

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

- **1.1 Product identifier**
  - **Trade name:** Thermodur-73 / AISi11Cu2Ni2Mg2Mn
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
 No further relevant information available.
  - **Application of the substance / the mixture** Alloy
- **1.3 Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**  
 Rheinfelden Alloys GmbH & Co. KG  
 Friedrichstrasse 80  
 D-79618 Rheinfelden  
 Tel.: +49 (0) 7623 93 - 0  
 www.rheinfelden-alloys.eu
  - **Informing department:**  
 REACH  
 Tel.: +49 (0) 7623 - 93 - 465 (Office hours: 08:30 - 15:30)  
 reach@rheinfelden-alloys.eu
- **1.4 Emergency telephone number:** Tel.: +49 (0) 7623 - 93 - 375 (24 hours)

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
  - **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

Carc. 2 H351 Suspected of causing cancer. Route of exposure: Inhalation.  
 STOT RE 2 H373 May cause damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalation.



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

- **2.2 Label elements**
  - **Labelling according to Regulation (EC) No 1272/2008**  
 The product is classified and labelled according to the CLP regulation.
  - **Hazard pictograms**



GHS07 GHS08

- **Signal word** Warning
- **Hazard-determining components of labelling:**  
 nickel

# Safety data sheet

## according to 1907/2006/EC, Article 31

Printing date 14.08.2015

Version number 2

Revision: 14.08.2015

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- **Hazard statements**

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer. Route of exposure: Inhalation.

H373 May cause damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalation.

- **Precautionary statements**

P260 Do not breathe dust.

P260 Do not breathe fume.

P280 Wear protective gloves / protective clothing.

P272 Contaminated work clothing should not be allowed out of the workplace.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **2.3 Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**

- **Description:**

Mixture of the substances listed below including additives not requiring identification.

- **Dangerous components:**

CAS: 7429-90-5 EINECS: 231-072-3 Reg.nr.: 01-211 952 9243-45-X	aluminium ☠ Pyr. Sol. 1, H250; Water-react. 2, H261	50-100%
CAS: 7440-21-3 EINECS: 231-130-8 Reg.nr.: 01-211 948 0401-47-X	silicon, containing more than 99.99 per cent by weight of silicon ☠ Flam. Sol. 2, H228	10-12%
CAS: 7440-50-8 EINECS: 231-159-6 Reg.nr.: (Rezyklat REACH ausgenommen)	copper substance with a Community workplace exposure limit	< 2.5%
CAS: 7440-02-0 EINECS: 231-111-4 Reg.nr.: 01-2119438727-29-X	nickel ☠ Carc. 2, H351; STOT RE 1, H372; ⚠ Skin Sens. 1, H317	< 2.5%
CAS: 7439-95-4 EINECS: 231-104-6 Reg.nr.: 01-211 953 7203-49-X	magnesium powder (pyrophoric) ☠ Pyr. Sol. 1, H250; Water-react. 1, H260	< 2.5%
CAS: 7439-96-5 EINECS: 231-105-1 Reg.nr.: 01-2119529243-45-X	manganese	< 0.5%

- **Additional information** For the wording of the listed risk phrases refer to section 16.

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**

- **General information** Instantly remove any clothing contaminated by the product.

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- **After inhalation**  
Supply fresh air and call for doctor for safety reasons.  
In case of unconsciousness bring patient into stable side position for transport.
- **After skin contact**  
Instantly wash with water and soap and rinse thoroughly.  
In case of skin irritations or sensitizing effects, consult doctor.
- **After eye contact**  
Rinse opened eye for several minutes under running water.  
In case of permanent aches and pains please go and see the doctor.
- **After swallowing**  
Swallowing is not considered to be a possible way of exposure.  
Call a doctor immediately.
- **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** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.
  - **For safety reasons unsuitable extinguishing agents** Water.
- **5.2 Special hazards arising from the substance or mixture**  
Can be released in case of fire:  
metal oxides
- **5.3 Advice for firefighters**
  - **Protective equipment:**  
Do not inhale explosion gases or combustion gases.  
Wear self-contained breathing apparatus.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Avoid contact with the product.
- **6.2 Environmental precautions:** No special measures required.
- **6.3 Methods and material for containment and cleaning up:**  
Dispose of contaminated material as waste according to section 13.  
Do not flush with water or aqueous cleansing agents
- **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 information on disposal.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** Avoid contact with eyes and skin.
  - **Information about protection against explosions and fires:**  
Dust can combine with air to form an explosive mixture.
- **7.2 Conditions for safe storage, including any incompatibilities**
  - **Storage**
    - **Requirements to be met by storerooms and containers:** Protect from moisture.

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- **Information about storage in one common storage facility:**  
Do not store together with acids.  
Do not store together with alkalis (caustic solutions).  
Store away from foodstuffs.
- **Further information about storage conditions:**  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.
- **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
WEL: workplace exposure limit

<b>7429-90-5 aluminium</b>	
WEL (Great Britain)	Long-term value: 10* 4** mg/m <sup>3</sup> *inhalable dust **respirable dust
<b>7440-21-3 silicon, containing more than 99.99 per cent by weight of silicon</b>	
WEL (Great Britain)	Long-term value: 10* 4** mg/m <sup>3</sup> *inhalable dust **respirable dust
<b>7440-50-8 copper</b>	
WEL (Great Britain)	Short-term value: 2** mg/m <sup>3</sup> Long-term value: 0.2* 1** mg/m <sup>3</sup> *fume **dusts and mists (as Cu)
<b>7440-02-0 nickel</b>	
WEL (Great Britain)	Long-term value: 0.5 mg/m <sup>3</sup> as Ni

### · DNELs

<b>7429-90-5 aluminium</b>		
Inhalative	DNEL (worker, long-term, local)	3.72 mg/m <sup>3</sup> (human)
	DNEL (worker, long-term, systemic)	3.72 mg/m <sup>3</sup> (human)
<b>7440-02-0 nickel</b>		
Dermal	DNEL (worker, long-term, local)	0.035 mg/cm <sup>2</sup> (human)
Inhalative	DNEL (worker, long-term, local)	0.05 mg/m <sup>3</sup> (human)
	DNEL (worker, long-term, systemic)	0.05 mg/m <sup>3</sup> (human)
	DNEL (worker, short-term, local)	4 mg/m <sup>3</sup> (human)
	DNEL (worker, short-term, systemic)	680 mg/m <sup>3</sup> (human)

- **Additional information:**  
The lists that were valid during the compilation were used as basis.

- **8.2 Exposure controls**
- **Personal protective equipment**
- **General protective and hygienic measures**  
Keep away from foodstuffs, beverages and food.  
Take off all contaminated clothing immediately.  
Wash hands during breaks and at the end of the work.

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- **Breathing equipment:**  
Approved dust respirators must be used for dusty conditions or if dust levels exceed established standards.
- **Protection of hands:**  
Protective gloves are only required in case of intense and/or prolonged skin contact with the product.  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**  
With solid dry substances permeation is not to be expected. Therefore the breakthrough-time for this protective glove has not been measured.
- **Eye protection:** Not required.

## SECTION 9: Physical and chemical properties

### · 9.1 Information on basic physical and chemical properties

#### · General Information

##### · Appearance:

- |                           |                 |
|---------------------------|-----------------|
| · <b>Form:</b>            | Solid           |
| · <b>Colour:</b>          | Silver grey     |
| · <b>Odour:</b>           | odourless       |
| · <b>Odour threshold:</b> | Not determined. |

- |                    |                 |
|--------------------|-----------------|
| · <b>pH-value:</b> | Not applicable. |
|--------------------|-----------------|

#### · Change in condition

- |                                       |                |
|---------------------------------------|----------------|
| · <b>Melting point/Melting range:</b> | Not determined |
| · <b>Boiling point/Boiling range:</b> | Not determined |

- |                       |                |
|-----------------------|----------------|
| · <b>Flash point:</b> | Not determined |
|-----------------------|----------------|

- |  |                 |
|--|-----------------|
| · <b>Inflammability (solid, gaseous)</b> | Not determined. |
|--|-----------------|

- |                                |   |
|--------------------------------|---|
| · <b>Ignition temperature:</b> | 400 °C<br>Ignition temperature of dust form |
|--------------------------------|---|

- |                                     |                 |
|-------------------------------------|-----------------|
| · <b>Decomposition temperature:</b> | Not determined. |
|-------------------------------------|-----------------|

- |                               |                              |
|-------------------------------|------------------------------|
| · <b>Self-inflammability:</b> | Product is not selfigniting. |
|-------------------------------|------------------------------|

- |                               |                           |
|-------------------------------|---------------------------|
| · <b>Danger of explosion:</b> | Product is not explosive. |
|-------------------------------|---------------------------|

#### · Critical values for explosion:

- |                 |                 |
|-----------------|-----------------|
| · <b>Lower:</b> | Not determined. |
| · <b>Upper:</b> | Not determined. |

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· <b>Vapour pressure:</b>	Not applicable.
· <b>Density</b>	Not determined
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not applicable.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with</b>	
· <b>Water:</b>	Insoluble
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
· <b>dynamic:</b>	Not applicable.
· <b>kinematic:</b>	Not applicable.
· <b>Solvent content:</b>	
· <b>Organic solvents:</b>	0.0 %
· <b>Water:</b>	0.0 %
· <b>Solids content:</b>	100.0 %
· <b>9.2 Other information</b>	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.  
Avoid humidity.
- **10.3 Possibility of hazardous reactions**  
Contact with water releases flammable gases  
Reacts with alkali (lyes)  
Reacts with acids
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**  
None in case of intended use and storage in compliance with instructions.  
Hydrogen

### SECTION 11: Toxicological information

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

· **LD/LC50 values that are relevant for classification:**

#### 7429-90-5 aluminium

Oral	LD50	> 15900 mg/kg (rat) (OECD 401)
Inhalative	LC0	0.888 mg/l/4h (rat) (OECD 403)

#### 7440-02-0 nickel

Oral	LD50	> 9000 mg/kg (rat) (OECD 401)
Inhalative	LC50	> 10.2 mg/l/1h (rat)

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- **Primary irritant effect:**
  - **Skin corrosion/irritation**  
Based on available data, the classification criteria are not met.
  - **Serious eye damage/irritation**  
Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation**  
May cause an allergic skin reaction.

· <b>Repeated dose toxicity</b>		
<b>7429-90-5 aluminium</b>		
Oral	NOAEL (28d)	302 mg/kg bw/day (rat) (OECD 407)
Inhalative	LOEC (90d)	50 mg/m <sup>3</sup> (rat) (OECD 413)
<b>7440-02-0 nickel</b>		
Oral	NOAEL (90d)	2.2 mg/kg bw/day (rat) (OECD 541)

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

Carc. 2

- **Germ cell mutagenicity**  
Based on available data, the classification criteria are not met.
- **Carcinogenicity**  
Suspected of causing cancer. Route of exposure: Inhalation.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure**  
May cause damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalation.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:**

<b>7429-90-5 aluminium</b>	
EC50	0.72 mg/l/48h (Ceriodaphnia dubia) (EPA/600/4-85/013)
NOEC (static)	> 0.044 mg/l/72h (Pseudokirchneriella subcapitata) (OECD 201)
	> 50 mg/l/96h (Lepomis cyanellus)
<b>7440-02-0 nickel</b>	
EC50	>100 mg/l/48h (Daphnia magna) (OECD 202)
LC50	15.3 mg/l/96h (Oncorhynchus mykiss)

- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:** There are no data available about the preparation.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
  - **General notes:** Generally not hazardous for water.
- **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.

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### SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

The waste code numbers mentioned are recommendations based on the probable use of the product.

· **European waste catalogue**

06 00 00	WASTES FROM INORGANIC CHEMICAL PROCESSES
06 04 00	metal-containing wastes other than those mentioned in 06 03
06 04 05*	wastes containing other heavy metals

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

### SECTION 14: Transport information

· **14.1 UN-Number**

· **ADR, ADN, IMDG, IATA** Void

· **14.2 UN proper shipping name**

· **ADR, ADN, IMDG, IATA** Void

· **14.3 Transport hazard class(es)**

· **ADR, ADN, IMDG, IATA**

· **Class** Void

· **14.4 Packing group**

· **ADR, IMDG, IATA** Void

· **14.5 Environmental hazards:**

Not applicable.

· **14.6 Special precautions for user**

Not applicable.

· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Not applicable.

· **Transport/Additional information:**

Not dangerous according to the above specifications.

· **UN "Model Regulation":**

Void

### SECTION 15: Regulatory information

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

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

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· **Hazard pictograms**



GHS07 GHS08

· **Signal word** Warning

· **Hazard-determining components of labelling:**

nickel

· **Hazard statements**

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer. Route of exposure: Inhalation.

H373 May cause damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalation.

· **Precautionary statements**

P260 Do not breathe dust.

P260 Do not breathe fume.

P280 Wear protective gloves / protective clothing.

P272 Contaminated work clothing should not be allowed out of the workplace.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations**

· **Water hazard class:** Generally not hazardous for water.

· **Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients is contained.

· **15.2 Chemical safety assessment:**

A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**

H228 Flammable solid.

H250 Catches fire spontaneously if exposed to air.

H260 In contact with water releases flammable gases which may ignite spontaneously.

H261 In contact with water releases flammable gases.

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer. Route of exposure: Inhalation.

H372 Causes damage to the lung through prolonged or repeated exposure. Route of exposure: Inhalation.

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• **Department issuing data specification sheet:**

This Material Safety Data Sheet has been drawn up in cooperation with:  
 DEKRA Assurance Services GmbH, Hanomagstr. 12, D-30449 Hanover, Germany,  
 phone: (+49) 511 42079 - 0, reach@dekra.com.

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• **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

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

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

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Flam. Sol. 2: Flammable solids, Hazard Category 2

Pyr. Sol. 1: Pyrophoric Solids, Hazard Category 1

Water-react. 1: Substances and Mixtures which, in contact with water, emit flammable gases, Hazard Category 1

Water-react. 2: Substances and Mixtures which, in contact with water, emit flammable gases, Hazard Category 2

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Carc. 2: Carcinogenicity, Hazard Category 2

STOT RE 1: Specific target organ toxicity - Repeated exposure, Hazard Category 1

STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2

• **\* Data compared to the previous version altered.**

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