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

1.1 Product identifier

Anodised Aluminium

1.2 Relevant identified uses of the substance or mixture and uses advised against

1.2.1 Relevant uses

See product information.

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company: Trotec Laser GmbH
Linzer Str. 156
4600 Wels / AUSTRIA
Phone +43 (0)72 42 239-7777
Fax +43 (0) 72 42 239-7380
Homepage www.troteclaser.com
E-mail trotec@troteclaser.com

Address enquiries to
Technical information: trotec@troteclaser.com
Safety Data Sheet: sdb@chemiebuero.de

1.4 Emergency telephone number

Company: +43 (0)72 42 239-7777

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

No classification.

2.2 Label elements

This product is an article and therefore it does not require labelling according to EC directives [REACH/CLP].

2.3 Other hazards

Physico-chemical hazards
This product does not present a fire or explosion hazard in the supplied form.
Small chips, fine shavings and dust produced by the process may catch fire immediately.
Dust can form an explosive mixture with air.

Human health dangers
Frequent persistent contact with the skin can cause dermatitis.
May cause irritation of respiratory organs (powder or dust).
Risk of mechanical irritation by dust particles (eyes, skin).
Molten Material may cause severe burns.
Thermal processing can lead to release of irritating gases and vapors.
At processing temperature, irritation of eyes, skin and respiratory tract is possible.
SECTION 3: Composition / Information on ingredients

Product-type:
The product is an article.

<table>
<thead>
<tr>
<th>Range [%]</th>
<th>Substance</th>
<th>CAS:</th>
<th>EINECS/ELINCS:</th>
<th>EU-INDEX:</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 85</td>
<td>Aluminum</td>
<td>7429-90-5</td>
<td>231-072-3</td>
<td>013-002-00-1</td>
</tr>
<tr>
<td>&lt; 6.4</td>
<td>Magnesium</td>
<td>7439-95-4</td>
<td>231-104-6</td>
<td>012-001-00-3</td>
</tr>
<tr>
<td>&lt; 2.8</td>
<td>Zinc metal (massive)</td>
<td>7440-66-6</td>
<td>231-175-3</td>
<td></td>
</tr>
<tr>
<td>&lt; 1.9</td>
<td>Manganese</td>
<td>7439-96-5</td>
<td>231-105-1</td>
<td></td>
</tr>
<tr>
<td>&lt; 1.5</td>
<td>Silicon</td>
<td>7440-21-3</td>
<td>231-130-8</td>
<td></td>
</tr>
<tr>
<td>&lt; 1.1</td>
<td>Iron</td>
<td>7439-89-6</td>
<td>231-096-4</td>
<td></td>
</tr>
<tr>
<td>&lt; 1.1</td>
<td>Chromium</td>
<td>7440-47-3</td>
<td>231-157-5</td>
<td></td>
</tr>
<tr>
<td>0 - 0.25</td>
<td>Nickel powder</td>
<td>7440-02-0</td>
<td>231-111-4</td>
<td>028-002-01-4</td>
</tr>
<tr>
<td>0 - 0.02</td>
<td>Lead</td>
<td>7439-92-1</td>
<td>231-100-4</td>
<td></td>
</tr>
</tbody>
</table>

Comment on component parts
The product is an Alloy.
Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
For full text of H-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information
In the event of symptoms seek medical treatment.

Inhalation
Ensure supply of fresh air. After inhalation of vapous of product which can set be free by thermal processing: Remove the victim into fresh air and keep him calm. In the event of symptoms seek medical treatment.

Skin contact
In case of contact with skin wash off immediately with soap and water. Consult a doctor if skin irritation persists. In case of burning: After contact with molten product cool quickly with cold water or sterile salt solution and protect with gauze.

Eye contact
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion
not applicable

4.2 Most important symptoms and effects, both acute and delayed
No information available.

4.3 Indication of any immediate medical attention and special treatment needed
Treat symptomatically. Forward this sheet to the doctor.
SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

- Product itself is non-combustible. Fire extinguishing method of surrounding areas must be considered.
- Extinguisher type D.
- Metal fire-ex powder.
- Sand.
- Cement.

Extinguishing media that must not be used

- Water.

5.2 Special hazards arising from the substance or mixture

In the event of fire the following can be released:

- Metal oxides.

5.3 Advice for firefighters

- Use self-contained breathing apparatus.
- Wear full protective suit.
- Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Ensure adequate ventilation.
- Wear suitable protective equipment. For personal protection see SECTION 8.
- Use breathing apparatus if exposed to vapours.
- Use breathing apparatus if exposed to dust.

6.2 Environmental precautions

- No special measures necessary.

6.3 Methods and material for containment and cleaning up

- Take up mechanically.

6.4 Reference to other sections

- See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Use only in well-ventilated areas.
- During thermal processing vacuuming at processing machines is necessary.
- The normal safety precautions for handling of molten, heated products must be observed.
- During mechanical processing vacuuming at processing machines is necessary.
- Avoid the formation and deposition of dust.
- Keep away from all sources of ignition - Refrain from smoking. Avoid production of dust.
- Dust can form an explosive mixture with air.
- Use explosion-proofed equipment/fittings and non-sparkling tools.
- Take precautionary measures against static discharges.
- Wash hands before breaks and after work.
- Do not eat, drink, smoke or take drugs at work.
- Contaminated work clothing should not be allowed out of the workplace.
- Take off contaminated clothing and wash before reuse.
7.2 Conditions for safe storage, including any incompatibilities

Do not store with alkalies.
Do not store together with acids.
Do not store together with oxidizing agents.
Store in a dry place.

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Ingredients with occupational exposure limits to be monitored (GB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance</td>
</tr>
<tr>
<td>Nickel powder</td>
</tr>
<tr>
<td>Aluminum</td>
</tr>
<tr>
<td>Manganese</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Silicon</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Ingredients with occupational exposure limits to be monitored (EU)

<table>
<thead>
<tr>
<th>Substance / EC LIMIT VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
8.2 Exposure controls

**Additional advice on system design**
Dust or vapours caused by fabrication and machining: use explosion-proof ventilation systems of sufficient capacity that are designed for handling suspended matter in order to satisfy the limit values set out in SECTION 8, Exposure guidelines. Use suitable discharges or exhaust ventilation if heat treatment is intended. Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances. Protection adapted to the manipulation of the fused product (danger of burning).

**Eye protection**
In the case of thermal processing: Tightly fitting goggles. (EN 166:2001)
In the event of dust formation: Tightly fitting goggles. (EN 166:2001)

**Hand protection**
Gloves (heat-resistant), impermeable gloves. The details concerned are recommendations. Please contact the glove supplier for further information.

**Skin protection**
Protective clothing.

**Other**
Avoid contact with eyes and skin.
Do not inhale smokes formed during heat treatment.

**Respiratory protection**

**Thermal hazards**
Yes

**Delimitation and monitoring of the environmental exposition**
Comply with applicable environmental regulations limiting discharge to air, water and soil.

---

**SECTION 9: Physical and chemical properties**

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Metal plates</td>
</tr>
<tr>
<td>Color</td>
<td>silver</td>
</tr>
<tr>
<td>Odor</td>
<td>odourless</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No information available.</td>
</tr>
<tr>
<td>pH-value</td>
<td>not applicable</td>
</tr>
<tr>
<td>pH-value [1%]</td>
<td>not applicable</td>
</tr>
<tr>
<td>Boiling point [°C]</td>
<td>not applicable</td>
</tr>
<tr>
<td>Flash point [°C]</td>
<td>not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas) [°C]</td>
<td>Not highly flammable.</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>not applicable</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>not applicable</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>no</td>
</tr>
<tr>
<td>Vapour pressure/gas pressure [kPa]</td>
<td>not applicable</td>
</tr>
<tr>
<td>Density [g/ml]</td>
<td>2.64 - 2.72</td>
</tr>
<tr>
<td>Bulk density [kg/m³]</td>
<td>not applicable</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>insoluble</td>
</tr>
<tr>
<td>Partition coefficient [n-octanol/water]</td>
<td>not applicable</td>
</tr>
<tr>
<td>Viscosity</td>
<td>not applicable</td>
</tr>
<tr>
<td>Relative vapour density determined in air</td>
<td>not applicable</td>
</tr>
<tr>
<td>Evaporation speed</td>
<td>not applicable</td>
</tr>
<tr>
<td>Melting point [°C]</td>
<td>565.6 - 660</td>
</tr>
<tr>
<td>Autoignition temperature [°C]</td>
<td>not self-igniting</td>
</tr>
<tr>
<td>Decomposition temperature [°C]</td>
<td>No information available.</td>
</tr>
</tbody>
</table>
9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity
Accumulation of fine dust may entail the risk of a dust explosion in the presence of air (only in circumstances of an uncontrolled release of dust from the product).

10.2 Chemical stability
Stable under normal ambient conditions (ambient temperature).

10.3 Possibility of hazardous reactions
Reactions with strong acids and alkalies.
Reactions with halogenated compounds.
Reactions with strong oxidizing agents.
Reactions with water, with formation of hydrogen.

10.4 Conditions to avoid
Dust formation.

10.5 Incompatible materials
See SECTION 10.3.

10.6 Hazardous decomposition products
For thermal decomposition to high temperature are formed irritating smoke.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity

<table>
<thead>
<tr>
<th>Substance</th>
<th>Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel powder, CAS: 7440-02-0</td>
<td>LD50, oral, Rat: &gt; 9000 mg/kg.</td>
</tr>
</tbody>
</table>

- Serious eye damage/irritation: Based on the available information, the classification criteria are not fulfilled.
- Skin corrosion/irritation: Based on the available information, the classification criteria are not fulfilled.
- Respiratory or skin sensitisation: Based on the available information, the classification criteria are not fulfilled.
- Specific target organ toxicity — single exposure: Based on the available information, the classification criteria are not fulfilled.
- Specific target organ toxicity — repeated exposure: Based on the available information, the classification criteria are not fulfilled.
- Mutagenicity: Based on the available information, the classification criteria are not fulfilled.
- Reproduction toxicity: Based on the available information, the classification criteria are not fulfilled.
- Carcinogenicity: Based on the available information, the classification criteria are not fulfilled.
- Aspiration hazard: Based on the available information, the classification criteria are not fulfilled.
- General remarks: Risk of mechanical irritation. May cause irritation of eye (vapours/fumes). May cause respiratory tract irritation (vapours/fumes). Frequent persistent contact with the skin can cause dermatitis. Frequent and permanent skin contact can cause skin reaction (sensitization). Toxicological data of complete product are not available.
SECTION 12: Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Substance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel powder, CAS: 7440-02-0</td>
<td></td>
</tr>
<tr>
<td>LC50, (96h), Danio rerio: &gt; 100 mg/l.</td>
<td></td>
</tr>
<tr>
<td>EC50, (48h), Bacteria: 250 mg/l.</td>
<td></td>
</tr>
<tr>
<td>EC50, (48h), Daphnia magna: &gt; 100 mg/l.</td>
<td></td>
</tr>
<tr>
<td>IC50, (72h), Selenastrum capricornutum: 100 mg/l.</td>
<td></td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

- **Behaviour in environment compartments**: No information available.
- **Behaviour in sewage plant**: not applicable
- **Biological degradability**: The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

The product is insoluble in water.
Ecotoxicological data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

**Product**

For recycling, consult manufacturer.

**Waste no. (recommended)**

170402
120103

**Contaminated packaging**

Uncontaminated packaging may be taken for recycling.
Contaminated packing should be disposed of as product waste.

**Waste no. (recommended)**

150102
150101
SECTION 14: Transport information

14.1 UN number

<table>
<thead>
<tr>
<th>Mode of Transport</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport by land according to ADR/RID</td>
<td>not applicable</td>
</tr>
<tr>
<td>Inland navigation (ADN)</td>
<td>not applicable</td>
</tr>
<tr>
<td>Marine transport in accordance with IMDG</td>
<td>not applicable</td>
</tr>
<tr>
<td>Air transport in accordance with IATA</td>
<td>not applicable</td>
</tr>
</tbody>
</table>

14.2 UN proper shipping name

<table>
<thead>
<tr>
<th>Mode of Transport</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport by land according to ADR/RID</td>
<td>NO DANGEROUS GOODS</td>
</tr>
<tr>
<td>Inland navigation (ADN)</td>
<td>NO DANGEROUS GOODS</td>
</tr>
<tr>
<td>Marine transport in accordance with IMDG</td>
<td>NOT CLASSIFIED AS “DANGEROUS GOODS”</td>
</tr>
<tr>
<td>Air transport in accordance with IATA</td>
<td>NOT CLASSIFIED AS “DANGEROUS GOODS”</td>
</tr>
</tbody>
</table>

14.3 Transport hazard class(es)

<table>
<thead>
<tr>
<th>Mode of Transport</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport by land according to ADR/RID</td>
<td>not applicable</td>
</tr>
<tr>
<td>Inland navigation (ADN)</td>
<td>not applicable</td>
</tr>
<tr>
<td>Marine transport in accordance with IMDG</td>
<td>not applicable</td>
</tr>
<tr>
<td>Air transport in accordance with IATA</td>
<td>not applicable</td>
</tr>
</tbody>
</table>

14.4 Packing group

<table>
<thead>
<tr>
<th>Mode of Transport</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport by land according to ADR/RID</td>
<td>not applicable</td>
</tr>
<tr>
<td>Inland navigation (ADN)</td>
<td>not applicable</td>
</tr>
<tr>
<td>Marine transport in accordance with IMDG</td>
<td>not applicable</td>
</tr>
<tr>
<td>Air transport in accordance with IATA</td>
<td>not applicable</td>
</tr>
</tbody>
</table>
14.5 Environmental hazards

Transport by land according to ADR/RID: no

Inland navigation (ADN): no

Marine transport in accordance with IMDG: no

Air transport in accordance with IATA: no

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

not applicable

SECTION 15: Regulatory information

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


- Observe employment restrictions for people

- VOC (1999/13/CE) 0 %

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information

16.1 Hazard statements

(SECTION 03)

H410 Very toxic to aquatic life with long lasting effects.

H400 Very toxic to aquatic life.

H373 May cause damage to organs through prolonged or repeated exposure.

H335+H332 Harmful if swallowed or if inhaled.

H360D May damage the unborn child. Suspected of damaging fertility.

H412 Harmful to aquatic life with long lasting effects.

H317 May cause an allergic skin reaction.

H372 Causes damage to lung through prolonged or repeated exposure if inhaled.

H351 Suspected of causing cancer.
16.2 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
ELINCS = European List of Notified Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform Chemical Information Database
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
TLV®/TWA = Threshold limit value – time-weighted average
TLV®STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative

16.3 Other information

Classification procedure

Modified position

none