

SAFETY DATA SHEET (EC 1907/2006)**Duceralloy C**

Material no.		Version	2.4 / GB
Specification	149808	Revision date	22.11.2011
VA-Nr	01628707	Print Date	02.12.2011
		Page	1 / 8

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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**Product information**

Trade name	Duceralloy C
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
Emergency telephone number	+49 (0)180 / 23 24-555

Use of the Substance / Preparation For dental use only.

REACH Registration No.: if available listed in Chapter. 3

2. HAZARDS IDENTIFICATION**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

GHS-Labeling**hazard-defining component(s) (GHS)**

- cobalt

Symbol(s)



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 soap and water.
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 or doctor/physician.
P363 - Wash contaminated clothing before reuse.

Supplemental hazard / labelling elements (EU):

May react forming chromium(VI) compounds when processing thermally.

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Material no.		Version	2.4 / GB
Specification	149808	Revision date	22.11.2011
VA-Nr	01628707	Print Date	02.12.2011
		Page	2 / 8

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

In accordance with Directive 1999/45/EC, the product does not need to be classified nor labelled.

Other Hazards

May react forming chromium(VI) compounds when processing thermally.
May release metal vapours when melting.

cobalt - vapour is released during processing.
Limited evidence of a carcinogenic effect.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Information on ingredients / Hazardous components As per EU-CLP Ordinance (EC) No. 1272/2008**

• cobalt			59.4%		
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			24.5%		
CAS-No.	7440-47-3	EC-No.	231-157-5		
• tungsten			10.0%		
CAS-No.	7440-33-7	EC-No.	231-143-9		
• Niobium			2.0%		
CAS-No.	7440-03-1	EC-No.	231-113-5		
• Vanadium			2.0%		
CAS-No.	7440-62-2	EC-No.	231-171-1		
• molybdenum			1.0%		
CAS-No.	7439-98-7	EC-No.	231-107-2		
• Silicium			1.0%		
CAS-No.	7440-21-3	EC-No.	215-609-9		
• iron			0.1%		
CAS-No.	7439-89-6	EC-No.	231-096-4		

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

• cobalt			59.4%		
CAS-No.	7440-48-4	EC-No.	231-158-0		
	R42/43 R53				
• chromium			24.5%		
CAS-No.	7440-47-3	EC-No.	231-157-5		
• tungsten			10.0%		
CAS-No.	7440-33-7	EC-No.	231-143-9		
• Niobium			2.0%		
CAS-No.	7440-03-1	EC-No.	231-113-5		

SAFETY DATA SHEET (EC 1907/2006)

Duceralloy C

Material no.		Version	2.4 / GB
Specification	149808	Revision date	22.11.2011
VA-Nr	01628707	Print Date	02.12.2011
		Page	3 / 8

DeguDent
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• Vanadium			2.0%
CAS-No.	7440-62-2	EC-No.	231-171-1
• molybdenum			1.0%
CAS-No.	7439-98-7	EC-No.	231-107-2
• Silicium			1.0%
CAS-No.	7440-21-3	EC-No.	215-609-9
• iron			0.1%
CAS-No.	7439-89-6	EC-No.	231-096-4

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

4. 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.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

special powder against metal fire, quenching powder, dry sand, common salt

Unsuitable extinguishing media

water, carbon dioxide (CO₂)

Special hazards arising from the substance or mixture

May be released in case of fire: cobalt oxide.

Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Advice for firefighters

Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. ACCIDENTAL RELEASE MEASURES

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.

Environmental precautions

Do not flush into surface water or sanitary sewer system.

SAFETY DATA SHEET (EC 1907/2006)**Duceralloy C**

Material no.		Version	2.4 / GB
Specification	149808	Revision date	22.11.2011
VA-Nr	01628707	Print Date	02.12.2011
		Page	4 / 8

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Methods and material for containment and cleaning up

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

7. HANDLING AND STORAGE**Handling****Precautions for safe handling**

When melting, soldering and grinding:
Local ventilation.
Avoid dust formation.
If occurs dust / vapour: Wear personal protective equipment
Do not breathe Dusts and vapours:.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters**

• cobalt			
CAS-No.	7440-48-4	EC-No.	231-158-0
Control parameters	0.1 mg/m3		Time Weighted Average (TWA):(EH40 WEL)
• chromium			
CAS-No.	7440-47-3	EC-No.	231-157-5
Control parameters	0.5 mg/m3		Time Weighted Average (TWA):(EH40 OES)
Control parameters	0.05 mg/m3		Time Weighted Average (TWA):(EH40 MEL)
Control parameters	4 mg/m3		Time Weighted Average (TWA):(EH40 (UK))
type of exposition	Respirable dust.		
Control parameters	10 mg/m3		Time Weighted Average (TWA):(EH40 (UK))
type of exposition	Total inhalable dust.		
Control parameters	0.5 mg/m3		Time Weighted Average (TWA):(EH40 WEL)
Control parameters	2 mg/m3		Time Weighted Average (TWA):(EU ELV)
	Indicative		
• tungsten			
CAS-No.	7440-33-7	EC-No.	231-143-9
Control parameters	4 mg/m3		Time Weighted Average (TWA):(EH40 (UK))
type of exposition	Respirable dust.		
Control parameters	10 mg/m3		Time Weighted Average (TWA):(EH40 (UK))
type of exposition	Total inhalable dust.		
Control parameters	5 mg/m3		Time Weighted Average (TWA):(EH40 WEL)
Control parameters	10 mg/m3		Short Term Exposure Limit (STEL):(EH40 WEL)
• Niobium			
CAS-No.	7440-03-1	EC-No.	231-113-5
Control parameters	4 mg/m3		Time Weighted Average (TWA):(EH40 (UK))
type of exposition	Respirable dust.		
Control parameters	10 mg/m3		Time Weighted Average (TWA):(EH40 (UK))
type of exposition	Total inhalable dust.		
• molybdenum			
CAS-No.	7439-98-7	EC-No.	231-107-2

SAFETY DATA SHEET (EC 1907/2006)**Duceralloy C****DeguDent**
A Dentsply Company

Material no.		Version	2.4 / GB
Specification	149808	Revision date	22.11.2011
VA-Nr	01628707	Print Date	02.12.2011
		Page	5 / 8

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 exposition	Respirable dust.		
Control parameters	10 mg/m3		Time Weighted Average (TWA):(EH40 (UK))
type of exposition	Total inhalable dust.		
Control parameters	10 mg/m3		Time Weighted Average (TWA):(EH40 WEL)
type of exposition	Inhalable dust.		
Control parameters	4 mg/m3		Time Weighted Average (TWA):(EH40 WEL)
type of exposition	Respirable dust.		

Engineering measures

cobalt - vapour is released during processing.
Ensure that there is suitable air extraction / ventilation at the workplace or at the working machines.
Extractor suction on specific objects.

Personal protective equipment**Respiratory protection**

When working without/without sufficient suction of objects:
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
If fumes, dust occurs: basket-shaped glasses

Skin and body protection

If cobalt - vapour occurs: Change contaminated clothing.
Use suitable skin protective agents before handling product. Cleanse and apply cream to skin after work.
Preventive skin protection recommended.

Hygiene measures

If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used.
No eating, drinking, smoking, or snuffing tobacco at work. Wash face and/or hands before break and end of work.
Do not inhale fumes, dust, vapour.
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**Appearance**

Form	solid
Colour	white
Odour	odourless

Information on basic physical and chemical properties

Melting point/range	1270 - 1370 °C
Density	8.8 g/cm3

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Material no.		Version	2.4 / GB
Specification	149808	Revision date	22.11.2011
VA-Nr	01628707	Print Date	02.12.2011
		Page	6 / 8

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Conditions to avoid	None known
Incompatible materials	None known
Hazardous decomposition products	decomposition products if heated above melting point. Metallic vapours

11. TOXICOLOGICAL INFORMATION

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	To date handling this product has not been known to cause any detrimental effects.
Further information	No dangerous reactions are known to occur with correct handling and storage. Cobalt (dusts and vapours): Clues to possible carcinogenic effects in animal experiments. literature

12. ECOLOGICAL INFORMATION**Further information on ecology**

Further Information	Dusts and water soluble alloy types: Prevent penetration into soil, stretches of water and drainage systems.
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13. DISPOSAL CONSIDERATIONS**Product**

Disposal according to local authority regulations.

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Duceralloy C

Material no.		Version	2.4 / GB
Specification	149808	Revision date	22.11.2011
VA-Nr	01628707	Print Date	02.12.2011
		Page	7 / 8

DeguDent
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Uncleaned packaging

Disposal according to local authority regulations.

14. TRANSPORT INFORMATION

Transport/further information

Not dangerous according to transport regulations.

15. REGULATORY INFORMATION

National legislation

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.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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Material no.		Version	2.4 / GB
Specification	149808	Revision date	22.11.2011
VA-Nr	01628707	Print Date	02.12.2011
		Page	8 / 8

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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 (geschlossenes Gefäß)
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
DNEL	Derived No Effect Level
EINECS	European Inventory of Existing Commercial Chemical Substances
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 DGR	International Air Transport Association – Dangerous Goods Regulations
ICAO-TI	International Civil Aviation Organisation - Technical Instructions
IMDG Code	International Maritime Dangerous Goods Code
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 (offenes Gefäß)
OECD	Organisation for Economic Cooperation and Development
OEL	Occupational Exposure Limit
PBT	Persistent, Bioaccumulative, Toxic
PEC	Predicted Effect Concentration
PNEC	Predicted No Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
TA	Technical Instructions (German Ordinance)
TPR	Third Party Representative (Art. 4)
TRGS	Technical Rules for Hazardous Substances (German Regulations)
VCI	German "Verband der Chemischen Industrie e. V."
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	German Water Hazard Class
WHO	World Health Organization