

Copper Nickel Indium Strip, Plate, Bar, Wire and Powder

Safety Data Sheet

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

Revision Date: 04/16/2014

Version: 1.0

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1. Product Identifier

Product Form: Article

Product Name: Copper Nickel Indium Strip, Plate, Bar, Wire and Powder

Synonyms: Cu-Ni-In

1.2. Intended Use of the Product

Use of the Substance/Mixture: Soldering and brazing

1.3. Name, Address, and Telephone of the Responsible Party

Ametek Specialty Metal

21 Toelles Road

Wallingford, CT 06492

T 203-265-6731

www.ametek.com

1.4. Emergency Telephone Number

Emergency Number : 800-424-9300 CHEMTREC US / 001-703-527-3887 CHEMTREC Intl.

For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Not classified

2.2. Label Elements

GHS-US Labeling

Not classified

2.3. Other Hazards

No additional information available

2.4. Unknown Acute Toxicity (GHS-US):

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product Identifier	%	Classification (GHS-US)
Nickel	(CAS No) 7440-02-0	57.3 - 58.8	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372 Aquatic Chronic 3, H412
Copper	(CAS No) 7440-50-8	36.5 - 37.5	STOT SE 3, H335 STOT RE 1, H372 Aquatic Acute 1, H400
Indium	(CAS No) 7440-74-6	4.7 - 5.2	Not classified

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

First-aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid Measures After Inhalation: When symptoms occur: go into open air and ventilate suspected area.

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First-aid Measures After Skin Contact: Removal of solidified molten material from skin requires medical assistance. Cool skin rapidly with cold water after contact with molten product.

First-aid Measures After Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

First-aid Measures After Ingestion: Rinse mouth. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/Injuries: Under normal conditions of use not expected to present a significant hazard. Under milling, or physical alteration metal dusts may be produced that cause irritation of the respiratory tract, skin, and may be harmful. Molten material may release toxic, and irritating fumes.

Symptoms/Injuries After Inhalation: Not expected to be a primary route of exposure. The primary acute health hazard associated with this product would be the potential for exposure to fumes during metal processing operations. 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. Inhalation of vapors and fumes may cause respiratory irritation and sensitization.

Symptoms/Injuries After Skin Contact: Skin contact is not considered a potential route of exposure. The primary acute health hazard associated with this product would be the potential for exposure to fumes during metal processing operations. Where possible allow molten material to solidify naturally. Removal of solidified molten material from skin requires medical assistance. May cause skin irritation and sensitization.

Symptoms/Injuries After Eye Contact: Not expected to be a primary route of exposure. Dust generated from material cutting may cause a slight irritation. Slivers may be generated, which could cause mechanical irritation or injure the eye.

Symptoms/Injuries After Ingestion: Ingestion is not considered a potential route of exposure.

Chronic Symptoms:

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

Copper: Overexposure to fumes may cause metal fume fever (chills, muscle aches, nausea, fever, dry throat, cough, weakness, lassitude); metallic or sweet taste; discoloration of skin and hair. Tissue damage of mucous membranes may follow chronic dust exposure.

Indium: May cause damage to respiratory system.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If medical advice is needed, have product container or label at hand.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Does not burn. Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: None known.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Dust, chips, or ribbons can be ignited more easily, by an ignition source, by improper machining, or by spontaneous combustion if finely divided and damp.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

Firefighting Instructions: Exercise caution when fighting any chemical fire.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Handle in accordance with good industrial hygiene and safety practice.

6.1.1. For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Responders

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area.

6.2. Environmental Precautions

Avoid release to the environment.

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6.3. Methods and Material for Containment and Cleaning Up

For Containment: If metal is in molten form allow to cool and collect as a solid. If metal is in solid form collect for remelting purposes.

Methods for Cleaning Up: Clear up spills immediately and dispose of waste safely.

6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a dry, cool and well-ventilated place.

Incompatible Products: Keep away from: strong acids, strong bases and oxidation agents.

7.3. Specific End Use(s)

Soldering and brazing.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

Nickel (7440-02-0)		
USA ACGIH	ACGIH TWA (mg/m ³)	1.5 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.015 mg/m ³
USA IDLH	US IDLH (mg/m ³)	10 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1 mg/m ³
Copper (7440-50-8)		
USA ACGIH	ACGIH TWA (mg/m ³)	0.2 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.1 mg/m ³
USA IDLH	US IDLH (mg/m ³)	100 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	1 mg/m ³
Indium (7440-74-6)		
USA ACGIH	ACGIH TWA (mg/m ³)	0.1 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.1 mg/m ³

8.2. Exposure Controls

Appropriate Engineering Controls

: Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

: Protective goggles. Insulated gloves.



Hand Protection

: If material is hot, wear thermally resistant protective gloves.

Eye Protection

: During metal processing, chemical goggles or safety glasses.

Respiratory Protection

: During metal processing, wear approved mask.

Other Information

: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Solid
Appearance	: Wire.
Color	: yellow, silver
Odor	: Odorless.
Odor Threshold	: No data available
pH	: No data available
Relative Evaporation Rate (butylacetate=1)	: No data available

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Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: No data available
Flash Point	: No data available
Auto-ignition Temperature	: No data available
Decomposition Temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor Pressure	: No data available
Relative Vapor Density at 20 °C	: No data available
Relative Density	: No data available
Specific Gravity	: 8.33 g/cm ³ 8.33-8.94
Solubility	: Insoluble.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, Kinematic	: No data available
Viscosity, Dynamic	: No data available
Explosive Properties	: No data available
Oxidizing Properties	: No data available
Explosive Limits	: Not applicable

9.2. Other Information No additional information available

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Hazardous reactions will not occur under normal conditions.

Chemical Stability: Stable under normal conditions. Dust, chips, or ribbons can be ignited more easily, by an ignition source, by improper machining, or by spontaneous combustion if finely divided and damp.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Direct sunlight. Extremely high or low temperatures.

Incompatible Materials: Keep away from: strong acids, strong bases and oxidation agents.

Hazardous Decomposition Products: Metal oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information On Toxicological Effects

Acute Toxicity : Not classified

Copper Nickel Indium Strip, Plate, Bar, Wire and Powder	
LD50 Oral Rat	4233 mg/kg
LD50 Dermal Rat	> 2000 mg/kg
LC50 Inhalation Rat (mg/l)	5.1 mg/l/4h

Nickel (7440-02-0)	
LD50 Oral Rat	> 9000 mg/kg

Skin Corrosion/Irritation: Not classified

Serious Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Nickel (7440-02-0)	
IARC group	2B
National Toxicity Program (NTP) Status	3

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Aspiration Hazard: Not classified

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Symptoms/Injuries After Inhalation: Not expected to be a primary route of exposure. The primary acute health hazard associated with this product would be the potential for exposure to fumes during metal processing operations. 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. Inhalation of vapors and fumes may cause respiratory irritation and sensitization.

Symptoms/Injuries After Skin Contact: Skin contact is not considered a potential route of exposure. The primary acute health hazard associated with this product would be the potential for exposure to fumes during metal processing operations. Where possible allow molten material to solidify naturally. Removal of solidified molten material from skin requires medical assistance. May cause skin irritation and sensitization.

Symptoms/Injuries After Eye Contact: Not expected to be a primary route of exposure. Dust generated from material cutting may cause a slight irritation. Slivers may be generated, which could cause mechanical irritation or injure the eye.

Symptoms/Injuries After Ingestion: Ingestion is not considered a potential route of exposure.

Chronic Symptoms:

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

Copper: Overexposure to fumes may cause metal fume fever (chills, muscle aches, nausea, fever, dry throat, cough, weakness, lassitude); metallic or sweet taste; discoloration of skin and hair. Tissue damage of mucous membranes may follow chronic dust exposure.

Indium: May cause damage to respiratory system.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Copper Nickel Indium Strip, Plate, Bar, Wire and Powder	
LC50 Fish 1	609.1 ml/l
Nickel (7440-02-0)	
LC50 Fish 1	100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio)
EC50 Daphnia 1	100 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 Other Aquatic Organisms 1	0.18 mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata)
LC 50 Fish 2	1.3 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static])
EC50 Daphnia 2	1 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 Other Aquatic Organisms 2	0.174 (0.174 - 0.311) mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata [static])
Copper (7440-50-8)	
LC50 Fish 1	0.0068 (0.0068 - 0.0156) mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 Other Aquatic Organisms 1	0.0426 (0.0426 - 0.0535) mg/l (Exposure time: 72 h - Species: Pseudokirchneriella subcapitata [static])
LC 50 Fish 2	0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Other Aquatic Organisms 2	0.031 (0.031 - 0.054) mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata [static])

12.2. Persistence and Degradability

Copper Nickel Indium Strip, Plate, Bar, Wire and Powder	
Persistence and Degradability	Not established.
Copper (7440-50-8)	
Persistence and Degradability	Not readily biodegradable.

12.3. Bioaccumulative Potential

Copper Nickel Indium Strip, Plate, Bar, Wire and Powder	
Bioaccumulative Potential	Not established.

12.4. Mobility in Soil

No additional information available

12.5. Other Adverse Effects

Other Information

: Avoid release to the environment.

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SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national and international regulations.

SECTION 14: TRANSPORT INFORMATION

In Accordance With ICAO/IATA/DOT/TDG

14.1. UN Number Not applicable

14.2. UN Proper Shipping Name Not regulated for transport.

14.3. Additional Information

Other information : No supplementary information available.

Transport by Sea Not regulated for transport.

Air Transport Not regulated for transport.

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Nickel (7440-02-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on SARA Section 313 (Specific toxic chemical listings)

RQ (Reportable quantity, section 304 of EPA's List of Lists) :	100 lb (only applicable if particles are < 100 µm)
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SARA Section 313 - Emission Reporting	0.1 %
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Copper (7440-50-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 313 - Emission Reporting	1.0 %
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Indium (7440-74-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

US State Regulations

Nickel (7440-02-0)

U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.
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Nickel (7440-02-0)

U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

Copper (7440-50-8)

U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

Indium (7440-74-6)

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: OTHER INFORMATION

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Carc. 2	Carcinogenicity Category 2
Skin Sens. 1	Skin sensitization Category 1

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STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H317	May cause an allergic skin reaction
H335	May cause respiratory irritation
H351	Suspected of causing cancer
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H412	Harmful to aquatic life with long lasting effects

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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