

**Section 1: Identification****Product Identifier**

COPPER, NICKEL

**Product Name**

CUPRO NICKEL, 90/10, 70/30, CDA ALLOY 706, 715

**Relevant Identified Uses of the Substance or Mixture and Uses Advised Against***Recommended Use:***Supplier Details:** Hussey Copper, Ltd.

100 Washington Street

Leetsdale, PA 15317

Telephone (General): (724) 251-4200

Website: <http://www.husseycopper.com/>**Emergency Telephone Number:** (724) 251-4200**Section 2: Hazard Identification****Classification(s)****Skin Sensitization:** Hazard Category 1B**Carcinogenicity:** Hazard Category 2**Specific Target Organ Toxicity,****Single Exposure:** Hazard Category 3**Label Symbol(s):** Health Hazard, Exclamation Point**Label Signal Word(s):** Warning**Label Elements**

OSHA HCS 2012

WARNING

*Hazard Statements*

May cause respiratory irritation. -H335

May cause an allergic skin reaction. -H317

Suspected of causing cancer by inhalation. -H351

*Precautionary Statements*

Do not handle until all safety precautions have been read and understood. -P202

Avoid breathing dust or fumes. -P261

Wear protective gloves and eye/face protection. -P280

If skin irritation or rash occurs, get medical advice or attention. -P333

If exposed or concerned, get medical advice/attention. -P308

*Storage/Disposal*

Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. – P501

**Section 3: Composition/Information on Ingredients**

SECTION 3 CONTINUED ON NEXT PAGE

**Section 3: Composition/Information on Ingredients (continued)**

INGREDIENT	PERCENT		CAS NO.	OSHA-PEL/ACGIH-TLV
	706	715		
*COPPER	86.5	65.0 Min.	7440-50-8	FOR EXPOSURE LEVELS SEE SECTION 8
*NICKEL	9.0 - 11.0	29.0 - 32.0	7440-02-0	
IRON	1.0 - 1.75	1.0 Max	(iron) 1309-37-1	
*MANGANESE	.75	.25 - 1.0	(oxide) 7439-96-5	

**HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS OR GASES:** If exposure to copper dust/fume is kept below Permissible Exposure Limits (PEL)/Threshold Limit Value (TLV) all trace elements should not pose any health risk. \*Chemical(s) listed as a toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

See Section 11 for Toxicological Information

**Section 4: First-Aid Measures**

**Description of First-Aid Measures**

*Inhalation*

If symptoms of lung irritation occur (coughing, wheezing or breathing difficulty), remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep affected person warm and at rest. Get medical attention.

*Skin*

If exposed to dust or fumes, wash skin with plenty of water. Remove contaminated clothing and shoes and launder before reuse. If skin irritation or rash develops and persists or recurs, get medical attention.

*Eyes*

Immediately flush out fume and dust particles with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If eye irritation develops, call a physician at once.

*Ingestion*

Not a likely route of exposure for finished metal alloy. If dust is ingested, immediately drink water to dilute. Consult a physician if symptoms develop.

**Most Important Symptoms and Effects, Both Acute and Delayed**

Refer to Section 11 – Toxicological Information

**Indication of Any Immediate Medical Attention and Special Treatment Needed**

**Notes to Physician**

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

See Section 11 for Toxicological Effects

**Section 5: Fire-Fighting Measures**

**Flash Point (Method used)**

Not Applicable \*

**Extinguishing Media**

Not Applicable

**Special Fire Fighting Procedures**

Not Applicable

**Unusual Fire and Explosion Hazards**

Not Applicable

*\*Under normal conditions. Heavy concentrations of fine copper dust may cause flash fire if exposed to ignition source.*

## Section 6: Accidental Release Measures

### Methods and Materials:

If a finely-divided form of product is spilled, clean up spillage so as to minimize dispersion of dust. Either wet sweeping or vacuuming using HEPA filtration is recommended.

### Personal Precautions:

Avoid contact with skin, eyes, and mucous membranes.

### Environmental Precautions:

## Section 7: Handling and Storage

### Precautions for Safe Handling

#### Handling

Avoid breathing dust or fumes. Practice good housekeeping and personal hygiene procedures. Preclude from exposure to fume or dust those individuals with diseases of the skin, sinuses, and lungs.

### Conditions for Safe Storage, Including any Incompatibilities

#### Storage

Do not store in proximity to incompatible materials (see Section 10).

#### Incompatible Materials or Ignition Sources

(Material to avoid): Dust and fumes: acetylene, chlorine  
Metals: acids and oxidizers.

## Section 8: Exposure Controls/Personal Protection

**NOTE:** The selection of the necessary level of engineering controls and personal protective equipment will vary depending upon the conditions of use and the potential for exposure. The following are therefore only general guidelines that may not fit all circumstances. Control measures to consider include:

### Engineering Controls

Use adequate local or general ventilation to maintain the concentration in the working environment well below recommended occupational exposure limits. Supply sufficient replacement air to make up for air removed by the exhaust system.

### Protective Clothing

Gloves and coveralls or other work clothing are recommended to prevent prolonged or repeated direct skin contact when copper is processed. Appropriate eye protection should be worn where fume or dust is generated. Where hot or molten metal is handled, heat resistant gloves, goggles or face shield, and clothing to protect from hot metal splash and radiant heat should be worn. Safety type boots are recommended. Where copper dust or fumes are generated and cannot be controlled to within acceptable levels by engineering means, use appropriate NIOSH-approved respiratory protection equipment (a 42CFR84 Class N, R or P-95 particulate filter cartridge as a minimum).

### General Hygiene Considerations

Always practice good personal hygiene. Refrain from eating, drinking, or smoking in work areas. Thoroughly wash hands before eating, drinking, or smoking in appropriate, designated areas.

### Exposure Limits:

Copper Dust & Mists	OSHA (PEL)	TWA = 1 mg/m <sup>3</sup>	ACGIH (TLV)	TLV = 1 mg/m <sup>3</sup>
Copper Fumes	OSHA (PEL)	TWA = 0.1 mg/m <sup>3</sup>	ACGIH (TLV)	TLV = 0.2 mg/m <sup>3</sup>
Nickel	OSHA (PEL)	TWA = 1 mg/m <sup>3</sup>	ACGIH (TLV)	TLV = 1 mg/m <sup>3</sup>
Iron Oxide Fume	OSHA (PEL)	TWA = 10 mg/m <sup>3</sup>	ACGIH (TLV)	TLV = 5 mg/m <sup>3</sup>
Manganese	OSHA (PEL)	Ceiling = 1 mg/m <sup>3</sup>	ACGIH (TLV)	TLV = 0.2 mg/m <sup>3</sup>

## Section 9: Physical and Chemical Properties

Property	706 Alloy	715 Alloy
Appearance	Silver/Red Metallic	Silver/Red Metallic
Odor	None	None
Molecular Weight	Not Applicable - Mixture	Not Applicable - Mixture
Physical State	Solid	Solid
pH	Not Applicable	Not Applicable
Melting Point	2010°F (1099°C)	2140°F (1171°C)
Boiling Point	No Data	No Data
Vapor Pressure (mm Hg)	Not Applicable	Not Applicable
Vapor Density (Air = 1)	Not Applicable	Not Applicable
Solubility in Water (20°C)	Negligible	Negligible
Specific Gravity (g/cc)	8.94	8.94
Bulk Density (g/cc)	8.94	8.94

## Section 10: Stability and Reactivity

### Reactivity

None Reasonably Foreseeable

### Stability

Stable

### Hazardous Polymerization

Will Not Occur

### Risk of Dangerous Reactions

See "Conditions to Avoid"

### Conditions to Avoid

Nickel and Copper can form unstable acetylides in contact with acetylene gas.

### Incompatible Materials

Acetylene; ammonia; azides; nitric acid; halogens; ethylene imine; ethylene oxide; chlorine trifluoride; sulfuric acid; peroxides; peroxyformic acid; oxalic acid; tartaric acid; 1-bromo-2-propyne; permonosulfuric acid; hydrazine mononitrate; hydrazoic acid; hydrogen sulfide; bromates, chlorates, and iodates of alkali and alkali earth metals; hydroxylamine; selenium; tellurium; carbon disulfide; hydrazine; performic acid; phosphorus; sulfur; dioxane; titanium plus potassium chlorate.

### Hazardous Decomposition Products

Heating to elevated temperatures may liberate metal/metal oxide fumes.

## Section 11: Toxicological Information

### Potential Exposure Routes

For Dust: Ingestion, Inhalation, and Eye Contact

For Fumes: Inhalation and Eye Contact. The finished alloy metal is not hazardous.

SECTION 11 CONTINUED ON NEXT PAGE

## Section 11: Toxicological Information (Continued)

Acute Animal Toxicity Data					
Type	For Product	For Components			
		Copper	Nickel	Iron	Nickel
Oral LD <sub>50</sub>	Believed to be >5g/kg	3.5 mg/kg (mouse, intraperitoneal)	>5 g/kg (rat)	30 g/kg (rat)	9 g/kg (rat)
Dermal LD <sub>50</sub>	Believed to be >2 g/kg	375 mg/kg (rabbit, subcutaneous)	>7.5 g/kg (rabbit, subcutaneous)	No Data	No Data
Inhalation LC <sub>50</sub>	Believed to be slightly toxic	>12 mg/kg (rat, intratracheal)	No Data	No Data	No Data
Irritation	Eye & Respiratory Irritant, sensitizer	Respiratory Irritant	Respiratory Irritant, Skin Sensitizer	Eye Irritant	Mild Eye and Skin Irritant

### Subchronic/Chronic Toxicity

No Information for Product

### Carcinogenicity

In laboratory animal studies, chronic exposure to high concentrations of nickel has caused an increase in lung and nasal tumors. The International Agency for Research on Cancer (IARC) has classified nickel as possibly carcinogenic to humans, group 2B. The National Toxicology Program (NTP) classifies nickel as a known human carcinogen. ACGIH classifies nickel metal as "A5" (not suspected as a human carcinogen).

### Mutagenicity

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

### Reproductive, Teratogenicity or Developmental Effects

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.

### Neurological Effects

This product is not known or reported to cause neurological effects. Chronic exposure to very high concentrations of manganese dust has caused nervous system effect including muscle weakness, tremors and behavioral changes in humans.

### Interactions With Other Chemicals That Enhance Toxicity

None known or reported.

### Symptoms Related to Overexposure

Pre-existing pulmonary diseases (e.g., bronchitis, asthma) may be aggravated by inhalation overexposure, particularly as fume.

### Delayed Effects from Long Term Overexposure

Chronic overexposure by inhalation and/or ingestion may aggravate pre-existing diseases of the liver, kidneys, and gastrointestinal and respiratory systems.

## Section 12: Ecological Information

No ecological data is available for the product. Available ecological data for the components is as follows:

### Copper

No data available for Aquatic Toxicity to Fish and Invertebrates, Aquatic Toxicity to Plants and Microorganisms, Toxicity to Terrestrial Organisms, Persistence and Degradability, Bioaccumulation Potential, Mobility in Soil.

### Nickel

Aquatic Toxicity: LC50 >100 mg/liter for 4 d. (Freshwater fish)

Aquatic Toxicity: EC50 >100 mg/liter for 48 hrs. (Daphnia)

Aquatic Toxicity: EC50 = 0.18 mg/liter for 3 d. (Algae)

No data available for Toxicity to Terrestrial Organisms, Persistence and Degradability, Bioaccumulation Potential, or Mobility in Soil.

## Section 13: Disposal Considerations

If this product becomes a waste, it DOES NOT meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D. Care must be taken to prevent environmental contamination from the use of this material. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and non-hazardous wastes.

This product may be a candidate for metal reclamation.

## Section 14: Transport Information

Transport is not regulated by USDOT, TDG (Canada), IATA, or IMO.

## Section 15: Regulatory Information

### US Federal Regulations

#### TSCA

The components of this product are listed on the Toxic Substances Control Act inventory.

#### CERCLA

Copper, R.Q. = 5,000 lbs.

Nickel, R.Q. = 100 lbs.

#### SARA 313

Copper, Nickel, Manganese

#### SARA 313 Hazard Class

Health: For dust and fume only

Acute: Yes

Chronic: Yes

Fire: None

Reactivity: None

Release of Pressure: None

#### SARA 302 EHS List

None of the components of this product are listed.

### State Right-to-Know Status

CA Prop. 65 – Copper: Not Listed; Nickel: Yes; Iron: Not Listed; Manganese: Not Listed

New Jersey – Copper: Yes; Nickel: Yes; Iron: Not Listed; Manganese: Yes

Pennsylvania – Copper: Yes; Nickel: Yes; Iron: Not Listed; Manganese: Yes

Massachusetts – Copper: Yes; Nickel: Yes; Iron: Not Listed; Manganese: Yes

Michigan – Copper: Yes; Nickel: Yes; Iron: Not Listed; Manganese: Not Listed

## Section 15: Regulatory Information (*Continued*)

### European Regulations

Because this material contains nickel at > 0.1%, this material is classified as Xn, Harmful. However, this material in its Massive solid form is not required to be labeled under EC regulations. German WGK Classification: Unknown

### Canadian Regulations

#### DSL LIST

The components of this product are on the DSL or are exempt from reporting under the New Substances Notification Regulations.

#### IDL

Copper, Nickel, Manganese

#### WHMIS

This product is considered to be a manufactured article and therefore not subject to WHMIS requirements.

## Section 16: Other Information

### Disclaimer

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

### Preparation Information

Date of Preparation: 7/7/2015

Date of Prior SDS: 9/19/2005