

## Safety Data Sheet acc. to OSHA HCS

Printing date 10/19/2015

Reviewed on 10/10/2015

### 1 Identification

- **Product identifier**
- **Trade name:** 901 HI-TEMP AISI 681 & 682
- **Application of the substance / the mixture** Metal working
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Carpenter Technology Corp  
PO Box 14662, Reading, PA 19612  
110 West Bern Street  
READING, PA 19601  
USA
- **Information department:** Health and Safety Department
- **Emergency telephone number:** During normal opening times: +1 (610) 208-2134

### 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

- Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Carc. 2 H351 Suspected of causing cancer.
- STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS07

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

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
nickel  
cobalt
- **Hazard statements**  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause an allergic skin reaction.  
Suspected of causing cancer.

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*Causes damage to organs through prolonged or repeated exposure.*

· **Precautionary statements**

*Do not breathe dust/fume/gas/mist/vapors/spray.*

*[In case of inadequate ventilation] wear respiratory protection.*

*Wear protective gloves.*

*Wash thoroughly after handling.*

*Do not eat, drink or smoke when using this product.*

*Contaminated work clothing must not be allowed out of the workplace.*

*Obtain special instructions before use.*

*Do not handle until all safety precautions have been read and understood.*

*Specific treatment (see on this label).*

*If experiencing respiratory symptoms: Call a POISON CENTER/doctor.*

*Wash contaminated clothing before reuse.*

*If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.*

*IF exposed or concerned: Get medical advice/attention.*

*If skin irritation or rash occurs: Get medical advice/attention.*

*Get medical advice/attention if you feel unwell.*

*IF ON SKIN: Wash with plenty of water.*

*Store locked up.*

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

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 3

Fire = 0

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = \*3

Fire = 0

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

7440-02-0	nickel	25-50%
7440-47-3	chromium	10-<25%
7439-98-7	molybdenum	2.5-<10%
7440-32-6	titanium	2.5-<10%
7440-48-4	cobalt	0.1-<1%

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## 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**  
Supply fresh air and to be sure call for a doctor.  
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **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:** The product is not flammable.
- **Special hazards arising from the substance or mixture**  
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Mount respiratory protective device.
- **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.

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Not applicable.
- **Information about protection against explosions and fires:** Not applicable.
- **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:** Keep receptacle tightly sealed.

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· **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

### 7440-02-0 nickel

PEL	Long-term value: 1 mg/m <sup>3</sup>
REL	Long-term value: 0.015 mg/m <sup>3</sup> as Ni; See Pocket Guide App. A
TLV	Long-term value: 1.5* mg/m <sup>3</sup> elemental, *inhalable fraction

### 7440-47-3 chromium

PEL	Long-term value: 1* 0.5** mg/m <sup>3</sup> *metal; **inorganic compds., as Cr
REL	Long-term value: 0.5* mg/m <sup>3</sup> *metal+inorg.compds.as Cr; See Pocket Guide App. C
TLV	Long-term value: 0.5 mg/m <sup>3</sup>

### 7439-98-7 molybdenum

PEL	Long-term value: 15* mg/m <sup>3</sup> *Total dust
TLV	Long-term value: 10* 3** mg/m <sup>3</sup> as Mo; *inhalable fraction ** respirable fraction

· **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.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

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

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· **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**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Safety glasses

## 9 Physical and chemical properties

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

· **General Information**

· **Appearance:**

<b>Form:</b>	Solid
<b>Color:</b>	According to product specification
<b>Odor:</b>	Characteristic
<b>Odour threshold:</b>	Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	4 °C (39 °F)

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not determined.

· **Ignition temperature:** 0 °C (32 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

<b>Lower:</b>	0.0 Vol %
<b>Upper:</b>	0.0 Vol %

· **Vapor pressure:** Not applicable.

· **Density at 20 °C (68 °F):** 5.74434 g/cm<sup>3</sup> (47.937 lbs/gal)

· **Relative density** Not determined.

· **Vapour density** Not applicable.

· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**

**Water:** Insoluble.

· **Partition coefficient (n-octanol/water):** Not determined.

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· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
· <b>Solids content:</b>	
	94.0 %
· <b>Other information</b>	
	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** No dangerous reactions known.
- **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 that are relevant for classification:**

**7440-48-4 cobalt**

Oral	LD50	6170 mg/kg (rat)
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- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.

- **Sensitization:**
- Sensitization possible through inhalation.
- Sensitization possible through skin contact.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:  
Harmful  
Irritant

- **Carcinogenic categories**

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

7440-02-0	nickel	1
7440-47-3	chromium	3
7440-48-4	cobalt	2B
7439-92-1	lead	2B

· **NTP (National Toxicology Program)**

7440-02-0	nickel	R
7439-92-1	lead	R

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· **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.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
*Water hazard class 2 (Self-assessment): hazardous for water*  
*Do not allow product to reach ground water, water course or sewage system.*  
*Danger to drinking water if even small quantities leak into the ground.*
- **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:**  
*Must not be disposed of together with household garbage. Do not allow product to reach sewage system.*
- **Uncleaned packagings:**
- **Recommendation:** *Disposal must be made according to official regulations.*

### 14 Transport information

- |  |                 |
|--|-----------------|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, ADN, IMDG, IATA</b></li> </ul>  | not regulated   |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT, ADN, IMDG, IATA</b></li> </ul>                            | not regulated   |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT, ADN, IMDG, IATA</b></li> <li>· <b>Class</b></li> </ul> | not regulated   |
| <ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>DOT, IMDG, IATA</b></li> </ul>   | not regulated   |
| <ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> <li>· <b>Marine pollutant:</b></li> </ul>                                | No              |
| <ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> </ul>  | Not applicable. |

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- |  |                 |
|--|-----------------|
| <b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| <b>· UN "Model Regulation":</b>  | not regulated   |

### 15 Regulatory information

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

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

7723-14-0	red phosphorus
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**· Section 313 (Specific toxic chemical listings):**

7440-02-0	nickel
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7440-47-3	chromium
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7440-48-4	cobalt
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7429-90-5	aluminium
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7440-50-8	copper
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7439-96-5	manganese
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7723-14-0	red phosphorus
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7439-92-1	lead
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**· TSCA (Toxic Substances Control Act):**

All ingredients are listed.

**· Proposition 65**

**· Chemicals known to cause cancer:**

7440-02-0	nickel
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7440-48-4	cobalt
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7439-92-1	lead
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**· Chemicals known to cause reproductive toxicity for females:**

7439-92-1	lead
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**· Chemicals known to cause reproductive toxicity for males:**

7439-92-1	lead
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**· Chemicals known to cause developmental toxicity:**

7439-92-1	lead
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**· Carcinogenic categories**

**· EPA (Environmental Protection Agency)**

7440-47-3	chromium			
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D

7440-50-8	copper			
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D

7439-96-5	manganese			
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D

7440-42-8	boron			
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I (oral)

7723-14-0	red phosphorus			
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D

7439-92-1	lead			
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· <b>TLV (Threshold Limit Value established by ACGIH)</b>		
7440-02-0	nickel	A5
7440-47-3	chromium	A4
7439-98-7	molybdenum	A3
7440-48-4	cobalt	A3
7429-90-5	aluminium	A4
7439-92-1	lead	A3
· <b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>		
7440-02-0	nickel	

- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS08

- **Signal word** *Danger*

- **Hazard-determining components of labeling:**

*nickel**cobalt*

- **Hazard statements**

*May cause allergy or asthma symptoms or breathing difficulties if inhaled.**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/vapors/spray.**[In case of inadequate ventilation] wear respiratory protection.**Wear protective gloves.**Wash thoroughly after handling.**Do not eat, drink or smoke when using this product.**Contaminated work clothing must not be allowed out of the workplace.**Obtain special instructions before use.**Do not handle until all safety precautions have been read and understood.**Specific treatment (see on this label).**If experiencing respiratory symptoms: Call a POISON CENTER/doctor.**Wash contaminated clothing before reuse.**If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.**IF exposed or concerned: Get medical advice/attention.**If skin irritation or rash occurs: Get medical advice/attention.**Get medical advice/attention if you feel unwell.**IF ON SKIN: Wash with plenty of water.**Store locked up.**Dispose of contents/container in accordance with local/regional/national/international regulations.*

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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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.*

· **Department issuing SDS:** Environment protection department.

· **Date of preparation / last revision** 10/19/2015 / 3

· **Abbreviations and acronyms:**

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

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1

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

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