

Material Safety Data Sheet (MSDS)

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Identifiers

Product Name: **Perkalloy**
Purity: 50% Fe / 50% Ni
Product Number: NN-RSPE
Source: Engineering Analytics Laboratories
(Accredited to ISO 17034:2016, #122465 by PJLA)
CAS-No.: 7440-02-0 (Nickel) / 7439-89-6 (Iron)

1.2 Relevant Identified Uses

Identified Uses: Equipment Calibration
Advised Against: None suggested

1.3 Company Identification (MSDS Supplier)

Company: Engineering Analytics Laboratories
Address: PO Box 500146, Malabar, FL 32950, USA
Telephone: +1 321-720-6578
E-mail: EngAnLab@gmail.com

1.4 Emergency Telephone Number

Emergencies: **Dial 911 first!**
Emergency Phone #: +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram:



Signal Word: Health Hazard (Nickel)
Skin Allergy
Danger

Hazard Statement(s): H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H372 Causes damage to organs through prolonged or repeated exposure.

Precautionary Statement(s): P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P264 Wash thoroughly after handling.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P321 Specific treatment (see below).

Precautionary Statement(s):

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards Not Otherwise Classified (HNOC) or Not Covered by GHS

No data available

3. COMPOSITION (INFORMATION ON INGREDIENTS)

3.1 Substances

Formula: Perkalloy (Fe/Ni : 50/50)
Molecular Weight: 26.98 g/mol
CAS-No.: 7440-02-0 (Nickel) / 7439-89-6 (Iron)
EC-No.: 231-111-4
Chemical Char.: Mixture

Hazardous components

Component	Classification	Concentration
Nickel	Carc. 2, H351; STOT RE 1, H372 Skin Sens. 1, H317	50%
Iron		50%

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of First Aid Measures

General Advice

Symptoms of poisoning may occur after several hours; allow medical observation for at least 48 hours after an accident. Show this MSDS to the attending physician.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration, and call emergency services. Consult a physician after inhalation.

In case of skin contact

Wash off with soap and plenty of water. If irritation persists, consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Turn the individual's head and/or body to one side, and rinse the mouth with water (if safe and possible to do so). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for Firefighters

Wear self-contained breathing apparatus for firefighting, if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment (PPE), and Emergency Procedures

Gloves and eye protection suggested.

For personal protection see section 8.

6.2 Environmental Precautions

Inform local authorities if large quantities enter the water or sewage system.

6.3 Clean-up and Containment Methods

Pick up and arrange disposal. Sweep up and shovel.

6.4 Disposal

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for Safe Handling

In general, use skin and eye protection. For precautions see section 2.2.

7.2 Conditions for Safe Storage, including incompatibilities

Keep container tightly closed in a dry place.

Component	CAS #	Value	Control Parameters	Basis
Nickel	7440-02-0	PEL	1.000000 mg/m ³	Long-term value
		REL	0.015 mg/m ³	As Ni
		TLV	1.5 mg/m ³	Elemental inhalable fraction

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Components with workplace control parameters:

None applicable

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday.

Personal Protective Equipment (PPE)

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Control environmental exposure to prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Basic Physical and Chemical Properties

- a) Appearance Form: Wire, Light Grey
- b) Odor: Odorless
- c) Odor Threshold: *No data available*
- d) pH: *No data available*
- e) Melting/freezing point:
Melting point: 1539 °C (2802 °F).
- f) Initial boiling point and boiling range:
2730 °C (4946 °F)
- g) Curry Point: 596 ± 2 °C¹ (Literature) 482 ± 2 °C (EA Labs Specific)
- h) Flash point: *Not applicable*
- i) Evaporation rate: *No data available*
- j) Flammability (solid, gas): May form combustible dust concentrations in air.
- k) Upper/lower flammability or explosive limits: *No data available*
- l) Vapor pressure: *No data available*
- m) Vapor density: *No data available*
- n) Relative density: 8.91 g/cm³ at 25 °C (77 °F)
- o) Water Solubility: Insoluble or difficult to mix
- p) Partition coefficient: n-octanol/water: *No data available*
- q) Auto-ignition Temperature: Product is not self-igniting
- r) Decomposition Temperature: *No data available*
- s) Viscosity: *No data available*
- t) Explosive Properties: *No data available*
- u) Oxidizing Properties: *No data available*

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical Stability

Stable under recommended storage conditions.

10.3 Possibility of Hazardous Reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible Materials

Oxidizing agents

10.6 Hazardous Decomposition Products

Hazardous decomposition products formed under fire conditions: *No data available*

Other decomposition products: *No data available*

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Toxicological Effects

Acute Toxicity: *No data available*

Inhalation: *No data available*

Dermal: *No data available*

Skin Corrosion/Irritation: Potential irritant (Nickel)

Serious Eye Damage/Eye Irritation: *No data available*

Respiratory or Skin Sensitization: *No data available*

Germ Cell Mutagenicity: *No data available*

Carcinogenicity:

IARC: 7440-02-0 Nickel

NTP: 7440-02-0 Nickel

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive Toxicity: No data available

Specific Target Organ Toxicity - Single Exposure: *No data available*

Specific Target Organ Toxicity - Repeated Exposure: *No data available*

Aspiration Hazard: *No data available*

Additional Information

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No data available

12.2 Persistence and Degradability

No data available

12.3 Bioaccumulative Potential

No data available

12.4 Mobility in Soil

No data available

12.5 Results of PBT and vPvB Assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other Adverse Effects

Do not allow this product to reach ground water, public supplied water, or sewage systems. Nickel presents possible dangers to drinking water.

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION

SARA 355 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

Nickel	Revision Date
CAS-No.: 7440-02-0	
TSCA	
Nickel	Revision Date
CAS-No.: 7440-02-0	
Iron	Revision Date
CAS-No.: 7439-89-6	
California Prop. 65 Components	
Nickel	Revision Date
CAS-No.: 7440-02-0	
EPA	
None of the ingredients listed	
TLV	
Nickel	Revision Date
CAS-No.: 7440-02-0	
NIOSH-Ca	
Nickel	Revision Date
CAS-No.: 7440-02-0	

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H317:	May cause an allergic skin reaction.
H351:	Suspected of causing cancer.
H372:	Causes damage to organs through prolonged or repeated exposure.
P260:	Do not breathe dust/fume/gas/mist/vapors/spray
P280:	Wear protective gloves/protective clothing/eye protection/face protection.
P264:	Wash thoroughly after handling.
P308 + P313:	IF exposed or concerned: Get medical advice/attention.
P321:	Specific treatment in this document.
P333 + P313:	If skin irritation or rash occurs: Get medical advice/attention.
P405:	Store locked up.
P501:	Dispose of contents/container in accordance with local/regional/national/international regulations.

HMIS Rating

Health hazard:	3
Chronic Health Hazard:	
Flammability:	0
Physical Hazard:	0

NFPA Rating

Health hazard:	3
Fire Hazard:	0
Reactivity Hazard:	0

Water Hazard:	2
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Further Information

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17. Literature Sources

1. Norem, O’Niell, Gray. “The Use of Magnetic Transitions in Temperature Calibration and Performance Evaluation of Thermogravimetric Systems.” *Thermochemica Acta* 1970, pg 36

Preparation Information

Engineering Analytics Laboratories (Accredited to ISO 17034:2016, #122465 by PJLA)
+1-321-720-6578

Version: 3.1 Revision Date: 01/26/2024