

Information sheet

for articles

Printing date 04.09.2020

Version number 2

Revision: 04.09.2020

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

• **1.1 Product identifier**

• **Trade name:** **VACOMAX®**

• **Detailed descriptions:**

VACOMAX 145, - 170, - 200
(all qualities)

® registered trademark of VACUUMSCHMELZE GmbH & Co. KG

• **Information sheet - no.:** IB60

• **Remarks for information sheet**

Our semi-finished and finished products constitute manufactured and distributed 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:** PERMANENT MAGNETS e.g. in motors, generators, sensors, E-Mobility

• **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 :

Additional information:

See also Chapter 11

• **Hazard statements**

(See also 'Other hazards' (chapter 2.3))

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

May cause cancer.

May damage fertility.

May cause long lasting harmful effects to aquatic life.

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• **Precautionary statements**

Avoid breathing dust/fume/gas/mist/vapours/spray.
 Wear protective gloves/protective clothing/eye protection/face protection.
 [In case of inadequate ventilation] wear respiratory protection.
 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
 Store locked up.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

• **2.3 Other hazards**

Dry mechanical processing of rare earth permanent alloys is only permitted under special safety precautions because dusts which are capable of self-heating or pyrophorous dusts with a tendency to explode may be produced.

In the case of wet mechanical processing the watery processing medium reacts with the magnet wear and may form hydrogen already at room temperature.

Attention: Formation of Ex-atmospheres possible!

Part of the resulting hydrogen is stored in the material. The resulting processing sludges must be kept under a protective liquid because drying out sludges are capable of self-heating or may react pyrophorously. In this case the stored hydrogen volume burns off with flames.

Attention:

Magnetized parts generate magnetic fields and are able to attract magnetizable materials. This may result in injury during handling of magnets.

Electronic devices and measuring tools may be changed in calibration or damaged by the high magnetic field strength.

Please keep magnetized magnets away from computers, displays and magnetic storage devices. Especially people with heart pacemakers must keep away from magnetic fields.

• **Results of PBT and vPvB assessment**

• **PBT:** Not applicable.

• **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

• **3.2 Chemical characterization:**

• **Description:** Permanent-magnet

• **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.

Note on cobalt classification:

The classification corresponds to Annex VI of the CLP Regulation - ATP14 has already been taken into account (mandatory from 10/2021)

CAS: 7440-48-4 EINECS: 231-158-0 Index number: 027-001-00-9 RTECS: GF 8750000	cobalt ⚠ Resp. Sens. 1, H334; Muta. 2, H341; Carc. 1B, H350; Repr. 1B, H360F; ⚠ Skin Sens. 1, H317; Aquatic Chronic 4, H413	~ 65%
CAS: 7440-19-9 EINECS: 231-128-7	samarium	~ 35%

• **Additional information:**

For the wording of the listed hazard phrases refer to section 16.

Additional information for rare earth:

See also Chapter 11

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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:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **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**
No protective measures are required in the provided form.
Dry mechanical processing of rare earth permanent alloys is only permitted under special safety precautions because dusts which are capable of self-heating or pyrophorous dusts with a tendency to explode may be produced.

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In the case of wet mechanical processing the watery processing medium reacts with the magnet wear and may form hydrogen already at room temperature.

Attention: Formation of Ex-atmospheres possible!

Part of the resulting hydrogen is stored in the material. The resulting processing sludges must be kept under a protective liquid because drying out sludges are capable of self-heating or may react pyrophorously. In this case the stored hydrogen volume burns off with flames.

Also see section 8.

• **Information about fire - and explosion protection:** No particular measures are required in the provided form.

• **7.2 Conditions for safe storage, including any incompatibilities**

• **Storage:**

Keep magnetized magnets away from computers, displays and magnetic storage devices. Especially people with heart pacemakers must keep away from magnetic fields.

• **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.

SECTION 8: Exposure controls/personal protection

• **Additional information about design of technical facilities:**

Provide a suitable suction with filter and good ventilation of the working area for all processing steps.

Suitable breathing apparatus must be used (see personal safety equipment) for repair and maintenance work on suction systems, especially when changing the filters.

• **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/m ³ (A) bzw. 5µg/m ³ (A)
MAK (Germany)	einatembare Fraktion; vgl.Abschn.XIII

• **DNELs**

DNELs for OSH purposes

In Germany, occupational exposure limits (AGW) of the Technical Rules on Hazardous Substances (TRGS) 900 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/m ³ (Ind)
		0.0063 mg/m ³ (Consumer)

• **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.

• **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>

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• 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.

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:



Safety goggles / EN 166, with side shields if necessary, must be worn in dusty environments and when working with magnetised magnets (> 50 g).

• 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:	Parts
Colour:	Metallic
Odour:	Odourless

• **pH-value:** Not applicable.

• Change in condition

Melting point/Melting range (approx.): 1,220-1,320 °C

• **Auto-ignition temperature:** Omitted (in the provided form).
Also see section 2 and/or 7.

• **Explosive properties:** Omitted (in the provided form).
Also see section 2 and/or 7.

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• Vapour pressure:	Not determined.
• Density (approx.) at 20 °C:	8.3 g/cm ³
• 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.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **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

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Rare earths (see list in Section 2) cause skin irritation depending on grain size (powder) (Skin Irrit. 2)
- **Serious eye damage/irritation**
Rare earths (see list in Section 2) cause eye irritation depending on grain size (powder) (Eye Irrit. 2)
- **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**
Suspected of causing genetic defects.
- **Carcinogenicity**
May cause cancer.
- **Reproductive toxicity**
May damage fertility.
- **STOT-single exposure** Based on available data, the classification criteria are not met.

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

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation** Observe official 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
Attention: Packing boxes with magnetized parts inside generate magnetic fields and are able to attract magnetizable materials.
- **Maritime transport IMDG:**
- **Remarks:** Non-hazardous goods from the standpoint of the specified regulations
Attention: Packing boxes with magnetized parts inside generate magnetic fields and are able to attract magnetizable materials.
- **Air Transport ICAO-TI and IATA-DGR: Non-magnetised parts:** Not classified as hazardous goods as understood in the ordinance given
Magnetised parts in packaging units: Conduct test for classification as per IATA regulations (see Class 9 / Packing Instruction 953)
If test is positive, the following apply:
ICAO/IATA class: Class 9
UN/ID number: 2807
Correct technical name: Magnetised materials

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• **Remarks:** -

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

• **Please note:**

Attention:

Magnetized parts generate magnetic fields and are able to attract magnetizable materials. This may result in injury during handling of magnets.

Electronic devices and measuring tools may be changed in calibration or damaged by the high magnetic field strength.

Please keep magnetized magnets away from computers, displays and magnetic storage devices. Especially people with heart pacemakers must keep away from magnetic fields.

• **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 safety instructions quoted (Section 3) concerning pure substances (powder):

- 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.

• **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)
ICAO: International Civil Aviation Organisation
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

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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
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
Muta. 2: Germ cell mutagenicity – Category 2
Carc. 1B: Carcinogenicity – Category 1B
Repr. 1B: Reproductive toxicity – Category 1B
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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