


Safety Data Sheet according to (EG) 1907/2006 (REACH)


1. Identification of substance and company

1.1 Trade name	Zfx™ Cobalt Chromium
1.2 Product details	Cobalt alloy
Product form	disc
Purpose of use	The production of crowns, bridges and dentures in dentistry
1.3 Manufacturer	 Zfx GmbH Kopernikusstr. 15, 85221 Dachau, Germany Tel.: +49 (0)8131 33 244 - 0, Fax: +49 (0)8131 33 244 - 10 info@zfx-dental.com, www.zfx-dental.com
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CE 0123



2. Hazards identification

2.1 Hazard designation	Not applicable – see section 2.2
Information pertaining to particular dangers for men and environment	Due to the calculation procedure of the "General rating principles for the preparation of the EC" 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 GHS - Hazard warning	<div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <p>Danger</p> <p>H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.</p> <p>H317 May cause an allergic skin reaction.</p> <p>H413 May cause long lasting harmful effects to aquatic life.</p> <p>P280 Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>P260 Do not breathe dust/fume/gas/mist/vapours/spray.</p> </div> </div> <p>The following marking shall not apply to the alloy but only for the processing and treatment may be incurred Vapors, fumes and dusts.</p>
2.3 Other hazards in the supply and processing of the alloy	Inhalation of grinding dust, irritation of the skin and eyes.

3. Composition/Data on components

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:		
	Co-Cr-Alloy	Rest	CAS-No.
Cobalt Co	50 – 70 %	7440-48-4	231-158-0
Chrom Cr	19 – 30 %	7440-47-3	231-157-5
Silicon Si	0 – 2 %	7440-21-3	231-130-8

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	In case of the above mentioned complaints contact Internist or ophthalmologist; 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. NO WATER!
5.2 Special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases	Metal vapors 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 store in the original container. The delivery units must be secured against sliding, tilting, rolling and falling.
Common storage notes	Not required
Further information about storage conditions	None
Storage class	VCI 13
Classification according to Ordinal on Industrial Safety and Health	
7.3 Specific end uses	Guarantee batch traceability.

8. Exposure controls and personal protection

8.1 To be monitored parameter	Particulate matter limits by TRGS 900						
8.2 Limiting and monitoring exposure	<ul style="list-style-type: none"> × Particulate matter MAK 6 mg/m³ × 1317-35-7 Manganese oxide × MAK 1 mg/m³ × 7440-48-4 Cobalt (2, 3,25; TRGS 901-12) × MAK 0,1 E mg/m³ × 7440-47-3 Chrome × AGW 2 E mg/m³ (1 (I); 10, EU) × IOELV (EU) 2 mg/m³ als Cr <p>Please note a valid general particulate matter limit values according to TRGS 900.</p>						
Personal protective equipment	<p>Wear safety shoes.</p> <p>Respiratory protection: In case of inadequate ventilation or lack of suction FFP3 mask.</p> <p>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</p> <p>Material of gloves:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">× Butyl rubber</td> <td style="width: 50%;">× Natural rubber (latex)</td> </tr> <tr> <td>× Fluorocarbon rubber (Viton)</td> <td>× Chloroprene rubber</td> </tr> <tr> <td>× Nitrile</td> <td>× Neoprene gloves</td> </tr> </table> <p>Penetration time of glove material: The exact penetration time for the protective gloves and has to be observed.</p> <p>Eye protection: Goggles (DIN EN 175, DIN EN 166)</p> <p>Body protection: Light protective clothing</p>	× Butyl rubber	× Natural rubber (latex)	× Fluorocarbon rubber (Viton)	× Chloroprene rubber	× Nitrile	× Neoprene gloves
× Butyl rubber	× Natural rubber (latex)						
× Fluorocarbon rubber (Viton)	× Chloroprene rubber						
× Nitrile	× Neoprene gloves						
General protective and hygienic measures	During processing do 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

9.1 Information on basic physical and chemical properties

Tensile strength	~ 400 – 900 MPa
Hardnes	~ 270 – 450 HV 10
Elongation	> 2 – 16 %
Young's modul	~ 150 – 240 GPa
Density	~ 8.2 – 8.7 g/cm ³
Coefficient of thermal expansion	~ 14 (x 10 ⁻⁶ K ⁻¹) – 16 (x 10 ⁻⁶ K ⁻¹)
Melting point	~ 1250 – 1420°C
Danger of explosion	Product is not explosive
ph	not applicable

9.2 Other information

Form	Rod, disc, cylinder or varying geometries
Colour – product specification	Metallic bright
Smell	Odorless
Solubility in / Miscibility with water	Unsoluble
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.

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	<p>The disposal of the product does not pose any danger, however, the waste must be disposed of according to national or regional regulations.</p> <p>Recommendation: Contact waste material market (alloy) regarding recycling European waste catalogue 06 03 15: × The waste created when grinding 12 01 01 × Ferrous metal filings and filing</p> <p>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.</p>
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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 (cross-border/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

15. Regulatory information

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).
Classification according to Betriebssicherheitsverordnung (BetrSichV)	inapplicable
Code letter and hazard designation of product	inapplicable
Hazard-determining components of labeling	inapplicable
15.2 Chemical safety assessment	inapplicable

16. Other information

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. Zfx GmbH makes no express or implied warranty or guarantee as to the accuracy, reliability or completeness of the information. Persons receiving this information are encouraged by Zfx GmbH 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 a misuse of responsibility.

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 center 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.

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)
PBT	Provider Backbone Transport
RID	Réglement 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

