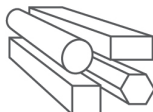
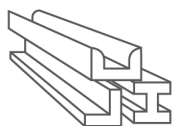




# RELIABLESOURCEMETALS.COM

METALS, MANUFACTURING & COMPONENTS



## Safety Data Sheet Nickel

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### SECTION 1: Identification

#### 1.1 Product identifier

Product name Nickel

#### 1.2 Other means of identification

Not available

#### 1.3 Recommended use of the chemical and restrictions on use

Nickel Raw Materials & Components

#### 1.4 Supplier's details

Name Reliable Source, Inc.  
Address 11109 Jasmine St  
Fontana, CA 92337  
USA

Telephone 909-357-1211  
Fax 909-357-1311  
email info@rsmetals.us

#### 1.5 Emergency phone number(s)

909-357-1211 (business hours)

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### SECTION 2: Hazard identification

#### General hazard statement

The product as delivered does not present a health hazard. However, if user activities generate dust, fumes or mists during processing and handling (melting, welding, sawing, brazing, grinding and machining), it may become hazardous.

#### 2.1 Classification of the substance or mixture

##### GHS classification in accordance with: (US) OSHA (29 CFR 1910.1200)

- Carcinogenicity, Cat. 2
- Sensitization, respiratory, Cat. 1
- Eye damage/irritation, Cat. 2A
- Sensitization, skin, Cat. 1
- Specific target organ toxicity (repeated exposure), Cat. 1

# Safety Data Sheet

## Nickel

### 2.2 GHS label elements, including precautionary statements

#### Pictogram



#### Signal word

**Danger**

#### Hazard statement(s)

H317 May cause an allergic skin reaction  
H319 Causes serious eye irritation  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled  
H351 Suspected of causing cancer  
H372 Causes damage to organs through prolonged or repeated exposure

#### Precautionary statement(s)

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dust/fume/gas/mist/vapors/spray.  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P272 Contaminated work clothing must not be allowed out of the workplace.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P284 [In case of inadequate ventilation] wear respiratory protection.  
P302+P352 IF ON SKIN: Wash with plenty of water  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.  
P308+P313 IF exposed or concerned: Get medical advice/attention.  
P314 Get medical advice/attention if you feel unwell.  
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
P337+P313 If eye irritation persists: Get medical advice/attention.  
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor  
P363 Wash contaminated clothing before reuse.

### 2.3 Other hazards which do not result in classification

No data available

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not applicable.

### 3.2 Mixtures

#### Components

Component	Concentration
<b>NICKEL (CAS no.: 7440-02-0; EC no.: 231-111-4)</b> CLASSIFICATIONS: Carcinogenicity, Cat. 2; Specific target organ toxicity (repeated exposure), Cat. 1; Sensitization, skin, Cat. 1; Hazardous to the aquatic environment, long-term (chronic), Cat. 3.	<b>50 - 75 % (weight)</b>
<b>IRON (CAS no.: 7439-89-6)</b> CLASSIFICATIONS: No data available.	<b>25 - 50 % (weight)</b>
<b>Copper (CAS no.: 7440-50-8)</b>	<b>25 - 50 % (weight)</b>

# Safety Data Sheet

## Nickel

CLASSIFICATIONS: Hazardous to the aquatic environment, long-term (chronic), Cat. 3; Hazardous to the aquatic environment, short-term (acute), Cat. 1.	
<b>Chromium compounds (as Cr (III)) (CAS no.: 7440-47-3)</b>	<b>10 - 25 % (weight)</b>
CLASSIFICATIONS: Sensitization, skin, Cat. 1; Sensitization, respiratory, Cat. 1; Serious eye damage/eye irritation, Cat. 2; Hazardous to the aquatic environment, long-term (chronic), Cat. 4.	
<b>Molybdenum (CAS no.: 7439-98-7)</b>	<b>5 - 10 % (weight)</b>
CLASSIFICATIONS: No data available.	
<b>COBALT (CAS no.: 7440-48-4; EC no.: 231-158-0)</b>	<b>5 - 10 % (weight)</b>
CLASSIFICATIONS: Sensitization, respiratory, Cat. 1; Sensitization, skin, Cat. 1; Hazardous to the aquatic environment, long-term (chronic), Cat. 4.	
<b>Niobium (CAS no.: 7440-03-1)</b>	<b>1 - 5 % (weight)</b>
CLASSIFICATIONS: No data available.	
<b>Tungsten (CAS no.: 7440-33-7)</b>	<b>1 - 5 % (weight)</b>
CLASSIFICATIONS: No data available.	
<b>Titanium (CAS no.: 7440-32-6)</b>	<b>1 - 5 % (weight)</b>
CLASSIFICATIONS: No data available.	
<b>Aluminum (CAS no.: 7429-90-5; EC no.: 231-072-3)</b>	<b>1 - 5 % (weight)</b>
CLASSIFICATIONS: Flammable solids, Cat. 1; Substances and mixtures which, in contact with water, emit flammable gases, Cat. 2.	
<b>Manganese (CAS no.: 7439-96-5)</b>	<b>1 - 5 % (weight)</b>
CLASSIFICATIONS: No data available.	
<b>Tantalum (CAS no.: 7440-25-7)</b>	<b>1 - 5 % (weight)</b>
CLASSIFICATIONS: No data available.	

## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower for at least 15 minutes. Call a poison center or doctor if irritation develops or persists. Wash contaminated clothing before reuse.
In case of eye contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention/advice.
If swallowed	Rinse mouth. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Call a poison center or doctor.

### 4.2 Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2) and/or in section 11

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

No data available.

## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Use alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Specific hazards arising from the chemical

Combustion products may contain metal oxides. Hydrogen gas may form if water is used as extinguishing media.

# Safety Data Sheet

## Nickel

### 5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid actions that cause dust to become airborne. Do not breathe dust or mist. Avoid contact with skin. Wear appropriate personal protective equipment as described in Section 8.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

#### Reference to other sections

For disposal see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Avoid dust, mist or fume formation. Ensure adequate ventilation. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation. For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Normal temperatures and pressures do not affect the material. Keep in a dry and well-ventilated place.

#### Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

US OSHA Permissible Exposure Limits, Annotated Table Z-1, [www.osha.gov](http://www.osha.gov):

	OSHA PEL (C) Ceiling	Cal/OSHA PEL 8-hour TWA (ST) STEL (C) Ceiling	NIOSH REL Up to 10-hour TWA (ST) STEL (C) Ceiling	ACGIH® TLV® 8-hour TWA (ST) STEL (C) Ceiling
<b>Aluminum (CAS no.: 7429-90-5)</b>				
Total dust	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	
Respirable fraction	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
<b>Chromium (III) compounds (CAS no.: 7440-47-3)</b>	0.5 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>	0.003 mg/m <sup>3</sup> -(IHL), water soluble
<b>Chromium (VI) compounds)</b>	(C) 1 mg/10m <sup>3</sup> Chromic acid and chromates	0.005 mg/m <sup>3</sup> as Cr (C) 0.1 mg/m <sup>3</sup>	Ca 0.0002 mg/m <sup>3</sup> (8-hr- TWA)	0.0002 mg/m <sup>3</sup> (IHL) (ST) 0.0005 mg/m <sup>3</sup> (IHL), water soluble

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### Nickel

<b>Copper (CAS no.: 7440-50-8)</b>				
Fume (as Cu)	0.1 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>
Dusts and mists (as Cu)	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
Cotton dust	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup> (in waste processing)	<0.200 mg/m <sup>3</sup>	0.1 mg/m <sup>3</sup> (Thor.) (raw untreated)
<b>Molybdenum (CAS no.: 7439-98-7)</b>				
Soluble compounds	5 mg/m <sup>3</sup>	0.5 mg/m <sup>3</sup>		0.5 mg/m <sup>3</sup>
Insoluble Compounds - Total dust	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>		
Insoluble Compounds		3 mg/m <sup>3</sup> (resp.)		10 mg/m <sup>3</sup> (IHL) 3 mg/m <sup>3</sup> (resp.)
<b>Cobalt metal, dust, and fume (CAS no.: 7440-48-4)</b>	0.1 mg/m <sup>3</sup>	0.02 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	0.02 mg/m <sup>3</sup>
<b>Nickel, metal and insoluble compounds (as Ni) (CAS no.: 7440-02-0)</b>	1 mg/m <sup>3</sup>	metal 0.5 mg/m <sup>3</sup> insoluble 0.1 mg/m <sup>3</sup>	Ca 0.015 mg/m <sup>3</sup>	elemental: 1.5 mg/m <sup>3</sup> (IHL); insoluble inorganic compounds: 0.2 mg/m <sup>3</sup> (IHL)
<b>Nickel, soluble compounds (as Ni) (CAS no.: 7440-02-0)</b>	1 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	Ca 0.015 mg/m <sup>3</sup>	soluble inorganic compounds: 0.1 mg/m <sup>3</sup> (IHL)
<b>Manganese compounds and fume (CAS no.: 7439-96-5)</b>	(C) 5 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>	1 mg/m <sup>3</sup> (ST) 3 mg/m <sup>3</sup>	0.02 mg/m <sup>3</sup> (resp.) 0.1 mg/m <sup>3</sup> (IHL) (for elemental and inorganic compounds)
<b>Tantalum (CAS no.: 7440-25-7)</b>	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup> (ST) 10 mg/m <sup>3</sup>	

Abbreviations: C = Ceiling limit; Ca = Potential occupational carcinogens; CAS No. = Chemical Abstract Service Number; IHL = Inhalable; ppm = parts per million; STEL = Short Term Exposure Limit; Thor. = Thoracic fraction; TLV® = Threshold Limit Value; TWA – Time weighted average

#### 8.2 Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

#### 8.3 Individual protection measures, such as personal protective equipment (PPE)

##### Pictograms



##### Eye/face protection

When engaged in activities where ingredients could contact the eye, wear safety glasses with side shields or goggles. In extremely dusty environments and unpredictable environments, wear unvented or indirectly vented

# Safety Data Sheet

## Nickel

goggles to avoid eye irritation or injury. Wear face shield during welding or burning. Eye protection equipment must be tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU)

### Skin protection

Wear protective gloves suitable for the material handled. Consult manufacturer specifications for further information.

### Body protection

Wear protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Respiratory protection

Avoid actions that cause dust, mist or fume exposure to occur. Use local or general ventilation to control exposures below applicable exposure limits. NIOSH or MSHA approved particulate filter respirators should be used in the context of respiratory protection program meeting the requirements of the OSHA respiratory protection standard [29 CFR 1910.134] to control exposures when ventilation or other controls are inadequate or discomfort or irritation is experienced. Respirator and/or filter cartridge selection should be based on American National Standards Institute (ANSI) Standards Z88.2 Practices for Respiratory Protection.

### Thermal hazards

No data available.

### Environmental exposure controls

Do not let product enter drains.

---

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

Appearance/form (physical state, color, etc.)	Metal Solid
Odor	No odor
Odor threshold	No data available.
pH	No data available.
Melting point/freezing point	No data available.
Initial boiling point and boiling range	No data available.
Flash point	No data available.
Evaporation rate	No data available.
Flammability (solid, gas)	No data available.
Upper/lower flammability limits	No data available.
Upper/lower explosive limits	No data available.
Vapor pressure	No data available.
Vapor density	No data available.
Relative density	No data available.
Specific gravity	7.80-9.24
Solubility(ies)	No data available.
Partition coefficient: n-octanol/water	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Viscosity	No data available.
Explosive properties	No data available.
Oxidizing properties	No data available.

### Other safety information

No data 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 storage conditions.

### **10.3 Possibility of hazardous reactions**

No data available.

### **10.4 Conditions to avoid**

No data available

### **10.5 Incompatible materials**

Strong acids and oxidizing agents.

### **10.6 Hazardous decomposition products**

No data available.

---

## **SECTION 11: Toxicological information**

### **Information on toxicological effects**

#### **Acute toxicity**

Based on available data, classification data are not met

Components:

Copper (CAS no.: 7440-50-8):  
LD50 – intraperitoneal – mouse:  
Result: 3.5 mg/kg

IRON (CAS no.: 7439-89-6)  
LD50 Oral - Rat  
Result: 30000 mg/kg

Nickel (CAS no.: 7440-02-0):  
LD50 Oral - Rat  
Result: 9000 mg/kg

Manganese (CAS no.: 7439-96-5):  
LD50 Oral - Rat  
Result: 9000 mg/kg

COBALT (CAS no.: 7440-48-4):  
LD50 Oral - Rat  
Result: 6171 mg/kg

#### **Skin corrosion/irritation**

Based on available data, classification data are not met

#### **Serious eye damage/irritation**

Causes serious eye irritation

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#### Respiratory or skin sensitization

May cause an allergic skin reaction. May cause allergy or asthma symptoms of breathing difficulties if inhaled.

#### Germ cell mutagenicity

Based on available data, classification data are not met

#### Carcinogenicity

Suspected of causing cancer.

Components:

Nickel (CAS no.: 7440-02-0):

IARC: 2B - Possibly carcinogenic to humans

NTP: Reasonably anticipated to be Human Carcinogen

#### Reproductive toxicity

Based on available data, classification data are not met

#### STOT-single exposure

Based on available data, classification data are not met

#### STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure

#### Aspiration hazard

Based on available data, classification data are not met

#### Additional information

No data available.

---

## SECTION 12: Ecological information

#### Toxicity

No data available on product

Components:

Manganese (CAS no.: 7439-96-5):

LC50 - Daphnia magna – 48h

Result: 29 mg/L

Nickel (CAS no.: 7440-02-0):

EC50 - Daphnia magna – 48h

Result: 1 mg/L

Copper (CAS no.: 7440-50-8):

LC50 - Daphnia magna – 48h

Result: 0.0504 mg/L

COBALT (CAS no.: 7440-48-4):

LC50 - Daphnia magna – 48h

Result: 4.4 mg/L

#### Persistence and degradability

No data available on product



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## Nickel

### Bioaccumulative potential

No data available on product

### Mobility in soil

No data available.

### Results of PBT and vPvB assessment

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

### Other adverse effects

No data available.

---

## SECTION 13: Disposal considerations

### Disposal of the product

Disposal should be in accordance with applicable Federal, State and local laws and regulations. Local regulations may be more stringent than State or Federal requirements.

### Disposal of contaminated packaging

Dispose of as unused product.

---

## SECTION 14: Transport information

### DOT (US)

Not dangerous goods

### IMDG

Not dangerous goods

### IATA

Not dangerous goods

---

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

#### California Prop. 65 Components

WARNING! This product can expose you to chemicals including Nickel (metallic), Nickel compounds, Cobalt, which are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Chemical name: Nickel (Metallic)

CAS number: 7440-02-0

10/01/1989 – Cancer

Chemical name: Nickel compounds

CAS number: 7440-02-0

05/07/2004 – Cancer

Chemical name: Cobalt Metal Powder

CAS number: 7440-48-4

07/01/1992 – Cancer

#### Massachusetts Right To Know Components

## Safety Data Sheet

### Nickel

Nickel (CAS no.: 7440-02-0)

Copper (CAS no.: 7440-50-8)

Chromium (CAS no.: 7440-47-3)

Molybdenum (CAS no.: 7439-98-7)

COBALT (CAS no.: 7440-48-4)

Tungsten (CAS no.: 7440-33-7)

Manganese (CAS no.: 7439-96-5)

Tantalum (CAS no.: 7440-25-7)

Aluminum (CAS no.: 7429-90-5)

#### New Jersey Right To Know Components

Nickel (CAS no.: 7440-02-0)

Copper (CAS no.: 7440-50-8)

Chromium (CAS no.: 7440-47-3)

Molybdenum (CAS no.: 7439-98-7)

COBALT (CAS no.: 7440-48-4)

Tungsten (CAS no.: 7440-33-7)

Manganese (CAS no.: 7439-96-5)

Tantalum (CAS no.: 7440-25-7)

Aluminum (CAS no.: 7429-90-5)

#### Pennsylvania Right To Know Components

Nickel (CAS no.: 7440-02-0)

Copper (CAS no.: 7440-50-8)

Chromium (CAS no.: 7440-47-3)

Molybdenum (CAS no.: 7439-98-7)

COBALT (CAS no.: 7440-48-4)

Tungsten (CAS no.: 7440-33-7)

Manganese (CAS no.: 7439-96-5)

Tantalum (CAS no.: 7440-25-7)

# Safety Data Sheet

## Nickel

Aluminum (CAS no.: 7429-90-5)

### SARA 302 Components

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

### SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

### SARA 313 Components

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

Nickel (CAS no.: 7440-02-0)

Copper (CAS no.: 7440-50-8)

Chromium (CAS no.: 7440-47-3)

COBALT (CAS no.: 7440-48-4)

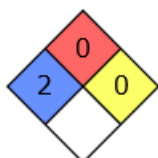
Manganese (CAS no.: 7439-96-5)

Aluminum (CAS no.: 7429-90-5)

### HMIS Rating

Nickel	
HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	

### NFPA Rating



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## SECTION 16: Other information

### 16.1 Further information/disclaimer

Date of issue: February 28, 2019.

DISCLAIMER: The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of information for their particular purposes. All materials may present unknown hazards and should be used with caution. In no event shall we be held liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, whatsoever arising, even if we have been advised of the possibility of such damages.