

**1. Identification of the substance/preparation and of the company**

**1.1 Description of product**

Hard metal blank and tools on the basis of tungsten carbide/cobalt/nickel in **SINTERED STATE**.

**1.2 Use of product**

Machining of metals by means of turning, milling and drilling.  
Mechanic machining of metals and other materials.

**1.3 Identification of manufacturer/supplier**

<u>Manufacturer/supplier:</u>	BOEHLERIT GmbH & Co KG
<u>Street/P.O. box:</u>	P.O. Box 85
<u>Nation sign/postal code/city:</u>	A-8605 Kapfenberg
<u>Phone:</u>	0043 3862 300 0
<u>Telefax:</u>	0043 3862 300 793
<u>Department providing information:</u>	Metallurgic laboratory / work safety
<u>Phone:</u>	0043 3862 300 575
<u>Telefax:</u>	0043 3862 300 797
<u>E-mail:</u>	sales@boehlerit.com
<u>Emergency phone number:</u>	0043 1 406 434 3 (Austria: National Poisoning Centre)

**2. Hazards identification**

**2.1 Description of hazards:**

As sintered compact, no hazardous material as defined in the Ordinance on Hazardous Substances. There are indications that suggest a health risk for man caused by hard metal aerosols.

When hard metal is ground, particles may get into the air. Abrasive dust may cause irritations when coming in contact with skin or eyes. Repeated or prolonged contact with cobalt-containing swarf may impair skin, respiratory organs and the heart. (Observe air limit values as defined in paragraph 15).

**2.2 Designation of hazards:**

Xn                      harmful

**3. Composition/Information on ingredients**

Substance	CAS no.	Content in (weight per cent)	Hazard symbol	R-phrases	S-phrases
Cobalt	7440-48-4	≤ 26%	Xn	42/43-53	22-24-37-61
Nickel	7440-02-0	≤ 13%	Xn	40-43	22-36
Tungsten carbide	12070-12-1	≥ 50%			-
Chromium carbide	12012-35-0	≤ 3%			-
Titanium carbide	12070-08-5	≤ 15%			-
Tantalum carbide	12070-06-3	≤ 15%			-

Vanadium carbide	12070-10-9	≤ 1%			-
Niobium carbide	12069-94-2	≤ 8%			-

## 4. First aid measures

### 4.1 General information

In the event of highly concentrated dust density or when symptoms of pulmonary dysfunction in combination with coughing fits and shortness of breath occur, remove the affected person from the danger zone.

### 4.2 Skin contact

In case of contact with skin wash off thoroughly with soap and water, take off soiled clothing.

### 4.2 Eye contact

In case abrasive dust comes into contact with eyes, rinse them immediately with copious amounts of water.

If complaints persist, consult a doctor.

## 5. Fire-fighting measures

Hard metal products in solid form do not present a risk of fire. Under normal conditions, dust from grinding processes does not ignite.

## 6. Accidental release measures

To prevent dust particles from entering into the air, a suitable cooling lubricant shall on principle be used when machining hard metal. A suitable ventilation/suction system shall be ensured, too.

Dust particles have to be removed with suitable aspirator device or wet cloths.

## 7. Handling and storage

### 7.1 Handling

Hard metal products are stable substances and present no risk to health, and yet abrasive dust, including cobalt-containing dust and cooling lubricant emulsions may irritate the skin and cause asthma. There is a possibility of them causing lung and heart problems.

Avoid the inhalation of dust; to do so use suitable cooling lubricants and local aspiration systems and breathing masks.

Wash your hands thoroughly before eating or smoking. Do not eat, drink or smoke while working. Do not shake clothing or cloths to remove dust.

Periodic medical check-ups are recommended for people who are regularly exposed to dust (observe national law).

### 7.2 Storage

Protect from humidity, acids and lyes.

## 8. Exposure control and personal protective equipment

### 8.1 Limit value

see paragraph 15

### 8.2 Protection

Dust masks, breathing masks, protective gloves and goggles are recommended. Avoid direct contact of skin with dust. Use aspirators. Wash clothing and cloths to remove dust from them.

## 9. Physical and chemical properties

Appearance:	grey body; hard material coated yellow, silver or black
Odour:	Odourless
pH-value:	not applicable
Melting temperature:	(Co) 1492°C
Temperature of ebullition:	(Co) 3100°C
Flashpoint:	not applicable
Explosion hazard:	None

## 10. Stability and reactivity

### 10.1 Stability:

Stable under standard pressure and temperature conditions.

### 10.2 Hazardous decomposition products:

When decomposed with acids: development of hydrogen (explosion hazard).

Decomposition by heat: carbon monoxide/carbon dioxide, tungsten trioxide and cobalt oxide may develop.

## 11. Toxicological information

### 11.1 General

No known health risks caused by sintered hard metal tools.

### 11.2 Hard metal dust

Hard metal dust may cause allergic reactions and irritations of lung, skin and eyes.

### 11.3 Cobalt

Chronic inhalation of cobalt in combination with substances such as tungsten carbide, diamond, iron, etc. may cause pulmonary fibrosis.

Cobalt may cause allergic reactions of skin, eyes and lung.

According to the limit value directive 2007 Annex III A2 classified as a substance that has so far only shown to be carcinogenic in animal experiments under conditions comparable to those of a possible exposure of people on their work place and/or from which comparability can be derived.

### 11.4 Nickel

Classified as clearly carcinogenic working material; these are working materials that have shown to cause the growth of malign tumours in man or have proven to be carcinogenic in animal experiments (limit value directive 2007 Annex III A1).

Observe national law.

### 11.5 Acute toxicity WC:

LD <sub>50</sub> oral	rat:	> 2000 mg/kg
LD <sub>50</sub> dermal	rat:	> 2000 mg/kg
LC <sub>50</sub> inhalation	rat:	> 5.30 mg/l, 4 hrs

### 11.6 Acute toxicity Co:

LD <sub>50</sub> oral	rat:	7000 mg/kg
LC <sub>50</sub> inhalation	rat:	> 10 mg/l, 1 hr

### 11.7 Acute toxicity Ni:

LD <sub>50</sub> oral	rat:	> 9000 mg/kg
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## 12. Ecological information

### 12.1 Water hazard class:

As solid WHC 0

### 12.2 Aquatic toxicity:

Acute fish toxicity WC

96 h LC<sub>0</sub> (Brachydanio rerio): 1000 mg/l

96 h LC<sub>50</sub> (Brachydanio rerio): > 1000 mg/l

Acute fish toxicity Co:

96 h NOEC (Brachydanio rerio): 100 mg/l

Acute daphnia toxicity WC

48 h EC<sub>0</sub> (Daphnia magna): 580 mg/l

48 h EC<sub>50</sub> (Daphnia magna): > 1000 mg/l

Acute daphnia toxicity Co:

48 h EC<sub>50</sub> (Daphnia magna): > 100 mg/l

Bacteria toxicity WC

3 h EC<sub>50</sub> (activated sludge): > 1000 mg/l

Bacteria toxicity Co:

3 h EC<sub>50</sub> (activated sludge): > 50 mg/l

## 13. Disposal consideration

### 13.1 General

Disposal according to national regulations.

The metals contained in the hard metal blank and in the tools are valuable and can be recovered. European Waste Catalogue code 35315 (NE metal scrap).

Depending on the hazard-relevant properties, the abrasive slurry resulting from processing is disposed of either via EWC code 35502 (metal grinding sludge "g") or EWC code 35507 (metal grinding sludge without hazard-relevant properties).

## 14. Transport information

### Hazardous materials

No hazardous materials in the meaning of transport regulations.

## 15. Regulatory information

**Not subject to labelling requirements as defined by EU Directive 88/379**

**Limit values:** for released hard metal components

general dust limit value: 6 mg/m<sup>3</sup>

**Co:** 0.1 mg/m<sup>3</sup> in total dust; peak value limitation category 4;

EKA (exposure equivalent for carcinogenic substances)

Value urine 60 µg/l, whole blood 5 µg/l.

**NbC:** air limit value: 5 mg/m<sup>3</sup> (inhalable fraction, insoluble Niob compounds).

**WC:** air limit value: 5 mg/m<sup>3</sup> (total dust, insoluble tungsten compounds)

air limit value: 1 mg/m<sup>3</sup> (total dust, soluble tungsten compounds)

**VC:** air limit value: 0.5 mg/m<sup>3</sup> (total dust, measured as vanadium metal).

**Cr<sub>3</sub>C<sub>2</sub>:** air limit value: not defined

### R-phrases

**R42/43** May cause sensitisation by inhalation and skin contact.

**R53** May cause long-term adverse effects in the aquatic environment.

**R40** Suspected of causing cancer.  
**R43** May cause sensitisation by skin contact.

### **S-phrases**

**S22** Do not breathe in dust.  
**S24** Avoid contact with skin.  
**S36/37** Wear suitable protective clothing and gloves for work.

**Note:** **Observe national regulations!**

## **16. Other details**

This technical data sheet has been drawn up according to the REACH Regulation (EC) no. 1907/2006 (as amended). The data provided is based on the current state of knowledge and experience. The safety data sheet describes products with regard to safety requirements. The statements herein are not meant to guarantee specific characteristics or properties and do not establish a contractual, legal relationship.