

SAFETY DATA SHEET (EC 1907/2006)**Biosil f
Biosil I
Biosil Laserdraht****DeguDent**
A Dentsply Company

Material no.		Version	2.11 / GB
Specification	102935	Revision date	08.12.2014
VA-Nr	01,709,431	Print Date	27.01.2015
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1. Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Trade name	Biosil f Biosil I Biosil Laserdraht
REACH Registration No.:	if available listed in Chapter. 3

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

Relevant applications identified	For dental use only.
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1.3. Details of the supplier of the safety data sheet

Company	DeguDent GmbH Postfach 1364 D-63403 Hanau
Telephone	+49 (0)6181/59-5767
Telefax	+49 (0)6181/59-5879
Email address	SDB.Degudent-DE@dentsply.com

1.4. Emergency telephone number

Emergency information	+49 (0)180 / 23 24-555 (international)
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2. Hazards identification**2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No. 1272/2008 [CLP]**

Respiratory sensitization	Category 1	H334
Skin Sensitisation	Category 1	H317
Hazardous to the aquatic environment - Chronic Hazard	Category 4	H413

Classification as per Directive 67/548/EC or Directive 1999/45/EC

R42/43: May cause sensitization by inhalation and skin contact.
R53: May cause long-term adverse effects in the aquatic environment.

2.2. Label elements**Labelling as per (EU) 1272/2008**

Statutory basis	EU-CLP as per Regulation (EU) No. 1272/2008, Annex VI
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hazard-defining component(s) (GHS)

- cobalt

Symbol(s)



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Signal word	Danger
Hazard statement	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.
Precautionary statement	P280 - Wear protective gloves/protective clothing/eye protection.
Precautionary statement: Prevention	P261 - Avoid breathing dust/fume/gas/mist/vapours/spray. P272 - Contaminated work clothing should not be allowed out of the workplace. P273 - Avoid release to the environment. P285 - In case of inadequate ventilation wear respiratory protection.
Precautionary statement: Reaction	P302 + P352 - IF ON SKIN: Wash with plenty of water/ soap. P304 + P341 - IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention. P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER/doctor. P363 - Wash contaminated clothing before reuse.

2.3. Other hazards

May react forming chromium(VI) compounds when processing thermally.
Possible release of metallic vapors when melted.
Cobalt vapor will be released while processing.
Limited evidence of a carcinogenic effect.
A PBT/vPvB evaluation is not available, since a chemical safety evaluation is not required / has not been carried out.

3. Composition/information on ingredients**Information on ingredients / Hazardous components as per EU-CLP Regulation (EC) No. 1272/2008**

• cobalt	60% - 70%				
CAS-No.	7440-48-4	EC-No.	231-158-0		
Respiratory sensitization				Category 1	H334
Skin Sensitisation				Category 1	H317
Hazardous to the aquatic environment - Chronic Hazard				Category 4	H413
• chromium	25% - 35%				
CAS-No.	7440-47-3	EC-No.	231-157-5		
• molybdenum	3% - 7%				
CAS-No.	7439-98-7	EC-No.	231-107-2		
• Silicium	1% - 5%				
CAS-No.	7440-21-3	EC-No.	215-609-9		

Information on ingredients / Hazardous components as per Directive 67/548/EC or Directive 1999/45/EC

• cobalt	60% - 70%			
CAS-No.	7440-48-4	EC-No.	231-158-0	
	R42/43			

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R53			
• chromium		25% - 35%	
CAS-No.	7440-47-3	EC-No.	231-157-5
• molybdenum		3% - 7%	
CAS-No.	7439-98-7	EC-No.	231-107-2
• Silicium		1% - 5%	
CAS-No.	7440-21-3	EC-No.	215-609-9

Texts of H phrases, see in Chapter 16
See chapter 16 for text of risk phrases

4. First aid measures**4.1. Description of first aid measures****Inhalation**

Remove to fresh air.
If symptoms persist, call a physician.

Skin contact

Wash off with soap and water.
In the case of skin irritation or allergic reactions see a physician.

Eye contact

Rinse with plenty of water.
If eye irritation persists, consult a specialist.

Ingestion

Clean mouth with water and drink afterwards plenty of water.
Consult a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed**Symptoms**

None known

Hazards

None known

4.3. Indication of any immediate medical attention and special treatment needed

None known

5. Fire-fighting measures**5.1. Extinguishing media**

Suitable extinguishing media: special powder against metal fire
quenching powder
dry sand
common salt

Unsuitable extinguishing media: Water
carbon dioxide (CO₂)

5.2. Special hazards arising from the substance or mixture

Can be released in case of fire: cobalt oxide.

5.3. Advice for firefighters

The product itself does not burn.
Prevent fire extinguishing water from contaminating surface water or the ground water system.
In the event of fire, wear self-contained breathing apparatus.

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6. Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Avoid dust formation.
Avoid breathing dust.
In case of dust being formed, provide for adequate extraction.
Ensure suitable suction/aeration at the work place and with operational machinery.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Use mechanical handling equipment.
Avoid dust formation.
Fill into marked, sealable containers.

6.4. Reference to other sections

Wear personal protective equipment; see section 8.
Disposal considerations; see section 13.

7. Handling and storage**7.1. Precautions for safe handling**

In case of melting, soldering or grinding:
Local ventilation.
Avoid dust formation.
In case of dust or vapor: Wear personal safety equipment
Dusts and vapors: Do not inhale.

7.2. Conditions for safe storage, including any incompatibilities**Storage**

No special storage conditions required.

German storage class

13 - Non Combustible Solids

7.3. Specific end use(s)

We are unaware of any specific end uses which go beyond the data reported in Section 1.

8. Exposure controls/personal protection**8.1. Control parameters**

• cobalt			
CAS-No.	7440-48-4	EC-No.	231-158-0
Control parameters	0.1 mg/m ³		Time Weighted Average (TWA):(EH40 WEL)
• chromium			
CAS-No.	7440-47-3	EC-No.	231-157-5
Control parameters	0.5 mg/m ³		Time Weighted Average (TWA):(EH40 OES)
Control parameters	0.05 mg/m ³		Time Weighted Average (TWA):(EH40 MEL)
Control parameters	4 mg/m ³		Time Weighted Average (TWA):(EH40 (UK))
type of exposure	Respirable dust.		
Control parameters	10 mg/m ³		Time Weighted Average (TWA):(EH40 (UK))
type of exposure	Total inhalable dust.		
Control parameters	0.5 mg/m ³		Time Weighted Average (TWA):(EH40 WEL)
Control parameters	2 mg/m ³		Time Weighted Average (TWA):(EU ELV)
	Indicative		

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• molybdenum			
CAS-No.	7439-98-7	EC-No.	231-107-2
Control parameters	10 mg/m3		Time Weighted Average (TWA):(EH40 WEL)
Control parameters	20 mg/m3		Short Term Exposure Limit (STEL):(EH40 WEL)
• Silicium			
CAS-No.	7440-21-3	EC-No.	215-609-9
Control parameters	4 mg/m3		Time Weighted Average (TWA):(EH40 (UK))
type of exposure	Respirable dust.		
Control parameters	10 mg/m3		Time Weighted Average (TWA):(EH40 (UK))
type of exposure	Total inhalable dust.		
Control parameters	10 mg/m3		Time Weighted Average (TWA):(EH40 WEL)
type of exposure	Inhalable dust.		
Control parameters	4 mg/m3		Time Weighted Average (TWA):(EH40 WEL)
type of exposure	Respirable dust.		

8.2. Exposure controls**Engineering measures**

Cobalt vapor will be released while processing.

Adequate exhaustion / ventilation of the work site or machinery must be assured. Vacuuming of objects.

Personal protective equipment**Respiratory protection**

In case of working with / without sufficient object exhaustion:

Respirator with P3 particle filter

Hand protection

protective gloves

Glove material butyl-rubber, nitrile rubber, Natural Rubber/Natural latex (NR)

Eye protection

Safety glasses with side-shields

In case of smoke or dust development: goggles

Skin and body protection

If cobalt - vapour occurs: Change contaminated clothing.

Apply adequate skin protection agents before handling the product. Assure skin cleaning and skin care after work. Preventive skin protection is recommended.

Hygiene measures

If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used.

Do not eat, drink, smoke, or sniff while at work. Wash your hands and/or face before breaks and before termination of work.

Do not inhale smoke, dust, vapor.

If workplace exposure limits are exceeded and/or larger amounts are released (leakage, spilling, dust) the indicated respiratory protection should be used.

9. Physical and chemical properties**9.1. Information on basic physical and chemical properties****Appearance**

Form	solid
Colour	white

Odour	odourless
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Melting point/range	1290 - 1390 °C
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Density 8.2 - 8.4 g/cm³

Autoinflammability Not capable of spontaneous combustion or heating.

9.2. Other information

Other information No further physicochemical data were determined.

10. Stability and reactivity**10.1. Reactivity**

no data available

10.2. Chemical stability

The product is chemically stable.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions No dangerous reactions known.

10.4. Conditions to avoid

No limitations

10.5. Incompatible materials

None known

10.6. Hazardous decomposition productsDecomposition products occurring when heated above melting temperature
metallic vapors**11. Toxicological information****11.1. Information on toxicological effects**

Acute oral toxicity no data available

Acute inhalation toxicity no data available

Acute dermal toxicity no data available

Skin irritation no data available

Eye irritation no data available

Sensitization no data available

Repeated dose toxicity no data available

Mutagenicity assessment no data available

Carcinogenicity No data available

Toxicity to reproduction No data available

Human experience Toxic effects from handling this product are unknown as yet.
The solubility of the alloy is extremely low. It must therefore be assumed that the daily uptake of these elements is considerably exceeds that from the alloy.
As a constituent of vitamin B12 cobalt is an essential element of the human body .

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Molybdenum is an essential element of the human body.
The daily dietary uptake of chromium amounts to several milligrams.
The data are derived from reference books and literature.

Further information

No hazardous reactions are known if properly handled and stored.
Cobalt (dusts and vapours):
Clues to possible carcinogenic effects in animal experiments. literature

12. Ecological information**12.1. Toxicity**

No ecotoxicological data is available for this product.

12.2. Persistence and degradability

Biodegradability no data available

12.3. Bioaccumulative potential

Bioaccumulation no data available

12.4. Mobility in soil

Mobility The product is insoluble in water.
No further information available

12.5. Results of PBT and vPvB assessment

A PBT/vPvB evaluation is not available, since a chemical safety evaluation is not required / has not been carried out.

12.6. Other adverse effects

Further Information Dusts and water-soluble forms of the alloy:
Introduction into soil, natural water bodies or sewerage must be prevented.

13. Disposal considerations**13.1. Waste treatment methods****Product**

Disposal according to local authority regulations.

Uncleaned packaging

Disposal according to local authority regulations.

14. Transport information

Not dangerous according to transport regulations.

14.1. UN number:	--
14.2. UN proper shipping name:	--
14.3. Transport hazard class(es):	--
14.4. Packing group:	--

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- 14.5. Environmental hazards: --
14.6. Special precautions for user: No

15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National legislation

15.2. Chemical safety assessment

Chemical safety assessment No Chemical Safety Report as per Articles 2(8), 2(9) or 14 of the REACH Regulation is required for this product.

16. Other information

Risk phrase (R phrase) texts

- **cobalt**

R42/43 May cause sensitization by inhalation and skin contact.
R53 May cause long-term adverse effects in the aquatic environment.

Texts of the H-phrases

- **cobalt**

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.

Further information

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

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Legend

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ASTM	American Society for Testing and Materials
ATP	Adaptation to Technical Progress
BCF	Bioconcentration factor
BetrSichV	German Ordinance on Industrial Safety and Health
c.c.	closed cup
CAS	Chemical Abstract Services
CESIO	European Committee of Organic Surfactants and their Intermediates
ChemG	German Chemicals Act
CMR	carcinogenic-mutagenic-toxic for reproduction
DIN	German Institute for Standardization
DMEL	Derived minimum effect level
DNEL	Derived no effect level
EINECS	European Inventory of Existing Commercial Chemical Substances
EC50	half maximal effective concentration
GefStoffV	German Ordinance on Hazardous Substances
GGVSEB	German ordinance for road, rail and inland waterway transportation of dangerous goods
GGVSee	German ordinance for sea transportation of dangerous goods
GLP	Good Laboratory Practice
GMO	Genetic Modified Organism
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
ISO	International Organization For Standardization
LOAEL	Lowest observed adverse effect level
LOEL	Lowest observed effect level
NOAEL	No observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
o. c.	open cup
OECD	Organisation for Economic Cooperation and Development
OEL	Occupational Exposure Limit
PBT	Persistent, bioaccumulative, toxic
PEC	Predicted effect concentration
PNEC	Predicted no effect concentration
REACH	REACH registration
RID	Convention concerning International Carriage by Rail
STOT	Specific Target Organ Toxicity
SVHC	Substances of Very High Concern
TA	Technical Instructions
TPR	Third Party Representative (Art. 4)
TRGS	Technical Rules for Hazardous Substances
VCI	German chemical industry association
vPvB	very persistent, very bioaccumulative
VOC	volatile organic compounds
VwVwS	German Administrative Regulation on the Classification of Substances Hazardous to Waters into Water Hazard Classes
WGK	Water Hazard Class
WHO	World Health Organization