

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

Version: **3.0 / GB**  
Revision date: **03.12.2021**  
Issue date: **11.06.2004**  
replaces version: **2.8**  
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Material no.  
Specification **149740**  
VA-Nr **01906947**

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Trade name StarLoy C  
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.

**1.3. Details of the supplier of the safety data sheet**

Company DeguDent GmbH  
Postfach 1364  
D-63403 Hanau  
Telephone +49 (0)6181/59-5576  
Telefax +49 (0)6181/59-5879  
Email address SDB.Degudent-DE@dentsplysirona.com

**1.4. Emergency telephone number**

Emergency information +49 (0)6181/59-50 (This telephone number is available during office hours only.)

**SECTION 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
Reproductive toxicity	Category 1	H360F
Carcinogenicity	Category 1	H350
Germ cell mutagenicity	Category 2	H341

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

Statutory basis EU-CLP as per Regulation (EU) No. 1272/2008, Annex VI

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

• cobalt  
Hazard pictograms



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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. H341 - Suspected of causing genetic defects. H350 - May cause cancer. H360F - May damage fertility.
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 victim 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.
Precautionary statement: Storage	P405 - Store locked up.
Precautionary statement: Disposal	P501 - Dispose of contents/container in accordance with local regulation.

**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.

**SECTION 3: Composition/information on ingredients****3.1. Substances**

-

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

<b>• cobalt</b>	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
Germ cell mutagenicity				Category 2	H341
Toxicity to reproduction				Category 1B	H360F
Carcinogenicity				Category 1B	H350
<b>• chromium</b>	24.5%				
CAS-No.	7440-47-3	EC-No.	231-157-5		
<b>• tungsten</b>	10.0%				
CAS-No.	7440-33-7	EC-No.	231-143-9		

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<b>• Niobium</b> 2.0%			
CAS-No.	7440-03-1	EC-No.	231-113-5
<b>• Vanadium</b> 2.0%			
CAS-No.	7440-62-2	EC-No.	231-171-1
<b>• molybdenum</b> 1.0%			
CAS-No.	7439-98-7	EC-No.	231-107-2
<b>• Silicium</b> 1.0%			
CAS-No.	7440-21-3	EC-No.	215-609-9
<b>• iron</b> 0.1%			
CAS-No.	7439-89-6	EC-No.	231-096-4

Texts of H phrases, see in Chapter 16

## SECTION 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.  
Obtain medical attention.

### 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

## SECTION 5: Firefighting 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 (CO<sub>2</sub>)

### 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.

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

**SECTION 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.

**SECTION 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.

**SECTION 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 <sup>3</sup>		Time Weighted Average (TWA):(EH40 WEL)
Control parameters	0.02 mg/m <sup>3</sup>		Time Weighted Average (TWA):(NZ OEL)
Control parameters	0.02 mg/m <sup>3</sup>		Time Weighted Average (TWA):
Control parameters	0.02 mg/m <sup>3</sup>		Time Weighted Average (TWA):(KOR OEL)
• chromium			
CAS-No.	7440-47-3	EC-No.	231-157-5
Control parameters	0.5 mg/m <sup>3</sup>		Time Weighted Average (TWA):(EH40 WEL)
Control parameters	2 mg/m <sup>3</sup> Indicative		Time Weighted Average (TWA):(EU ELV)
Control parameters	0.5 mg/m <sup>3</sup>		Time Weighted Average (TWA):(NZ OEL)
Control parameters	0.5 mg/m <sup>3</sup>		Time Weighted Average (TWA):

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Control parameters	0.5 mg/m3	Time Weighted Average (TWA):(KOR OEL)	
<b>• tungsten</b>			
CAS-No.	7440-33-7	EC-No.	231-143-9
Control parameters	5 mg/m3	Time Weighted Average (TWA):(EH40 WEL)	
Control parameters	10 mg/m3	Short Term Exposure Limit (STEL):(EH40 WEL)	
<b>• molybdenum</b>			
CAS-No.	7439-98-7	EC-No.	231-107-2
Control parameters	20 mg/m3	Short Term Exposure Limit (STEL):(EH40 WEL)	
Control parameters	10 mg/m3	Time Weighted Average (TWA):(EH40 WEL)	
<b>• Silicium</b>			
CAS-No.	7440-21-3	EC-No.	215-609-9
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/face 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.

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

Form solid  
 Colour white

Odour odourless

Odour threshold: not applicable

pH not applicable (solid)

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Melting point/range	1270 - 1370 °C
Boiling point/range	not applicable (solid)
Flash point	does not flash
Evaporation rate	not applicable, (solid)
Flammability (solid, gas)	not flammable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Vapour pressure	not applicable
Vapour density	not applicable
Density	8.8 g/cm <sup>3</sup>
Water solubility	insoluble
Partition coefficient: n-octanol/water	not applicable
Autoinflammability	Not capable of spontaneous combustion or heating.
Thermal decomposition	not applicable
Viscosity, dynamic	not applicable
Explosiveness	not applicable
Oxidizing properties	not oxidizing

**9.2. Other information**

Other information No further physicochemical data were determined.

**SECTION 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 products**

Decomposition products occurring when heated above melting temperature metallic vapors

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**SECTION 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	May cause sensitisation of susceptible persons by skin contact or by inhalation of dust., Allergic reactions caused by ions of cobalt and chromium are known. For none of the cobalt and chromium containing alloys of DeguDent a documented allergic reaction is known.
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 ., Molybdenum is an essential element of the human body., The daily dietary uptake of chromium amounts to several milligrams., Information taken from reference works and the 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

**SECTION 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

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### 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.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### Product

Disposal according to local authority regulations.

#### Uncleaned packaging

Disposal according to local authority regulations.

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

## SECTION 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.

## SECTION 16: Other information

### Classification and applied procedure to derive the classification of mixtures according to EU Regulation (EC) No. 1272/2008 (CLP)

Classification	Classification procedure
Resp. Sens., 1 , H334 Skin Sens., 1 , H317 Aquatic Chronic, 4 , H413 Repr., 1 , H360F Carc., 1 , H350 Muta., 2 , H341	

### Relevant H phrases from chapter 3

H317	: May cause an allergic skin reaction.
H334	: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	: Suspected of causing genetic defects.



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H350 : May cause cancer.  
H360F : May damage fertility.  
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.

**Legend**

<b>ADR</b>	European Agreement concerning the International Carriage of Dangerous Goods by Road
<b>ADN</b>	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
<b>ASTM</b>	American Society for Testing and Materials
<b>ATP</b>	Adaptation to Technical Progress
<b>BCF</b>	Bioconcentration factor
<b>BetrSichV</b>	German Ordinance on Industrial Safety and Health
<b>c.c.</b>	closed cup
<b>CAS</b>	Chemical Abstract Services
<b>CESIO</b>	European Committee of Organic Surfactants and their Intermediates
<b>ChemG</b>	German Chemicals Act
<b>CMR</b>	carcinogenic-mutagenic-toxic for reproduction
<b>DIN</b>	German Institute for Standardization
<b>DMEL</b>	Derived minimum effect level
<b>DNEL</b>	Derived no effect level
<b>EINECS</b>	European Inventory of Existing Commercial Chemical Substances
<b>EC50</b>	half maximal effective concentration
<b>GefStoffV</b>	German Ordinance on Hazardous Substances
<b>GGVSEB</b>	German ordinance for road, rail and inland waterway transportation of dangerous goods
<b>GGVSee</b>	German ordinance for sea transportation of dangerous goods
<b>GLP</b>	Good Laboratory Practice
<b>GMO</b>	Genetic Modified Organism
<b>IATA</b>	International Air Transport Association
<b>ICAO</b>	International Civil Aviation Organization
<b>IMDG</b>	International Maritime Dangerous Goods
<b>ISO</b>	International Organization For Standardization
<b>LOAEL</b>	Lowest observed adverse effect level
<b>LOEL</b>	Lowest observed effect level
<b>NOAEL</b>	No observed adverse effect level
<b>NOEC</b>	no observed effect concentration
<b>NOEL</b>	no observed effect level
<b>o. c.</b>	open cup
<b>OECD</b>	Organisation for Economic Cooperation and Development
<b>OEL</b>	Occupational Exposure Limit
<b>PBT</b>	Persistent, bioaccumulative, toxic
<b>PEC</b>	Predicted effect concentration
<b>PNEC</b>	Predicted no effect concentration
<b>REACH</b>	REACH registration
<b>RID</b>	Convention concerning International Carriage by Rail
<b>STOT</b>	Specific Target Organ Toxicity

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<b>SVHC</b>	Substances of Very High Concern
<b>TA</b>	Technical Instructions
<b>TPR</b>	Third Party Representative (Art. 4)
<b>TRGS</b>	Technical Rules for Hazardous Substances
<b>VCI</b>	German chemical industry association
<b>vPvB</b>	very persistent, very bioaccumulative
<b>VOC</b>	volatile organic compounds
<b>VwVwS</b>	German Administrative Regulation on the Classification of Substances Hazardous to Waters into Water Hazard Classes
<b>WGK</b>	Water Hazard Class
<b>WHO</b>	World Health Organization