Nickel Alloys

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
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SECTION 1: Identification

1.1. Identification

Product form : Article
Product name : Nickel Alloys

1.2. Recommended use and restrictions on use

Use of the substance/mixture : General Manufacturing Purposes
Restrictions on use : None known

1.3. Supplier

Ellwood National Steel
3 Front Street
Irvine, PA, 16329
T 814-563-7522

1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified.

2.2. GHS Label elements, including precautionary statements

GHS US labeling

No labeling applicable

2.3. Other hazards which do not result in classification

Other hazards which do not result in classification : This product is considered an article and does not present health or physical hazards in its intended and shipped form. Downstream manipulation of this product outside of manufacturer's recommended uses such as grinding, cutting, burning, welding, etc may expose the user to health hazards such as carcinogenicity, skin sensitization, target organ toxicity to the lungs, or metal fume fever. Any action which creates dust may present a dust explosion hazard.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
Nickel	CAS-No.: 7440-02-0	30 – 80	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372
Copper	CAS-No.: 7440-50-8	0 – 40	Aquatic Acute 1, H400
Manganese	CAS-No.: 7439-96-5	0 – 2	Aquatic Acute 2, H401

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or a doctor.

First-aid measures after skin contact : If skin irritation or rash occurs: Get medical advice/attention. After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Get medical advice/attention if you feel unwell.

First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.

Symptoms/effects after skin contact : None under normal conditions. Dust may cause irritation in skin folds or by contact in combination with tight clothing.

Symptoms/effects after eye contact : None under normal conditions. Dust from this product may cause eye irritation.

Symptoms/effects after ingestion : None under normal conditions.

Chronic symptoms : High concentrations of fumes and dusts may result in metal fume fever.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard : No fire hazard.

Explosion hazard : No direct explosion hazard.

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.
Emergency procedures : Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Evacuate unnecessary personnel.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Using a clean shovel, put the material in a dry container and cover without compressing it.
Methods for cleaning up : Mechanically recover the product.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.
Storage conditions : Keep cool. Protect from sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Nickel Alloys
No additional information available

Nickel (7440-02-0)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	1.5 mg/m³ (inhalable particulate matter)
ACGIH chemical category	Not Suspected as a Human Carcinogen

Nickel (7440-02-0)	
USA - ACGIH - Biological Exposure Indices	
BEI (BLV)	5 µg/l Parameter: Nickel - Medium: urine - Sampling time: post-shift at end of workweek (background)
USA - OSHA - Occupational Exposure Limits	
OSHA PEL TWA	1 mg/m³

Iron (7439-89-6)
No additional information available

Chromium (7440-47-3)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	0.5 mg/m³ (inhalable particulate matter)
USA - ACGIH - Biological Exposure Indices	
BEI (BLV)	0.7 µg/l Parameter: total Chromium - Medium: urine - Sampling time: end of shift at end of workweek (population based)
USA - OSHA - Occupational Exposure Limits	
OSHA PEL TWA	1 mg/m³

Molybdenum (7439-98-7)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	10 mg/m³ (inhalable particulate matter) 3 mg/m³ (respirable particulate matter)

Copper (7440-50-8)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	0.2 mg/m³ (fume)
USA - OSHA - Occupational Exposure Limits	
OSHA PEL TWA	0.1 mg/m³ (fume) 1 mg/m³ (dust and mist)

Manganese (7439-96-5)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	0.02 mg/m³ (respirable particulate matter) 0.1 mg/m³ (inhalable particulate matter)
ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA - OSHA - Occupational Exposure Limits	
OSHA PEL (Ceiling)	5 mg/m³ (fume)

Tungsten (7440-33-7)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	3 mg/m³ (respirable particulate matter)

Silicon (7440-21-3)	
USA - OSHA - Occupational Exposure Limits	
OSHA PEL TWA	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

Aluminum (7429-90-5)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	1 mg/m³ (respirable particulate matter)
ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA - OSHA - Occupational Exposure Limits	
OSHA PEL TWA	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

Niobium (7440-03-1)
No additional information available

Titanium (7440-32-6)
No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:
Wear recommended personal protective equipment.

Hand protection:
Protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Appearance : Metallic.
Color : Gray
Odor : Odorless
Odor threshold : No data available
pH : No data available
Melting point : 1285 – 1430 °C

Freezing point	:	Not applicable
Boiling point	:	No data available
Flash point	:	Not applicable
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability	:	No data available
Vapor pressure	:	No data available
Relative vapor density at 20°C	:	No data available
Relative density	:	No data available
Density	:	8 – 9 g/cm³
Solubility	:	Insoluble.
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	No data available
Viscosity, kinematic	:	Not applicable
Viscosity, dynamic	:	No data available
Explosion limits	:	Not applicable
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified.
Acute toxicity (dermal)	:	Not classified.
Acute toxicity (inhalation)	:	Not classified.

Nickel (7440-02-0)	
LD50 oral rat	> 9000 mg/kg (Source: EU_RAR)

Nickel (7440-02-0)	
LC50 Inhalation - Rat	> 10.2 mg/l (Exposure time: 1 h Source: EU_RAR)

Copper (7440-50-8)	
LC50 Inhalation - Rat	> 5.11 mg/l/4h

Manganese (7439-96-5)	
LD50 oral rat	9 g/kg (Source: NLM_CIP)
LC50 Inhalation - Rat	> 5.14 mg/l/4h
ATE US (oral)	9000 mg/kg body weight

Skin corrosion/irritation : Not classified.
Serious eye damage/irritation : Not classified.
Respiratory or skin sensitization : Skin sensitization: Not classified.
Germ cell mutagenicity : Not classified.
Carcinogenicity : Not classified.

Nickel (7440-02-0)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicity Program (NTP) Status	Reasonably anticipated to be Human Carcinogen
In OSHA Hazard Communication Carcinogen list	Yes

Reproductive toxicity : Not classified.
STOT-single exposure : Not classified.
STOT-repeated exposure : Not classified.

Nickel (7440-02-0)	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified.
Viscosity, kinematic : Not applicable
Symptoms/effects after inhalation : Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.
Symptoms/effects after skin contact : None under normal conditions. Dust may cause irritation in skin folds or by contact in combination with tight clothing.
Symptoms/effects after eye contact : None under normal conditions. Dust from this product may cause eye irritation.
Symptoms/effects after ingestion : None under normal conditions.
Chronic symptoms : High concentrations of fumes and dusts may result in metal fume fever.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

Nickel (7440-02-0)	
LC50 - Fish [1]	> 100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio Source: IUCLID)
EC50 - Crustacea [1]	> 100 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 - Fish [2]	1.3 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static] Source: EPA)
EC50 - Crustacea [2]	1 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

Copper (7440-50-8)	
LC50 - Fish [1]	0.0068 – 0.0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas Source: EPA)
EC50 - Crustacea [1]	0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 - Fish [2]	< 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static] Source: EPA)

Manganese (7439-96-5)	
LC50 - Fish [1]	> 3.6 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static] Source: ECHA)

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional waste regulation : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations : Disposal must be done according to official regulations.
Product/Packaging disposal recommendations : Comply with applicable regulations for solid waste disposal. Disposal must be done according to official regulations.
Additional information : Do not re-use empty containers.

SECTION 14: Transport information

In accordance with DOT / IMDG / IATA

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Not applicable
Proper Shipping Name (TDG) : Not applicable
Proper Shipping Name (IMDG) : Not applicable
Proper Shipping Name (IATA) : Not applicable

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : Not applicable

IMDG
Transport hazard class(es) (IMDG) : Not applicable

IATA
Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (DOT) : Not applicable
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT
No data available

IMDG
No data available

IATA
No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Nickel Alloys	
SARA Section 311/312 Hazard Classes	None

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.		
Nickel	CAS-No. 7440-02-0	30 – 80%
Chromium	CAS-No. 7440-47-3	0 – 25%
Copper	CAS-No. 7440-50-8	0 – 40%
Manganese	CAS-No. 7439-96-5	0 – 2%
Aluminum	CAS-No. 7429-90-5	0 – 5%

Nickel (7440-02-0)	
CERCLA RQ	100 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm

Copper (7440-50-8)	
CERCLA RQ	5000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm

15.2. International regulations

Nickel (7440-02-0)

Listed on IARC (International Agency for Research on Cancer)
Listed on Thailand Existing Chemicals Inventory (DIW)

Copper (7440-50-8)

Listed on Thailand Existing Chemicals Inventory (DIW)

Manganese (7439-96-5)

Listed on Thailand Existing Chemicals Inventory (DIW)

15.3. US State regulations

WARNING: This product can expose you to Nickel, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Component	State or local regulations
Nickel(7440-02-0)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
Copper(7440-50-8)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
Manganese(7439-96-5)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of hazard classes and H-statements	
H317	May cause an allergic skin reaction
H351	Suspected of causing cancer
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H401	Toxic to aquatic life

Safety Data Sheet (SDS), USA - HSI

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