

SAFETY DATA SHEET (EC 1907/2006)**Vitallium Legierungen
Vitallium Laserschweißdraht
Vitallium Special Alloy
CoCr Laserdrahtstäbe**Version: **2.0 / GB**
Revision date: **05.10.2021**
Issue date: 16.08.2013
replaces version: 1.4
Page: **1 / 10**Material no. **5535000180**
Specification **172871**
VA-Nr **01948086****SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**Trade name Vitallium Legierungen
Vitallium Laserschweißdraht
Vitallium Special Alloy
CoCr Laserdrahtstäbe

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 sheetCompany DeguDent GmbH
Postfach 1364
D-63403 Hanau

Telephone +49 (0)6181/59-5576
Telefax +49 (0)6181/59-5751
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

| | | | | | |
|---|-----------|--------|-----------|-------------|-------|
| • cobalt 60% - 66% | | | | | |
| 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 |
| • chromium 27% - 32% | | | | | |
| CAS-No. | 7440-47-3 | EC-No. | 231-157-5 | | |

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| | | | |
|------------------------|-----------|---------|-----------|
| • molybdenum | | 5% - 7% | |
| CAS-No. | 7439-98-7 | EC-No. | 231-107-2 |
| • Silicium < 1% | | | |
| CAS-No. | 7440-21-3 | EC-No. | 215-609-9 |
| • manganese | | < 1% | |
| CAS-No. | 7439-96-5 | EC-No. | 231-105-1 |
| • Carbon < 1% | | | |
| CAS-No. | 1333-86-4 | | |

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 saltUnsuitable 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.

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Prevent fire extinguishing water from contaminating surface water or the ground water system.
 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 ³ | | Time Weighted Average (TWA):(EH40 WEL) |
| Control parameters | 0.02 mg/m ³ | | Time Weighted Average (TWA):(NZ OEL) |
| Control parameters | 0.02 mg/m ³ | | Time Weighted Average (TWA): |
| Control parameters | 0.02 mg/m ³ | | Time Weighted Average (TWA):(KOR OEL) |
| • chromium | | | |
| CAS-No. | 7440-47-3 | EC-No. | 231-157-5 |
| 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) |

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| | | | |
|---------------------|------------------|--------|---|
| | Indicative | | |
| Control parameters | 0.5 mg/m3 | | Time Weighted Average (TWA):(NZ OEL) |
| Control parameters | 0.5 mg/m3 | | Time Weighted Average (TWA): |
| Control parameters | 0.5 mg/m3 | | Time Weighted Average (TWA):(KOR OEL) |
| • molybdenum | | | |
| 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) |
| • Silicium | | | |
| 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. | | |
| • manganese | | | |
| CAS-No. | 7439-96-5 | EC-No. | 231-105-1 |
| Control parameters | 0.5 mg/m3 | | Time Weighted Average (TWA):(EH40 WEL) |
| • Carbon | | | |
| CAS-No. | 1333-86-4 | | |
| Control parameters | 3.5 mg/m3 | | Time Weighted Average (TWA):(EH40 WEL) |
| Control parameters | 7 mg/m3 | | Short Term Exposure Limit (STEL):(EH40 WEL) |

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

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Appearance

Form solid
Colour white

Odour odourless

Odour threshold: not applicable

pH not applicable
(solid)

Melting point/range 1300 - 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 ca. 8.3 g/cm³

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

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**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

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

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**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.

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**

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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. |
| 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.

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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 |

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|------------------|--|
| 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 |