

# Safety Data Sheet FAWSDS-17

Revision Date: 04-25-2018



## 1) IDENTIFICATION

<b>Product Identifier</b>	Gold Plating
<b>Other Means of Identification</b>	
<b>SDS Number</b>	FAWSDS-17
<b>Recommended Use and Restrictions on Use</b>	
<b>Recommended Use</b>	None Known
<b>Restrictions on Use</b>	None Known
<b>Manufacturer/Importer/Supplier/Distributor Information</b>	
<b>Manufacturer/Supplier</b>	Fisk Alloy, Inc. PO Box 26 10 Thomas Road Hawthorne, NJ 07507, USA
<b>General Assistance</b>	Call Fisk Alloy: 973 825 8500
<b>Email</b>	<a href="mailto:info@fiskalloy.com">info@fiskalloy.com</a>
<b>Contact Person</b>	None Known
<b>Emergency Telephone</b>	<b>For all transportation accidents, call Chemtrec at 800 424 9300</b>

## 2) HAZARD(S) IDENTIFICATION

### OSHA/HCS Status

This material is not classified by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Classification of Substance or Mixture

<b>Physical Hazards</b>	Not Classified
<b>Health Hazards</b>	Not Classified
<b>Environment Hazards</b>	Not Classified

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<b>GHS Labeling Elements</b>	No Labeling Applicable
<b>Signal word</b>	Not Applicable
<b>Hazard statements</b>	Not Applicable

## Hazards Not Otherwise Classified (HNOC)

Metallic product which poses little or no immediate hazard in solid form. Exposure to the elements listed in Section 3 by inhalation, ingestion, and skin contact can occur during routine handling, material transfer, chemical processing or further processing. If this material is converted or becomes part of a solid shape, exposure can occur when melting, casting, dross handling, pickling, chemical cleaning, heat treating, abrasive cutting, welding, grinding, sanding, polishing, milling, crushing or otherwise heating or abrading the surface of this material in a manner which generates particulate. Exposure may also occur during repair or maintenance activities on contaminated equipment such as: furnace rebuilding, maintenance or repair of air cleaning equipment, structural renovation, welding, etc. Particulate depositing on hands, gloves, and clothing, can be transferred to the breathing zone and inhaled during normal hand to face motions such as rubbing of the nose or eyes, sneezing, coughing, etc.

## 3) COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE NAME	CAS NUMBER	PERCENT
Gold	7440-57-5	>99.8
Nickel	7440-02-0	<0.2

## 4) FIRST AID MEASURES

### Inhalation

When symptoms occur: go into open air and ventilate suspected area. Keep at rest and in a position comfortable for breathing. If not breathing, give artificial respiration. Obtain medical attention if breathing difficulty persists.

### Skin Contact

Cool skin rapidly with cold water after contact with molten product. Removal of solidified molten material from skin requires medical assistance. Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Wash with plenty of soap and water. Wash contaminated clothing before reuse. Obtain medical attention if irritation persists.

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## Eye Contact

Removal of solidified molten material from the eyes requires medical assistance. Immediately rinse with water for a prolonged period (at least 15 minutes) while holding the eyelids wide open. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.

## Ingestion

Ingestion is unlikely due to physical state. Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Immediately call a POISON CENTER or doctor/physician.

## Most Important Symptoms/Effects, Acute and Delayed

*Inhalation:* Particulate containing those elements listed in acute and delayed. Nickel can cause irritation to the nose, throat, lungs, and mucous membranes. Inhalation of this particulate may cause metal fume fever (high temperature, metallic taste, nausea, coughing, general weakness, muscle aches, and exhaustion), bronchitis, chills, decreased pulmonary function and asthma like symptoms.

*Nickel:* Can cause headaches, dizziness, and difficult breathing. Symptoms may include coughing, sore throat, and shortness of breath.

*Skin Contact:* Skin contact with this material may cause, in some sensitive individuals, an allergic dermal response. Skin contact may cause irritation. Symptoms include redness, itching and pain.

*Nickel:* May cause allergic dermatitis. Nickel is a contact allergen and sensitizer.

*Eye Contact:* Exposure may result from direct contact with airborne particulate or contact to the eye with contaminated hands or clothing. Damage can result from irritation or mechanical injury to the eyes by particulate.

*Ingestion:* Ingestion is likely to be harmful or have adverse effects. Ingestion can occur from hand, clothing, food and drink contact with particulate during hand to mouth activities such as eating, drinking, smoking, nail biting, etc. Nickel: Causes gastrointestinal irritation with nausea, vomiting and diarrhea.

## Chronic Symptoms

*Nickel:* Prolonged exposure to excessive concentrations of particulate may cause chronic pulmonary disorders. Prolonged or repeated skin contact may cause sensitization dermatitis and possible destruction and/or ulceration.

## Indication of Immediate Medical Attention and Special Treatment Needed

In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

*Nickel:* Skin contact with some nickel compounds in sensitive individuals may cause dermatitis (nickel itch).

## General Information

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

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## 5) FIRE FIGHTING MEASURES

### **Suitable Extinguishing Media**

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

### **Unsuitable Extinguishing Media**

No information available.

### **Specific Hazards Arising from the Chemical**

In molten state: reacts violently with water (moisture). Do not use water to extinguish fires around operations involving molten metal due to the potential for steam explosions.

### **Special Protective Equipment and Precautions for Firefighters**

*Precautionary Measures Fire:* Under fire conditions, hazardous fumes will be present.

*Firefighting Instructions:* Exercise caution when fighting any chemical fire.

*Protection During Firefighting:* Do not enter fire area without proper protective equipment, including respiratory protection. If this material becomes airborne as a respirable particulate during a fire situation, pressure-demand self-contained breathing apparatus must be worn by firefighters or any other persons potentially exposed to the metal fumes.

## 6) ACCIDENTAL RELEASE MEASURES

### **Personal Precautions, Protective Equipment and Emergency Procedures**

*General Measures:* Do not handle until all safety precautions have been read and understood. Do not breathe vapors from molten product. Avoid all eye and skin contact and do not breathe dust, fumes, and vapors.

*For Non-Emergency Personnel:* Use appropriate personal protection equipment (PPE). Evacuate unnecessary personnel.

*For Emergency Personnel:* Equip cleanup crew with proper protection. Ventilate area.

### **Environmental Precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### **Methods and Materials for Containment and Clean Up**

Contain and collect as any solid. Clear up spills immediately and dispose of waste safely. For particulates and dust: Avoid actions that cause dust to become airborne during clean-up such as dry sweeping or using compressed air. Use PPE described in Section 8. Vacuum must be fitted with HEPA filter to prevent release of particulates during clean-up.

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## 7) HANDLING AND STORAGE

### Precautions for Safe Handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge. Do not breathe vapors/dust. Do not ingest.

### Conditions for Safe Storage, Including Any Incompatibilities

*Storage Conditions:* Keep containers tightly closed in a dry, cool and well-ventilated place.

*Incompatible Materials:* Strong acids, strong bases and strong oxidizers. Alkalis. Metal oxides. Water, humidity. Corrosive substances in contact with metals may produce flammable hydrogen gas.

## 8) EXPOSURE CONTROLS/PERSONAL PROTECTION

### Occupational Exposure Limits

COUNTRY	TYPE	GOLD Value (mg/m <sup>3</sup> )	NICKEL Value (mg/m <sup>3</sup> )
Belgium	TWA	—	0.2 (a), 0.1 (b), 1(c)
Brazil	TWA	—	-
Canada-Alberta	TWA	—	0.2 (a), 0.1 (b), 1.5(c)
Canada-British Columbia	TWA	—	0.05 (a, b, c)
Canada-Ontario	TWA	—	0.2 (a), 0.1 (b), 1(c)
Canada-Quebec	TWA	—	1 (a, c), 0.1 (b)
China	TWA	—	1 (a, c), 0.5 (b)
Denmark	TWA	—	0.05 (d)
France	TWA	—	1 (c)
Germany	TWA	—	0,006 (c)
Hong Kong	TWA	—	0.2 (a), 0.1 (b), 1.5 (c)

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India	TWA	—	—
Italy	TWA	—	—
Japan	TWA	—	1 (c), 0.01 (b), 0.1 (a)
Korea	TWA	—	0.5 (a), 0.1 (b), 1 (c)
Malaysia	TWA	—	0.2 (a), 0.1 (b), 1.5 (c)
Mexico	TWA	—	1.5 (c)
Poland	TWA	—	0.25
Portugal	TWA	—	—
Russia	TWA	—	—
Singapore	TWA	—	1(a, c), 0.1 (b)
Sweden	TWA	—	0.5(d)
Taiwan, R. O. C.	TWA	—	—
United Kingdom	TWA	—	0.5 (a, c), 0.1 (b)
USA ACGIH	TWA (TLV)	—	0.2 (a), 0.1 (b), 1.5 (c)
USA OSHA	TWA (PEL)	—	1 (c)
USA NIOSH	TWA (REL)	—	0.015 (c)

**a**-insoluble inorganic compound, **b**-soluble inorganic compound, **c**-metal, **d**-metal-total dust, **e**-dust.

## Appropriate Engineering Controls

Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection devices. Ensure all national/local regulations are observed.

## Individual Protection Measures, Such as Personal Protective Equipment

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## Respiratory Protection

Respiratory protection not normally needed. If dusting occurs or fumes are generated above the established occupational exposure limits, use a NIOSH-approved half-face or full-face respirator equipped with High Efficiency Particulate (HEPA) filter cartridges.

## Hand Protection

Wear chemically resistant protective gloves. If material is hot, wear thermally resistant protective gloves.

## Eye Protection

Chemical goggles or safety glasses.

## Other Protection

Chemically resistant materials and fabrics. With molten material wear thermally protective clothing. If generating a dust, wash thoroughly after handling, especially before eating, drinking, or smoking. Wash contaminated clothing before reuse.

## General Hygiene Considerations

Do not eat, drink, or smoke while using this product in dust form. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## 9) PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b>	Metallic Gold
<b>Physical State</b>	Solid
<b>Form</b>	Solid
<b>Color</b>	Gold Metallic
<b>Odor</b>	None
<b>Odor Threshold</b>	Not Available
<b>pH</b>	Not Applicable
<b>Melting Point</b>	1948°F

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<b>Initial Boiling Point and Boiling Range</b>	No Data
<b>Flash Point</b>	Not Applicable
<b>Evaporation Rate</b>	Not Applicable
<b>Flammability (Solid, Gas)</b>	Not Applicable
<b>Lower Explosive Limit</b>	Not Applicable
<b>Upper Explosive Limit</b>	Not Applicable
<b>Vapor Pressure</b>	Not Applicable
<b>Vapor Density</b>	Not Applicable
<b>Relative Density</b>	Not Available
<b>Solubility in Water (20°C)</b>	Negligible
<b>Partition Coefficient (N-Octanol/Water)</b>	Not Applicable
<b>Auto-Ignition Temperature</b>	Not Applicable
<b>Decomposition Temperature</b>	Not Applicable
<b>Viscosity (cps)</b>	Not Applicable
<b>Others</b>	
<b>Molecular Weight</b>	Not Applicable – Mixture
<b>Volatiles</b>	Not Applicable
<b>Specific Gravity (g/cc)</b>	17.5
<b>Bulk Density (g/cc)</b>	17.5

## 10) STABILITY AND REACTIVITY

### Reactivity

Hazardous reactions will not occur under normal conditions.

### Chemical Stability

Stable under recommended storage conditions and stable in solid form.



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## Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

## Conditions to Avoid

Avoid contact with carbon monoxide, particularly at temperatures between 50°C and 300°C, to prevent formation of nickel carbonyl which is toxic and a carcinogen. Heat, flames and sparks. Extremes of temperature and direct sunlight.

## Incompatible Materials

Strong oxidizing agents.

## Hazardous Decomposition Products

Nickel oxides.

## 11) TOXICOLOGICAL INFORMATION

### Information on Likely Routes of Exposure

*Inhalation:* Inhalation of dusts and fumes can cause metal fume fever. Symptoms can include a metallic or sweet taste in the mouth, sweating, shivering, headache, throat irritation, fever, chills, thirstiness, muscle aches, nausea, vomiting, weakness, fatigue, and shortness of breath.

*Ingestion:* Ingestion is likely to be harmful or have adverse effects.

*Skin Contact:* May cause an allergic skin reaction. Contact with fumes or metal powder will irritate skin. Contact with hot, molten metal will cause thermal burns. Dust may cause irritation in skin folds or by contact in combination with tight clothing. Mechanical damage via flying particles and chipped slag is possible.

*Eye Contact:* Dust may cause mechanical irritation to eyes.

### Symptoms Related to the Physical, Chemical and Toxicological Characteristics

No information available.

### Delayed and Immediate Effects and Chronic Effects from Short- and Long-term Exposure

In massive form, no hazard exists. If physically altered to present slivers, ribbons, dusts or fumes from molten material:

*Nickel:* May cause a form of dermatitis known as nickel itch and intestinal irritation, which may cause disorders, convulsions and asphyxia.

### Numerical Measures of Toxicity

No Information Available

### Skin Corrosion/Irritation

Not Classified

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**Serious Eye Damage/Eye Irritation** Not Classified

## Respiratory or Skin Sensitization

**Respiratory Sensitization** Not Classified

**Skin Sensitization** Not Classified

## Germ Cell Mutagenicity

Not Classified. This product is not known or reported to be mutagenic. Nickel has been shown to be mutagenic in *in-vitro* studies.

## Carcinogenicity

*Nickel:* The International Agency for Research on Cancer (IARC) lists nickel as a Group 2B – Possibly Carcinogenic to Humans. However, IARC found there was inadequate evidence that metallic nickel is carcinogenic to humans but since there was sufficient evidence that it is carcinogenic to animals, IARC concluded that metallic nickel is possibly carcinogenic to humans. The National Toxicology Program (NTP) lists nickel as reasonably anticipated to be a human carcinogen based on sufficient evidence of carcinogenicity from studies in experimental animals. However, NTP reports that the available studies of the carcinogenicity of metallic nickel in humans are inadequate for an evaluation.

## Reproductive Toxicity

Not Classified. This product is not known or reported to cause reproductive or developmental effects. Exposure of male rats to high concentrations of nickel caused testicular degeneration. However, symptoms of systemic toxicity, including severe weight loss, were also observed at the same concentrations indicating that the testicular effects were secondary to the frank toxicity. Exposure at these levels is highly unlikely under normal working conditions.

**Specific Target Organ Toxicity — Single Exposure** Not Classified

## Specific Target Organ Toxicity –Repeated Exposure

*Nickel:* Prolonged exposure to excessive concentrations of particulate may cause chronic pulmonary disorders. Prolonged or repeated skin contact may cause sensitization dermatitis and possible destruction and/or ulceration.

**Aspiration Hazard** Not Classified

## 12) ECOLOGICAL INFORMATION

**Ecotoxicity** Not Information Available

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## Numerical Measures of Toxicity

COMPONENT	TEST	SPECIES	TEST RESULTS
Nickel (CAS#7440-02-0)	Fish LC <sub>50</sub>	Rock Bass ( <i>Ambloplites Rupestris</i> )	3.9 mg/l, 96 Hours
	Crustacea LC <sub>50</sub>	Water Flea ( <i>Daphnia Magna</i> )	7.5 mg/l, 48 Hours

**Persistence and Degradability** No Data Available

**Bioaccumulative Potential** No Data Available

**Mobility in Soil** No Data Available

### Other Adverse Effects

No known significant effects or critical hazards.

## 13) DISPOSAL CONSIDERATIONS

### Disposal Instructions

*Byproduct Recycling* when recycled (used in a process to recover metals), this material is not classified as hazardous waste under federal law. Seal particulate or particulate containing materials inside two plastic bags, place in a DOT approved container, and label appropriately.

*Solid Waste Management* when spent products are declared solid wastes (no longer recyclable), they must be labeled, managed and disposed of, in accordance with federal, state and local requirements.

**Contaminated Packaging** None Known

## 14) TRANSPORT INFORMATION

**In Accordance with DOT** Not regulated for transport

**In Accordance with IMDG** Not regulated for transport

**In Accordance with IATA** Not regulated for transport

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## 15) REGULATORY INFORMATION

### US Federal Regulations

This product is a "Non Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None of the ingredients of this product are listed.

### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None of the ingredients of this product are listed.

### CERCLA Hazardous Substance List (40 CFR 302.4)

Nickel (CAS#7440-02-0)	Listed
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### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### Hazard Categories

Immediate Hazard	No
Delayed Hazard	No
Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No

### SARA 302/304 Extremely Hazardous Substance

None of the ingredients of this product are listed.

SARA 311/312 Hazardous Chemical	No
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### SARA 313 (TRI Reporting)

SUBSTANCE NAME	CAS NUMBER	% BY WEIGHT
Nickel	7440-02-0	<0.2

### Other Federal Regulations

*Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List:* None of the ingredients of this product are listed.

*Safe Drinking Water Act (SDWA):* None of the ingredients of this product are listed.

### US State Regulations

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WARNING: This product contains chemicals known to the State of California to cause cancer.

*US. Massachusetts Worker and Community Right-to-Know Act:*

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*US. New Jersey Worker and Community Right-to-Know Act:*

Nickel (CAS#7440-02-0)

*US. Pennsylvania Worker and Community Right-to-Know Law:*

Nickel (CAS#7440-02-0)

*US. California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT):*

Nickel (CAS#7440-02-0)

## Canada Regulations

This substance has not been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR).

## International Inventories

COUNTRY(S) OR REGION	INVENTORY NAME	ON INVENTORY (YES/NO)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemical List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
US & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

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\* A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s). A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16) ADDITIONAL INFORMATION

<b>Issue Date</b>	—
<b>Revision Date</b>	04-25-2018
<b>Version #</b>	—

### References

*ACGIH*: American Conference of Governmental Industrial Hygienist  
*NIOSH*: The National Institute for Occupational Safety and Health  
*OSHA*: Occupational Safety and Health Administration  
*CAS*: Chemical Abstracts Service (division of the American Chemical Society)  
*DOT*: Department of Transportation  
*IATA*: International Air Transport Association  
*IMDG*: International Maritime Code for Dangerous Goods  
*LC<sub>50</sub>*: Lethal Concentration, 50 Percent  
*EC<sub>50</sub>*: Effective Concentration of Substance That Causes 50% of Maximum Response  
*NOEC*: No Observed Effect Concentration  
*TWA*: Time-Weighted Average  
*STEL*: Short Term Exposure Limit  
*REL*: Recommended Exposure Limits  
*PEL*: Permissible Exposure Limit  
*TLV*: Threshold Limit Values

### Disclaimer

The information, recommendations, and suggestions presented in this SDS are based upon test results and data believed to be reliable. The end user of the product has the responsibility for evaluating the adequacy of the data under the conditions of use, determining the safety, toxicity and suitability of the product under these conditions, and obtaining additional or clarifying information where uncertainty exists. No guarantee expressed or implied is made as to the effects of such use, the results to be obtained, or the safety and toxicity of the product in any specific application. Furthermore, the information herein is not represented as absolutely complete, since it is not practicable to provide all the scientific and study

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information in the format of this document, plus additional information may be necessary under exceptional conditions of use, or because of applicable laws or government regulations.