



According to EC 1907/2006

Date of issue: 16.08.2013

Revision date: 26.09.2017

Version: 1.4

Laser welding wire

1. Identification of the substance / Preparation and Company:

- 1.1 Product identifier
Commercial product name: Laser welding wire
- 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
Manufacturer/Supplier: ERNST HINRICHS Dental GmbH
Street / mailbox: Borsigstr. 1
Country code. / postal code / city: D - 38644 Goslar
Phone: 0 53 21 / 5 06 24
Fax: 0 53 21 / 5 08 81
E-mail / Website: info@hinrichs-dental.de / www.hinrichs-dental.de
- 1.4 Further information obtainable from: ERNST HINRICHS Dental GmbH
Emergency telephone number
ERNST HINRICHS Dental GmbH: +49 (0) 53 21 / 5 06 24 - 25 (Mon-Fri. 8 a.m. – 4 p.m.)

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 |
- 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:
-
- 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:
Precautionary statement: Prevention
P280 - Wear protective gloves/protective clothing/eye protection.
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 vapours when melted. Cobalt vapour will be released while processing. Limited evidence of a carcinogenic effect. A PBT/vPvB evaluation is not available,



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since a chemical safety evaluation is not required / has not been carried out.

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
Chromium	27% - 32%				
CAS-No.	7440-47-3	EC-No.	231-157-5		
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

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 vapour: Wear personal safety equipment. Dusts and vapours: Do not inhale.
- 7.2 Conditions for safe storage, including any incompatibilities Storage: No special storage conditions required.
- 7.3 Specific end use(s): German storage class: 13 - Non Combustible Solids. 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/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 WEL)
Control parameters	2 mg/m3 Indicative		Time Weighted Average (TWA):(EU ELV)
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



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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 vapour 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, 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:

- 9.1 Information on basic physical and chemical properties:
- 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
- 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



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<p>Autoinflammability:</p> <p>Thermal decomposition:</p> <p>Viscosity, dynamic:</p> <p>Explosiveness:</p> <p>Oxidizing properties:</p> <p>9.2 Other information:</p>	<p>Not capable of spontaneous combustion or heating.</p> <p>not applicable</p> <p>not applicable</p> <p>not applicable</p> <p>not oxidizing</p> <p>No further physicochemical data were determined.</p>
10. Stability and Reactivity:	
<p>10.1 Reactivity:</p> <p>10.2 Chemical stability:</p> <p>10.3 Possibility of hazardous reactions:</p> <p>10.4 Conditions to avoid:</p> <p>10.5 Incompatible materials:</p> <p>10.6 Hazardous decomposition products:</p>	<p>No data available.</p> <p>The product is chemically stable.</p> <p>No dangerous reactions known.</p> <p>No limitations.</p> <p>None known.</p> <p>Decomposition products occurring when heated above melting temperature. Metallic vapours.</p>
11. Toxicological Information:	
<p>11.1 Information on toxicological effects:</p> <p>Acute oral toxicity:</p> <p>Acute inhalation toxicity:</p> <p>Acute dermal toxicity:</p> <p>Skin irritation:</p> <p>Eye irritation:</p> <p>Sensitisation:</p> <p>Repeated dose toxicity:</p> <p>Mutagenicity assessment:</p> <p>Carcinogenicity:</p> <p>Toxicity to reproduction:</p> <p>Human experience:</p> <p>Further information:</p>	<p>No data available</p> <p>No data available</p> <p>No data available</p> <p>No data available</p> <p>No data available</p> <p>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 this product is a documented allergic reaction is known.</p> <p>No data available</p> <p>No data available</p> <p>No data available</p> <p>No data available</p> <p>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.</p> <p>No hazardous reactions are known if properly handled and stored. Cobalt (dusts and vapours): Clues to possible carcinogenic effects in animal experiments. literature</p>
12. Ecological Information:	
<p>12.1 Toxicity:</p> <p>12.2 Persistence and degradability</p> <p>Biodegradability:</p> <p>12.3 Bioaccumulative potential</p> <p>Bioaccumulation:</p> <p>12.4 Mobility in soil:</p> <p>12.5 Results of PBT and vPvB as assessment:</p> <p>12.6 Other adverse effects:</p>	<p>No ecotoxicological data is available for this product.</p> <p>No data available.</p> <p>No data available.</p> <p>The product is insoluble in water. No further information available. A PBT/vPvB evaluation is not available, since a chemical safety evaluation is not required / has not been carried out.</p> <p>Dusts and water-soluble forms of the alloy: Introduction into soil, natural water bodies or sewerage must be prevented.</p>



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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: --
- 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 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:

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	

Relevant H phrases from chapter 3

- 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 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:

- 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



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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