

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Name:** Inconel 718 Alloy Nanoparticles / Nanopowder

**Product Number:** All applicable American Elements product codes, e.g. NI-CRFE-01-SLD.0305MO

**CAS #:**

**Relevant identified uses of the substance:** Scientific research and development

**Supplier details:**

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351

**Emergency telephone number:**

+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

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

GHS08 Health hazard

Carc. 2

H351 Suspected of causing cancer.

STOT RE 1 H372 Causes damage to the lung, the kidneys and the liver through prolonged or repeated exposure. Route of exposure: Inhalative.

GHS07

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

Hazards not otherwise classified

No data available

GHS label elements

GHS label elements, including precautionary statements

Hazard pictograms



GHS07 GHS08

Signal word

Danger

Hazard-determining components of labeling:

Nickel

Hazard statements

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

H372 Causes damage to the lung, the kidneys and the liver through prolonged or repeated exposure.

Route of exposure: Inhalative.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P261 Avoid breathing dust/fume/gas/mist/vapors/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.

WHMIS classification

D2B - Toxic material causing other toxic effects

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

Health (acute effects) = 0

Flammability = 0

Physical Hazard = 0

Other hazards

Results of PBT and vPvB assessment

PBT:

N/A

vPvB:

N/A

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization: Mixtures

Dangerous components:

7440-02-0 Nickel Carc. 2, H351; STOT RE 1, H372; Skin Sens. 1, H317

Additional information

None known.

Non-Hazardous Ingredients

7440-47-3 Chromium

7439-89-6 Iron

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## SECTION 4. FIRST AID MEASURES

Description of first aid measures

General information

No special measures required.

If inhaled:

Supply fresh air and to be sure call for a doctor.

Seek medical treatment in case of complaints.

In case of skin contact:

Generally the product does not irritate the skin.

In case of eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.  
If swallowed:  
If symptoms persist consult doctor.  
Information for doctor  
Most important symptoms and effects, both acute and delayed  
No data available  
Indication of any immediate medical attention and special treatment needed  
No data available

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## **SECTION 5. FIREFIGHTING 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:  
Toxic metal oxide fume  
Advice for firefighters  
Protective equipment:  
No special measures required.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures  
Not required.  
Environmental precautions:  
Do not allow material to be released to the environment without official permits.  
Methods and materials for containment and cleanup:  
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.

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## **SECTION 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.  
Information about protection against explosions and fires:  
No special measures required.  
Conditions for safe storage, including any incompatibilities  
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.

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

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

Specific end use(s)

No data available

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## SECTION 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:

7440-02-0 Nickel (77.0%)

PEL (USA)

Long-term value: 1 mg/m<sup>3</sup>

REL (USA)

Long-term value: 0.015 mg/m<sup>3</sup>

as Ni; See Pocket Guide App. A

TLV (USA)

Long-term value: 1.5\* mg/m<sup>3</sup>

elemental, \*inhalable fraction

EL (Canada)

Long-term value: 0.05 mg/m<sup>3</sup>

as Ni; ACIGH A1, IARC 1

EV (Canada) Long-term value: 1\* 0.2\*\* 0.1\*\*\* mg/m<sup>3</sup>

inh.;\*metal;\*\*insol. compds.;\*\*\*soluble compds.

7440-47-3 Chromium (15.5%)

PEL (USA)

Long-term value: 1\* 0.5\*\* mg/m<sup>3</sup>

\*metal;\*\*inorganic compds., as Cr

REL (USA)

Long-term value: 0.5\* mg/m<sup>3</sup>

\*metal+inorg.compds.as Cr;See Pocket Guide App. C

TLV (USA)

Long-term value: 0.5 mg/m<sup>3</sup>

EL (Canada)

Short-term value: C 0.1\*\*\* ppm

Long-term value: 0.5\* 0.01\*\* 0.025\*\*\* mg/m<sup>3</sup>

IARC1,ACGIH A1;\*metal, inorg.\*\*insol.;\*\*water-sol.

EV (Canada) Long-term value: 0.05 mg/m<sup>3</sup>

7439-89-6 Iron (7.5%)

EV (Canada) Long-term value: 1\* 5\*\* mg/m<sup>3</sup>

as iron;\*salts, wate

r-soluble;\*\*welding fume

TLV (Canada) Long-term value: 5 mg/m<sup>3</sup>

Additional information:

No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Maintain an ergonomically appropriate working environment.

Breathing equipment:

Not required.

Protection of hands:

Not required.

Penetration time of glove material (in minutes)

No data available

Eye protection:

Safety glasses

Body protection:

Protective work clothing.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Solid in various forms

Color: Silver-colored

Odor: No data available

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: No data available

Boiling point/Boiling range: No data available

Sublimation temperature / start: No data available

Flammability (solid, gas)

No data available.

Ignition temperature: No data available

Decomposition temperature: No data available

Autoignition: Product is not selfigniting.

Danger of explosion: No data available.

Explosion limits:

Lower: No data available

Upper: No data available

Vapor pressure: N/A

Density: No data available

Relative density

No data available.

Vapor density

N/A

Evaporation rate

N/A

Solubility in Water (H<sub>2</sub>O): Insoluble

Partition coefficient (n-octanol/water): No data available.

Viscosity:

Dynamic: N/A

Kinematic: N/A

Solvent content:

Organic solvents: 0.0 %

Solids content: 100.0 %

Other information

No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity

No data available

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 data available

Incompatible materials:

Acids

Oxidizing agents

Hazardous decomposition products:

Toxic metal oxide fume

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## SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.

LD/LC50 values that are relevant for classification:

No data

Skin irritation or corrosion:

No irritant effect.

Eye irritation or corrosion:

No irritant effect.

Sensitization:

May cause an allergic skin reaction.

Germ cell mutagenicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for components in this product.

Carcinogenicity:

Suspected of causing cancer.

IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.

EPA-CBD: Carcinogenic potential cannot be determined.

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.

Reproductive toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for components in this product.

Specific target organ system toxicity - repeated exposure:

Causes damage to the lung, the kidneys and the liver through prolonged or repeated exposure. Route of exposure: Inhalative.

Specific target organ system toxicity - single exposure:

No effects known.

Aspiration hazard:

No effects known.

Subacute to chronic toxicity:

No effects known.

Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for components in this product.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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

Irritant

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## SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity:

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Additional ecological information:

Do not allow product to reach groundwater, water courses, or sewage systems.

Do not allow material to be released to the environment without official permits.

Danger to drinking water if even small quantities leak into the ground.

Avoid transfer into the environment.

Results of PBT and vPvB assessment

PBT:

N/A

vPvB:

N/A

Other adverse effects

No data available

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## SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation

Consult official regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

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## SECTION 14. TRANSPORT INFORMATION

UN-Number

DOT, ADN, IMDG, IATA

N/A

UN proper shipping name

DOT, ADN, IMDG, IATA

N/A

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA

Class

N/A

Packing group

DOT, IMDG, IATA

N/A

Environmental hazards:

Marine pollutant (IMDG):

No

Special precautions for user

N/A

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

N/A

Transport/Additional information:

DOT

Marine Pollutant (DOT):

No

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## SECTION 15. REGULATORY INFORMATION

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

GHS GHS label elements, including precautionary statements

Hazard pictograms

GHS07

GHS08

Signal word

Danger

Hazard-determining components of labeling:

Nickel

Hazard statements

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H351 Suspected of causing cancer.

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#### 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)

7440-02-0 Nickel

77.0%

7440-47-3 Chromium

15.5%

California Proposition 65

Prop 65 - Chemicals known to cause cancer

7440-02-0 Nickel

77.0%

Prop 65 - Developmental toxicity

None of the ingredients are listed.

Prop 65 - Developmental toxicity, female

None of the ingredients are listed.

Prop 65 - Developmental toxicity, male

None of the ingredients are listed.

Information about limitation of use:

For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.

None of the ingredients are 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.

None of the ingredients is listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use)

None of the ingredients is listed.

Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

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## SECTION 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.