1 Identification

Product name: Nickel Chromium wire

Stock number: 40438
CAS Number: 11106-97-1

1.1 Relevant identified uses of the substance or mixture and uses advised against.

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier: Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:
During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

2.1 Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

- GHS08 Health hazard
  - Carc. 2 H351 Suspected of causing cancer.

- GHS07 Skin Sens. 1 H317 May cause an allergic skin reaction.

Hazard pictograms

GHS07 GHS08

Signal word Warning

Hazard statements
- H317 May cause an allergic skin reaction.
- H351 Suspected of causing cancer.

Precautionary statements
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P281 Use personal protective equipment as required.
- P363 Wash contaminated clothing before reuse.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification
D2A - Very toxic material causing other toxic effects

Classification system

HMIS ratings (scale 0-4)

- Health (acute effects) = 0
- Flammability = 0
- Physical Hazard = 0

Other hazards

Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances
CAS# Description:
11106-97-1 Nickel Chromium

4 First-aid measures

4.1 Description of first aid measures

General information No special measures required.
After inhalation
Supply fresh air and to be sure call for a doctor.
Seek medical treatment in case of complaints.

After skin contact Generally the product does not irritate the skin.

After eye contact Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing If symptoms persist consult doctor.

(Contd. on page 2)
38.0.2 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: Special powder for metal fires. Do not use water.

For safety reasons unsuitable extinguishing agents: Water

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

- Chromium oxides
- Nickel oxides

Advice for firefighters

Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Not required.

Environmental precautions: Do not allow product to reach sewage system or any water course.

Methods and material for containment and cleaning up: Dispose of contaminated material as waste according to section 13.

Prevention of secondary hazards: 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

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Prevent formation of dust.

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: Do not store together with acids.

Further information about storage conditions:

- Keep container tightly sealed.

- Store in cool, dry conditions in well sealed containers.

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 section 7.

Control parameters

Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional Occupational Exposure Limit Values for related materials or possible hazards during processing:

<table>
<thead>
<tr>
<th>Chromium</th>
<th>7440-47-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEL (USA)</td>
<td>Long-term value: 1 mg/m³</td>
</tr>
<tr>
<td>REL (USA)</td>
<td>Long-term value: 0.015 mg/m³</td>
</tr>
<tr>
<td>TLV (Canada)</td>
<td>Long-term value: 0.05 mg/m³</td>
</tr>
<tr>
<td>EL (Canada)</td>
<td>Long-term value: 0.05 mg/m³</td>
</tr>
<tr>
<td>EV (Canada)</td>
<td>Long-term value: 0.05 mg/m³</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Nickel</th>
<th>7440-02-0</th>
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<tbody>
<tr>
<td>PEL (USA)</td>
<td>Long-term value: 1 mg/m³</td>
</tr>
<tr>
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</tr>
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<td>EV (Canada)</td>
<td>Long-term value: 0.05 mg/m³</td>
</tr>
</tbody>
</table>

Additional information: No data

Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Maintain an ergonomically appropriate working environment.

Breathing equipment: Not required.

Protection of hands: Not required.

Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form: Solid in various forms
38.0.2

Color: Silver-colored
Odor: Odorless
Odor threshold: Not determined.

Change in condition
Melting point/Melting range: 1400 °C (2552 °F)
Boiling point/Boiling range: Not determined
Sublimation temperature / start: Not determined
Flammability (solid, gaseous) Not determined.
Ignition temperature: Not determined
Decomposition temperature: Not determined
Auto igniting: Not determined.

Danger of explosion: Not determined.
Explosion limits:
Lower: Not determined
Upper: Not determined

Vapor pressure: Not applicable.
Density: Not determined
Relative density Not determined.
Vapor density Not applicable.
Evaporation rate Not applicable.
Solubility in / Miscibility with Water: Insoluble
 Partition coefficient (n-octanol/water): Not determined.
Viscosity:
dynamic: Not applicable.
kinematic: Not applicable.

Other information No further relevant information available.

10 Stability and reactivity

Reactivity No information known.
Chemical stability Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions Reacts with strong oxidizing agents
Conditions to avoid No further relevant information available.
Incompatible materials:
Acids
Oxidizing agents
Hazardous decomposition products:
Chromium oxides
Nickel oxides

11 Toxicological information

Information on toxicological effects
Acute toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.
LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: May cause irritation
Eye irritation or corrosion: May cause irritation
Sensitization: May cause an allergic skin reaction.
Germ cell mutagenicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.
Carcinogenicity: Suggested of causing cancer.
IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.
Reproductive toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

12 Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Additional ecological information:
General notes: Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
Avoid transfer into the environment.
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 Consult state, local or national regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number
DOT, ADN, IMDG, IATA Not applicable
UN proper shipping name
DOT, ADN, IMDG, IATA
Not applicable

Transport hazard class(es)
DOT, ADR, ADN, IMDG, IATA
Class
Not applicable

Packing group
DOT, IMDG, IATA
Not applicable

Environmental hazards:
Not applicable.

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:
DOT
Marine Pollutant (DOT):
No

UN "Model Regulation":
-

15 Regulatory information
Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

GHS07 GHS08

Signal word Warning
Hazard statements
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.

Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory. All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings)
11106-97-1 Nickel Chromium

California Proposition 65

Prop 65 - Chemicals known to cause cancer
11106-97-1 Nickel Chromium

Prop 56 - Developmental toxicity Substance is not listed.
Prop 56 - Developmental toxicity, male Substance is not listed.

Information about limitation of use: For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed. Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

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

16 Other information
Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department
Date of preparation / last revision 11/24/2015 / -

Abbreviations and acronyms:
ADN: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)
IATA: International Air Transport Association (IATA)
IARC: International Agency for Research on Cancer
INC: International Nickel Conference
LD50: Lethal dose, 50 percent
LC50: Lethal concentration, 50 percent
MDL: Method Detection Limit
µPb: µg/liter, very Persistent and very Bioaccumulative
NTP: National Toxicology Program (USA)
OSHA: Occupational Safety and Health Administration (USA)
SVHC: Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006
WHMIS: Workplace Hazardous Materials Information System (Canada)