other information:  
Form: Discs  
Colour – product specification: Metallic bright  
Smell: Odourless

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Solubility in / Miscibility with water: Insoluble  
Inflammability: non-flammable

### 10. Stability and Reactivity:

10.1	Reactivity:	Not applicable.
10.2	Chemical stability:	Not applicable.
10.3	Possibility of hazardous reactions:	Not applicable.
10.4	Conditions to avoid:	Not applicable.
10.5	Incompatible materials:	Not applicable.
10.6	Hazardous decomposition products:	No hazardous decomposition products

### 11. Toxicological Information:

11.1	Information on toxicological effects:	The product does not trigger toxic reactions and is not allergenic. Inhalation of dust may result in respiratory irritation. Irritation of the eyes and skin are possible through direct contact with the dust.
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### 12. Ecological Information:

12.1	Acute toxicity:	Results of animal experiments are not known.
12.2	Persistence and degradability:	Not applicable.
12.3	Bioaccumulative potential:	Not known.
12.4	Mobility in soil:	Not applicable.
12.5	Results of PBT and vPvB assessment:	Not known.
12.6	Other adverse effects:	Not known. The product is not subject to classification according to the calculation method of the General Classification guideline for preparations of the European Community in the last version.

### 13. Disposal Considerations:

13.1	Waste treatment Methods:	The disposal of the product does not pose any danger, however, the waste must be disposed of according to national or regional regulations.
	Recommendation: European waste catalogue 06 03 15:	Contact waste material market (alloy) regarding recycling - The waste created when grinding 12 01 01 - Ferrous metal filings and filing
	Contaminated packaging: recommendation:	Contaminated packaging must be disposed of like the product. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

### 14. Transport Information:

14.1	UN number:	-
14.2	UN proper shipping Name:	Not applicable.
14.3	Transport Hazard classes:	Dental alloys are not a dangerous good under transport regulations: - Ground transport ADR/RID und GGVS/GGVE (crossborder/ domestic) - Maritime transport IMDG/GGV sea - Air transport ICAO-TI und IATA-DGR
14.4	Packing Group:	Not applicable.
14.5	Environmental hazards:	See section 13.
14.6	Special precautions:	No special precautions.
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and under IBC Code:	See 14.3

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### 15. Regulatory Information:

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- 15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture:  
Designation according to EC guidelines: The product is not subject to EU-Richtlinien/GefStoffV.  
The usual precautionary measures for handling chemicals should be observed (see section 6.1).  
Klassifikation by Betriebs-sicherheitsverordnung (BetrSichV): Inapplicable.  
Code letter and hazard designation of product: Inapplicable.  
Hazard-determining components of labeling: Inapplicable.
- 15.2 chemical safety assessment: Not applicable.

### 16. Further Information:

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These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

We make no express or implied warranty or guarantee as to the accuracy, reliability or completeness of the information. Persons receiving this information are encouraged by us to not deliver the product to any other than the intended purpose of section 1.2. The user is responsible for compliance with all relevant legal requirements. The product must be used by trained dental technicians who have knowledge of the proper use manner and can therefore be considered responsible for a misuse.

#### 16.1 Relevant H- und P-phrases

- H334 May cause allergy or asthma symptoms or cause breathing difficulties.  
H317 May cause an allergic skin reaction.  
H413 May be harmful to aquatic life with long lasting effects.  
P280 Wear protective gloves/clothes/ eye cover/ facemask  
P260 Do not inhale dust  
P342+P311 If symptoms of the air passages should occur, please contact toxic information centre or doctor.  
P304+P341 Please get fresh air or get into position which makes breathing easier inhaling  
P333+P313 Consult doctor after rash  
P302+P352 IF ON SKIN: Wash with soap and water.

#### 16.2 Abbreviations and Terms:

- ADR: Accord européen sur le transport des marchandises dangereuses par route  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
CLP: Classification Labelling Packaging  
EINECS: European Inventory of Existing Commercial Chemical Substances  
GHS: Globally Harmonized System  
H-Satz: Hazard statement (Gefährdungen)  
IATA: International Air Transport Association  
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)  
ICAO: International Civil Aviation Organization  
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)  
IMDG: International Maritime Code for Dangerous Goods  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
P-Satz: Precautionary statement (Vorsichtsmaßnahmen)

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PBT: Provider Backbone Transport

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

vPvB: very persistent very bioaccumulating