Information sheet
for articles

Printing date 13.12.2019 Version number 2 Revision: 13.12.2019

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name: VITROVAC ®**
- **Detailed descriptions:**
  VITROVAC® 6070 K70, - 6025 I50, - 6080 L80, - 6150 N50, - 6150 B60, - 6030 D30

  ® registered trademark of VACUUMSCHMELZE GmbH & Co. KG
- **Information sheet - no.:** IB40
- **Remarks for information sheet**
  Our semi-finished and finished products constitute manufactured articles under the terms of the REACH Regulation (EC) No. 1907/2006.
  Articles are not subject to any legal obligation concerning production and distribution of material safety data sheets. The detailed information usually shown in a safety data sheet will be provided in the form of an 'Information sheet for articles' for specific alloys.

  However, we expressly point out that these information sheets for articles are voluntarily produced data sheets which are not governed by the requirements of the REACH regulation.
- **1.2 Relevant identified uses of the substance or mixture and uses advised against** Not applicable
- **Application of the article:** semi-finished products and parts
- **1.3 Details of the supplier of the information sheet**
- **Manufacturer/Supplier:**
  VACUUMSCHMELZE GmbH & Co.KG
  Grüner Weg 37
  D-63450 Hanau

  datasheet@vacuumschmelze.com
- **Further information obtainable from:** Environmental Protection Department
- **1.4 Emergency telephone number:**
  Tel. no.: (**49) 6181/38-0
  Emergency tel. no.: via (**49) 6181/38-0

SECTION 2: Hazards identification

- **2.2 Classification (substance or mixture)**
  Classification according to Regulation (EC) No 1272/2008 (CLP-Regulation):
  Not applicable
  For articles there is no obligation to classify acc. to CLP -Regulation.
- **2.2 Labelling according to Regulation (EC) No 1272/2008**
  Labelling according to Regulation (EC) No 1272/2008 (CLP-Regulation):
  Not applicable
- **Additional VAC information:**
  In the case of dust-producing processing, we recommend observance of the following warnings :
- **Hazard statements**
  Harmful if swallowed.
  May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  May cause an allergic skin reaction.
  May cause cancer by inhalation. Route of exposure: Inhalation.
  May damage fertility.
  May cause long lasting harmful effects to aquatic life.
- **Precautionary statements**
  Do not breathe dust/fume/gas/mist/vapours/spray.
  Do not eat, drink or smoke when using this product.
  Avoid release to the environment.
  Use personal protective equipment as required.

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In case of inadequate ventilation wear respiratory protection.
Store locked up.

• **2.3 Other hazards**

Danger of accident!
Always wear protective clothing, protective glasses and safety gloves when handling the bands.
- The bands have sharp edges. There is a danger of (serious) injury from cuts.
- The bands can split and cause (serious) cuts when bent excessively

• **Results of PBT and vPvB assessment**
• **PBT:** Not applicable.
• **vPvB:** Not applicable.

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SECTION 3: Composition/information on ingredients

• **3.2 Chemical characterization:**
• **Description:** Metal in compact form

• **Components(composition):**
The classifications given below reflect the classification of each pure substance respectively and are intended for information only
The legal classifications of the pure substances (harmonized classification according to substance list of the Annex VI of the CLP Regulation) got complemented, insofar as additional substance-specific information from accessible data sources (e.g. TRGS 905, toxicological studies) for health hazards and / or physical hazards are available.
* = possible inpurities

CAS: 7440-48-4 EINECS: 231-158-0 Index number: 027-001-00-9 RTECS: GF 8750000	cobalt Resp. Sens. 1, H334; Carc. 1B, H350i; Repr. 1B, H360F; Acute Tox. 4, H302; Skin Sens. 1, H317; Aquatic Chronic 4, H413	<90%
CAS: 7439-96-5 EINECS: 231-105-1 RTECS: OO 9275000	manganese substance with a Community workplace exposure limit	<5%
CAS: 7440-42-8 EINECS: 231-151-2 RTECS: ED 7350000	boron Acute Tox. 4, H302	<4%
CAS: 7440-02-0 EINECS: 231-111-4 Index number: 028-002-00-7	nickel Carc. 2, H351; STOT RE 1, H372; Skin Sens. 1, H317	<0.3*%

• **NON-hazardous Ingredients**

CAS: 7440-21-3 EINECS: 231-130-8	silicon	<10%
CAS: 7439-98-7 EINECS: 231-107-2 RTECS: QA 4680000	molybdenum	<6%
CAS: 7439-89-6 EINECS: 231-096-4 RTECS: NO 4565500	iron (compact form)	≤4%
CAS: 7440-03-1 EINECS: 231-113-5	niobium (compact form)	<2%

• **Remark to the composition:**
The niobium concentration mentioned only applies for the alloy VITROVAC 6025 I50.

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• **Additional information:**
For the wording of the listed hazard phrases refer to section 16.

Additional information for Cobalt:
See also Chapter 11

SECTION 4: First aid measures

• **4.1 Description of first aid measures**

• **After inhalation:**
If metal vapours or dusts have been inhaled:
Get the affected person out in the fresh air and call a doctor.

• **After skin contact:**
Foreign bodies which have penetrated the skin must be removed and the wound cleaned thoroughly.

• **After eye contact:**
Foreign bodies must be removed, consult a doctor if necessary.
Beware of metal splinters - Consult a doctor immediately.

• **After swallowing:** Consult a doctor if the symptoms persist.
• **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
• **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

• **5.1 Extinguishing media**
• **Suitable extinguishing agents:**
Non-combustible.
Extinguishing agents must be adapted to the environment.
• **5.2 Special hazards arising from the substance or mixture**
Formation of toxic smoke / fumes (metal / metal oxides) is possible during heating or in case of fire. Do not inhale fumes.
• **5.3 Advice for firefighters**

• **Protective equipment:** No special measures required.

SECTION 6: Accidental release measures

Accidental release of dusts and vapours which are damaging to health can be ruled out.

• **6.1 Personal precautions, protective equipment and emergency procedures** No special measures required.
• **6.2 Environmental precautions:** No special measures required.
• **6.3 Methods and material for containment and cleaning up:** No special measures required.
• **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

• **7.1 Precautions for safe handling**

Danger of accident!

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Always wear protective clothing, protective glasses and safety gloves when handling the bands.
- The bands have sharp edges. There is a danger of (serious) injury from cuts.
- The bands can split and cause (serious) cuts when bent excessively.

No more safety precautions are necessary in the delivered form.
The appropriate industrial and environmental safety measures must be taken for processing steps which cause dust (see also section 8):
Prevent formation of dust.
Ensure good ventilation/exhaustion at the workplace.
Take note of emission threshold.

- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Not applicable
- **Storage class:** Not applicable
- **7.3 Specific end use(s)** No further relevant information available.

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SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:**
Provide suction with filtering for good airing and ventilation of the work area during processing steps which cause dust. Air return is only permitted in exceptional cases.
If industrial vacuum cleaners are used, these must have dust class H (DIN EN 60335-2-69).
Suitable breathing apparatus must be used during repair and maintenance work to suction systems, especially when changing filters (see personal safety equipment).

- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
For International Limit Values see Additional information below.

7440-48-4 cobalt	
ERB (Germany)	0.5 µg/m³ (A) bzw. 5µg/m³ (A)
MAK (Germany)	einatembare Fraktion; vgl.Abschn.XIII
7439-98-7 molybdenum	
MAK (Germany)	vgl.Abschn.IIb und XII
7439-96-5 manganese	
AGW (W)	Long-term value: 0.5 E mg/m³
IOELV (EU)	Long-term value: 0.2* 0.05** mg/m³ as Mn; *inhalable, **respirable fraction
AGW (Germany)	Long-term value: 0.02A; 0.2E mg/m³ 8(II);DFG,Y,10, 20
7440-42-8 boron	
MAK (Germany)	Long-term value: 0.75E mg/m³
7440-02-0 nickel	
AGW (Germany)	Long-term value: 0.006A; 0.030E* mg/m³ 8(II);AGS, 24, Sh, Y, 10*, 31*

- **DNELs**
DNELs for OSH purposes
In Germany, occupational exposure limits (AGW) of the Technical Rules on Hazardous Substances (TRGS) 900

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continue to constitute workplace atmospheric limit values that are binding upon employers. Should no AGW and for example no maximum workplace concentration (MAK value) of the German Research Foundation (DFG) be available, the employer must also consider the DNEL during risk assessment.
(Source: Institut für Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung (IFA))
current values are available: http://www.dguv.de/ifa/gestis/gestis-dnel-liste/index.jsp.

7440-48-4 cobalt		
Inhalative	Long-term exposure - inhalation - local effects	0.04 mg/m³ (Ind) 0.0063 mg/m³ (Consumer)
7440-02-0 nickel		
Inhalative	Long-term exposure - inhalation - local effects	0.05 mg/m³ (Ind)
	Long-term exposure - inhalation - systemic effects	0.05 mg/m³ (Ind)

• **Ingredients with biological limit values:**	
7439-96-5 manganese	
BGW (Germany)	20 µg/l Untersuchungsmaterial: Vollblut Probennahmezeitpunkt: bei Langzeitexposition: am Schichtende nach mehreren vorangegangenen Schichten, Expositionsende bzw. Schichtende Parameter: Mangan

• **Additional Occupational Exposure Limit Values for possible hazards during processing:**
Compliance with the general dust limit value(s) (lung penetrating and/or inhalable fraction) must be ensured.
If the occurrence of Boric acid/ Boron oxide cannot be ruled out, the appropriate workplace-related limit values must also be monitored!
The AGW for nickel is to be used only for nickel metal.
For thermal processes in the presence of atmospheric oxygen, oxidic nickel compounds must always be assumed and the ERB (TRGS 910) must be applied.

• **Additional information:**
- The lists valid during the making were used as basis.
- GESTIS International Limit Values:
http://www.dguv.de/ifa/Gefahrstoffdatenbanken/GESTIS-Internationale-Grenzwerte-für-chemische-Substanzen-limit-values-for-chemical-agents/index.jsp

• **8.2 Exposure controls**
• **Personal protective equipment:**
• **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Do not eat, drink, smoke or sniff while working.

• **Respiratory protection:**

In the case of dust formation (limit value exceeded), breathing apparatus must be worn.
Time limits for wearing must be observed.

Breathing mask, apparatus with particle filter P2 or P3, for example:
- Full face mask (EN 136)
- Breathing mask (EN 149) FFP2 or FFP3
10 times the limit value (FFP2)
30 times the limit value (FFP3)
Recommendation: P3

• **Protection of hands:**

Avoid repeated and prolonged contact with the skin, use protective gloves.

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Preventive skin protection by use of skin-protecting agents is recommended.

- **Material of gloves**
  Experience has shown glove materials polychloroprene, nitrile caoutchouc, butyl caoutchouc, fluoride caoutchouc and polyvinylchloride to offer sufficient protection.
- **Penetration time of glove material** -
- **Eye protection:**

In the event of larger quantities of dust:
Wear protective glasses / EN 166, poss. with side protection.

- **Limitation and supervision of exposure into the environment**
  The legal issue values and limitations are to be paid attention!

SECTION 9: Physical and chemical properties

• **9.1 Information on basic physical and chemical properties**	
• **General Information**	
• **Appearance:**	
Form:	Strip
Colour:	Metallic
• **Odour:**	Odourless
• **pH-value:**	Not applicable.
• **Change in condition**	
Melting point/Melting range (approx.):	1,000-1,200 °C
• **Auto-ignition temperature:**	Not applicable
• **Explosive properties:**	Not applicable
• **Vapour pressure:**	Not determined.
• **Density (approx.) at 20 °C:**	7.6-7.9 g/cm³
• **Relative density**	Not determined.
• **Solubility in / Miscibility with water:**	Insoluble.
• **9.2 Other information**	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
  Hydrogen is released in contact with acid which can cause explosive gas mixtures.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

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SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**

Harmful if swallowed.

- **LD/LC50 values:**

The following applies for the **pure substances**:

7440-48-4 cobalt		
Oral	LD50	550 mg/kg (rat)
Inhalative	LC50/4 h	mg/l (rat) siehe zusätzlicher toxikologischer Hinweis / see additional toxicological information
7440-42-8 boron		
Oral	LD50	650 mg/kg (rat)
7440-02-0 nickel		
Oral	LD50	>9,000 mg/kg (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation** see sensitization
- **Serious eye damage/irritation**

Irritation of the eyes in the case of massive direct contact will be mainly due to mechanical effects depending on the grain size.

- **Respiratory or skin sensitisation**

May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.

- **Additional toxicological information:**

Subsequent users should be aware of the fact that Co-metal fine powder are classified as “acute toxic if inhaled, Category 1” (no legal classification); LC50 4hr ≤0,05 mg/l.
In case the subsequent use of product generates fine Co-metal particles (e.g. dust), protection measures such as described in Chapter 7 and 8 of this information sheet must be applied.

- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity**

May cause cancer by inhalation. Route of exposure: Inhalation.

- **Reproductive toxicity**

May damage fertility.

- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Alloys in solid form do not pose an ecological threat.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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• **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

• **13.1 Waste treatment methods**
• **Recommendation** Observe offical regulations.

• **Uncleaned packaging:** Not applicable

SECTION 14: Transport information

• **Transport/Additional information:**

• **Land transport ADR/RID (cross-border):**
• **Remarks:** Non-hazardous goods from the standpoint of the specified regulations

• **Maritime transport IMDG:**
• **Remarks:** Non-hazardous goods from the standpoint of the specified regulations

• **Air Transport ICAO-TI and IATA-DGR:**
• **Remarks:** Non-hazardous goods from the standpoint of the specified regulations

SECTION 15: Regulatory information

• **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

• **Directive 2012/18/EU**
• **Named dangerous substances - ANNEX I** None of the ingredients is listed.

• **National regulations:**

• **Other regulations, limitations and prohibitive regulations**
e.g.
- 1272/2008/EG (CLP)
- 1907/2006/EG (REACH)
- German Hazardous Substances
- TRGS 561 / TRGS 910
• **15.2 Chemical safety assessment:** Void (for articles)

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

• **Relevant phrases**
Wording of the hazard warnings mentioned (Chapter 3) for pure substances:
H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H350i May cause cancer by inhalation. Route of exposure: Inhalation.
H351 Suspected of causing cancer. Route of exposure: Inhalation.
H360F May damage fertility.
H372 Causes damage to organs through prolonged or repeated exposure.
H413 May cause long lasting harmful effects to aquatic life.

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- **Department issuing SDS:**
  Department OPS-C SE
  Tel. 06181/38-2045
- **Contact:**
  Environmental Protection Department
  Tel. 06181/38-2359
- **Abbreviations and acronyms:**
  RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  DNEL: Derived No-Effect Level (REACH)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  Acute Tox. 4: Acute toxicity - oral – Category 4
  Resp. Sens. 1: Respiratory sensitisation – Category 1
  Skin Sens. 1: Skin sensitisation – Category 1
  Carc. 1B: Carcinogenicity – Category 1B
  Carc. 2: Carcinogenicity – Category 2
  Repr. 1B: Reproductive toxicity – Category 1B
  STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
  Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4
- **Sources**
  - KÜHN-BIRETT-Merkblätter gefährlicher Arbeitsstoffe
  - Technische Regeln für Gefahrstoffe
- *** Data compared to the previous version altered.**

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