Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 10/11/2011 Reviewed on 10/04/2011

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

- **Product identifier**
- **Trade name:** NiCr19-AlMnCu ®
- **Material Safety Data Sheet - no.:** IB120
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation** 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 Hazards 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):
Not applicable
-

- **Additional VAC information:**

In the case of dust-producing processing, we recommend observance of the following warnings :

- **Hazard statements**

May cause an allergic skin reaction.
Suspected of causing cancer.
Causes damage to organs through prolonged or repeated exposure.

- **Precautionary statements**

Do not breathe dust/fume/gas/mist/vapours/spray.
In case of inadequate ventilation wear respiratory protection.
Use personal protective equipment as required.
Avoid release to the environment.
Do no eat, drink or smoke when using this product.
Get medical advice/attention if you feel unwell.

- **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

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CAS: 7440-02-0 EINECS: 231-111-4 Index number: 028-002-00-7	nickel	T R48/23; Xn R40; Xi R43 Carc. Cat. 3 H351; H372; H317	~ 74%
CAS: 7440-47-3 EINECS: 231-157-5	chromium		~ 19%
CAS: 7429-90-5 EINECS: 231-072-3 Index number: 013-002-00-1	aluminium	F R11-15 H228; H261	~ 3%
CAS: 7440-50-8 EINECS: 231-159-6	copper		~ 2%
CAS: 7439-96-5 EINECS: 231-105-1	manganese		~ 2%

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

4 First aid measures

• **Description of first aid measures**

• **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 Firefighting measures

• **Extinguishing media**
• **Suitable extinguishing agents:**
Non-combustible.
Extinguishing agents must be adapted to the environment.
• **Special hazards arising from the substance or mixture** No further relevant information available.
• **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.

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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):
  Prevent formation of dust.
  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:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **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 M must be used (DIN EN 60335-2-69).
  Recommended: dust class H

  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:**	
7440-02-0 nickel	
EL (Canada)	0.05 mg/m³ as Ni; ACIGH A1, IARC 1
EV (Canada)	1* 0.2** 0.1*** mg/m³ inh.;*metal;**insol. compds.;***soluble compds.
PEL (USA)	1 mg/m³
REL (USA)	0.015 mg/m³ as Ni; See Pocket Guide App. A
TLV (USA)	1.5* 0.2** 0.1*** mg/m³ inhal.fraction;*elemental;**insol.,***sol.compds.
7440-47-3 chromium	
EL (Canada)	Short-term value: C 0.1*** ppm Long-term value: 0.5* 0.01** 0.025*** mg/m³ IARC1,ACGIH A1;*metal, inorg.**insol.;**water-sol.
EV (Canada)	0.05 mg/m³
PEL (USA)	1* 0.5** mg/m³ *metal;**inorganic compds., as Cr
REL (USA)	0.5* ** mg/m³ *metal, **inorg.compds.; See Pocket Guide App. C
TLV (USA)	0.5 mg/m³

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7429-90-5 aluminium	
EL (Canada)	1.0 mg/m³ metal and insoluble compdounds, respirable
EV (Canada)	5 mg/m³ aluminium-containing (as aluminium)
PEL (USA)	15* 5** mg/m³ *total dust **respirable fraction
REL (USA)	10* 5** mg/m³ Metal *total dust **respirable fraction
TLV (USA)	1* mg/m³ *as respirable fraction
7440-50-8 copper	
EL (Canada)	1* 0.2** mg/m³ *dusts and mists; **fume
EV (Canada)	0.2* 1** mg/m³ as copper, *fume;**dust and mists
PEL (USA)	1* 0.1** mg/m³ as Cu *dusts and mists **fume
REL (USA)	1* 0.1** mg/m³ as Cu *dusts and mists **fume
TLV (USA)	1* 0.2** mg/m³ *dusts and mists; **fume; as Cu
7439-96-5 manganese	
EL (Canada)	0.2 mg/m³ as Mn; R
EV (Canada)	0.2 mg/m³ as manganese
PEL (USA)	Short-term value: C 5* ** mg/m³ as Mn *and inorganic compounds **fume
REL (USA)	Short-term value: 3* ** mg/m³ Long-term value: 1* ** mg/m³ as Mn *and inorganic compounds **fume
TLV (USA)	(0.2) NIC-0.02* NIC-0.2* mg/m³ as Mn;+ inorg. comp.;*resp.,**inh. fraction:NIC-A4

- **Additional Occupational Exposure Limit Values for possible hazards during processing:**
  If the occurrence of chrome (VI) compounds cannot be ruled out, the appropriate workplace-related limit values must also be monitored!
- **Additional information:** The lists that were valid during the creation were used as basis.
- **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.
- **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 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!

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):	1350°C
• **Auto igniting:**	Not applicable
• **Danger of explosion:**	Not applicable
• **Vapor pressure:**	Not determined.
• **Density (approx) at 20°C:**	8.1 g/cm³
• **Relative density**	Not determined.
• **Solubility in / Miscibility with**	
Water:	Insoluble.
• **Other information**	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **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:**
- **LD/LC50 values:**

The following applies for the pure substance (here: nickel):

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7440-02-0 nickel		
Oral	LD50	> 9000 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** see sensitization
- **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:**
In the case of repeated and prolonged contact with the skin with metallic nickel there is a possibility of sensitization.
- **Subacute to chronic toxicity:**
Nickel in the form of a respirable dust is under suspicion as a possible cause of cancer in humans (Carc.2 (Cat. 2) / CLP-Verordnung)
- **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.

12 Ecological information

- **Toxicity**
- **Acquatic 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.
- **Mobility in soil** No further relevant information available.
- **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 offical regulations.
- **Uncleaned packagings:** Not applicable

14 Transport information

- **Transport/Additional information:**
- **Land transport DOT / TDG**
- **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

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15 Regulatory information

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

- **Section 355 (extremely hazardous substances):**

None of the ingredient is listed.

- **Section 313 (Specific toxic chemical listings):**

All ingredients are listed.

- **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

- **Proposition 65**
- **Chemicals known to cause cancer:**

7440-02-0	nickel

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

- **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.

- **Cancerogenity categories**
- **EPA (Environmental Protection Agency)**

7440-47-3	chromium	D
7440-50-8	copper	D
7439-96-5	manganese	D

- **IARC (International Agency for Research on Cancer)**

7440-02-0	nickel	2B
7440-47-3	chromium	3

- **NTP (National Toxicology Program)**

7440-02-0	nickel	R

- **TLV (Threshold Limit Value established by ACGIH)**

7440-02-0	nickel	A5
7440-47-3	chromium	A4
7429-90-5	aluminium	A4

- **MAK (German Maximum Workplace Concentration)**

7440-02-0	nickel	1

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

7440-02-0	nickel

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

- **National regulations:**
- **Other regulations, limitations and prohibitive regulations**
  e.g.
  - guidelines 67/548/ECC, 1999/45/EC
  - 1272/2008/EG (CLP)
  - 1907/2006/EG (REACH)
  - German Hazardous Substances
- **Chemical safety assessment:** Void (for articles)

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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:

H228 Flammable solid.
H261 In contact with water releases flammable gas.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H372 Causes damage to organs through prolonged or repeated exposure.

R11 Highly flammable.
R15 Contact with water liberates extremely flammable gases.
R40 Limited evidence of a carcinogenic effect.
R43 May cause sensitization by skin contact.
R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

- **Department issuing MSDS:**

Department HT-F
Tel. 06181/38-2045

- **Contact:**

Environmental Protection Department
Tel. 06181/38-2359

- **Abbreviations and acronyms:**

ACGIH: American Conference of Governmental Industrial Hygienists
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

- **Sources**

- KÜHN-BIRETT-Merkblätter gefährlicher Arbeitsstoffe
- Technische Regeln für Gefahrstoffe
- BIA-Gefahrstoffdatenbank