

1 Identification

- **Product identifier**
- **Trade name:** **TRAFOPERM[®] N2, -N3, -N4**
- **Article number:**
 - ® registered trademark of VACUUMSCHMELZE GmbH & Co. KG
- **Material Safety Data Sheet - no.:** SDB32
- **Application of the substance / the mixture** semi-finished products and parts
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 - VACUUMSCHMELZE GmbH & Co.KG
 - Grüner Weg 37
 - D-63450 Hanau
 - datasheet@vacuumschmelze.com
- **Information department:** Environmental Protection Department
- **Emergency telephone number:**
 - Tel. no.: (**49) 6181/38-0
 - Emergency tel. no.: via (**49) 6181/38-0

2 Hazard(s) identification

- **Classification (substance or mixture)**
 - Classification according to Regulation (EC) No 1272/2008 (CLP-Regulation):
 - Not applicable
 - Our semi-finished and finished products constitute manufactured articles under the terms of the REACH Regulation (EC) No. 1907/2006.
 - For articles there is no obligation to classify acc. to CLP -Regulation.
- **GHS label elements**
 - Labelling according to Regulation (EC) No 1272/2008 (CLP-Regulation):
 - Void
- **Additional VAC information:**
 - In the case of dust-producing processing, we recommend observance of the following warnings :**
- **Hazard statements** Void
- **Precautionary statements**
 - Do not breathe dust/fume/gas/mist/vapors/spray.
 - Use personal protective equipment as required.
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization:**
- **Description:** Metal in compact form
- **Dangerous components:**
 - The classifications given below reflect the classification of each pure substance respectively and are intended for information only
 - * = possible impurities

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USA

Material Safety Data Sheet

(MSDS)

Printing date 02/29/2024

Version - No. 3

Reviewed on 02/29/2024

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CAS: 7439-89-6 EINECS: 231-096-4	iron (powder) ⚠ Flammable Solids 2, H228; Self-heating substances and mixtures 1, H251	ca. 97%
CAS: 7440-21-3 EINECS: 231-130-8	silicon	< 3%

• **Additional information:** -

4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:**
If metal vapours or solid 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.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
Non-combustible.
Extinguishing agents must be adapted to the environment.
- **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.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

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

- **Personal precautions, protective equipment and emergency procedures** No special measures required.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:** No special measures required.
- **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.

-USA-

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7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
No 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):
Ensure good ventilation/exhaustion at the workplace.
Take note of emission threshold.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** See details on storage conditions
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
To avoid formation of rust:
Protect from humidity and water.
Store in a dry place
Solid material: Apply a coating of oil or use anti-rust paper
Complex parts: Store in airtight container with desiccant
Avoid contact with skin (hand perspiration) - wear gloves
- **Storage class:** Not applicable
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:**
Suction and filtering and good ventilation of the working area must be provided for processes where dust is formed.
Approved industrial vacuum cleaners of at least dust class L must be used (DIN EN 60335-2-69).

Suitable breathing apparatus must be used during repair and maintenance work on suction systems (see personal safety equipment).
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**

7439-89-6 iron (powder)	
EV (Canada)	Long-term value: 1* 5** mg/m ³ as iron;*salts, water-soluble;**welding fume
7440-21-3 silicon	
PEL (USA)	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m ³ *total dust **respirable fraction
TLV (USA)	TLV withdrawn
EL (Canada)	Long-term value: 10* 3** mg/m ³ *total dust;**respirable fraction
EV (Canada)	Long-term value: 10 mg/m ³ total dust

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• **Additional information:**

The lists that were valid during the creation 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>

• **Exposure controls**

• **Personal protective equipment:**

• **General protective and hygienic measures:** Wash hands before breaks and at the end of work.

• **Breathing equipment:**



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 P1 or P2, for example:

- Breathing mask (EN 149) FFP1 or FFP2

4 times the limit value (FFP1)

10 times the limit value (FFP2)

• **Protection of hands:**



Not required.

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

• **Material of gloves --**

• **Penetration time of glove material**

Omitted

-

• **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!

9 Physical and chemical properties

• **Information on basic physical and chemical properties**

• **General Information**

• **Appearance:**

Form: Semi-finished products/parts: e.g. strip, wire and parts

Color: Metallic

• **Odor:** Odourless

• **pH-value:** Not applicable.

• **Change in condition**

Melting point/Melting range (approx): 1,535 °C

• **Ignition temperature:** Not applicable

• **Danger of explosion:** Not applicable

• **Vapor pressure:** Not determined.

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• Density (approx) at 20 °C:	7.7 g/cm ³
• Relative density	Not determined.
• Solubility in / Miscibility with Water:	Insoluble.
• Partition coefficient (n-octanol/water):	Not determined.
• Other information	No further relevant information available.

10 Stability and reactivity

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

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:**
Irritation of the eyes in the case of massive direct contact will be mainly due to mechanical effects depending on the grain size.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
- **Carcinogenic categories**

• IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

• NTP (National Toxicology Program)

None of the ingredients is listed.

• OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.

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- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Alloys in solid form do not pose an ecological threat.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** Observe official regulations.
- **Uncleaned packagings:** Not applicable

14 Transport information

- | | |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------|
| • Special precautions for user | Not applicable. |
| • Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| • Transport/Additional information: | |
| • ADR | |
| • 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 |

15 Regulatory information

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

• Section 355 (extremely hazardous substances):

None of the ingredient is listed.

• Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

• TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

• Hazardous Air Pollutants

None of the ingredients is listed.

• Chemicals known to cause cancer:

None of the ingredients is listed.

• Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

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• Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

• Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

• TLV (Threshold Limit Value)

None of the ingredients is listed.

• NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

• National regulations:
• Information about limitation of use: --
• Technical instructions (air): The emission values and limitations must be observed!

• Water hazard class: Alloys in solid form do not pose an ecological threat.

• Other regulations, limitations and prohibitive regulations

e.g.

- 1272/2008/EG (CLP)
- 1907/2006/EG (REACH)
- German Hazardous Substances

• Chemical safety assessment: Void (for articles)

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

H228 Flammable solid.

H251 Self-heating: may catch fire.

• Department issuing SDS:

Department OPS-C SE

Tel. 06181/38-2045

• Contact:

Environmental Protection Department

Tel. 06181/38-2796

• Date of preparation / last revision 02/29/2024
• Abbreviations and acronyms:

ADR: Accord relatif au transport international 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)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flammable Solids 2: Flammable solids – Category 2

Self-heating substances and mixtures 1: Self-heating substances and mixtures – Category 1

• Sources

- GESTIS
- Technische Regeln für Gefahrstoffe

• * Data compared to the previous version altered.