

# Safety Data Sheet

## 1. Supplier and Manufacturer

Aufhauser Corporation  
 39 West Mall  
 Plainview NY 11803 USA  
 Telephone: 516-694-8696 [www.brazing.com](http://www.brazing.com)  
 Emergency Phone Number: 516-694-8696 or 212-246-0205  
 CHEMTREC 24-hour Emergency Response: 800-424-9300 or 703-527-3887  
 SDS Number: AG-w Ni no Cad 201703  
 Product Codes: **SilverAlloy (with Nickel, no Cadmium): A40N2, A40N5, A49NM, A50N, A54N, B56N, B603NT, B72N, B72NV. LayerMet: A-40Ni2, A-49NiMn, A-50Ni2, TriMet A49NM, TriMet A50N.**  
 Product Use(s): Alloys for brazing and other metallurgical processes.



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## 2. Hazards 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 Hazard Statement(s):** May cause respiratory irritation. May cause an allergic skin reaction. Suspected of causing cancer by inhalation.

**Label Precautionary Statement(s):** Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Avoid breathing dust or fume. Use only outdoors or in a well-ventilated area. Store locked up. Wear protective gloves and eye/face protection. If skin irritation or rash occurs, get medical advice or attention. If exposed or concerned, get medical advice/attention.

IF ON SKIN: Wash with plenty of water. Wash contaminated clothing before reuse. Contaminated work clothing must not be allowed out of the workplace.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a Poison Control Center or doctor if you feel unwell.

Dispose of contents and container in accordance with applicable regulations. Twenty to 90% of the product ingredients have unknown acute toxicity.

WARNING: These products contain a chemical(s) known to the State of California to cause cancer.

## 3. Composition/information on ingredients

<i>Ingredient</i>	<i>CAS Number</i>	<i>%wt.</i>
Copper	7440-50-8	14-80
Silver	7440-22-4	10-75
Zinc	7440-66-6	2-45
Nickel	7440-02-0	<1-24
Tin	7440-31-5	0-6
Manganese	7439-96-5	0-8
Titanium	7440-32-6	0-5

#### 4. First aid measures

**Eye:** Flush affected areas with water for at least fifteen minutes. Seek medical assistance if necessary.

**Skin:** Remove contaminated clothing. Wash affected area with large quantities of water for at least five minutes. Seek medical attention if necessary. Launder or dry-clean clothing before reuse.

**Ingestion:** If subject is conscious, induce vomiting. If unconscious or convulsive, seek immediate medical assistance. Do not give anything by mouth to an unconscious or convulsive person.

**Inhalation:** If signs and symptoms of toxicity are observed, remove subject from area, administer oxygen, and seek medical attention. Keep the subject warm and at rest. Perform artificial respiration if breathing has stopped.

**Note to Physician:** None of the components are acutely toxic by ingestion, nor are they absorbed through the skin. Extensive or prolonged skin contact may cause dermatitis and/or argyria.

#### 5. Firefighting measures

**Fire and Explosion Hazards:** These products are non-flammable and non-explosive. If present in a fire or explosion, they may emit fumes of the constituent metals or their oxides.

**Extinguishing Media:** Use dry chemical. Do not use water.

**Fire Fighting Instructions:** If fighting a fire in which these products are present, wear a self-contained breathing apparatus with full face piece operated in pressure-demand or other positive pressure mode.

#### 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:** Prevent spills from entering sewers or contaminating soil.

#### 7. Handling and storage

No special handling precautions are required.

**Work and Hygiene Practices:** To prevent ingestion following use of the product, wash hands and face before eating, drinking, applying cosmetics, or using tobacco. Remove contaminated clothing or protective equipment before entering eating/drinking areas.

**Storage Precautions:** Do not store in proximity to incompatible materials (see Section #10).

#### 8. Exposure controls/personal protection.

##### Ingredients – Exposure Limits

Copper	ACGIH TLVs: 0.2 mg/m <sup>3</sup> TWA (fume); 1 mg/m <sup>3</sup> TWA (dusts and mists)	OSHA PELs: 0.1 mg/m <sup>3</sup> TWA (fume); 1 mg/m <sup>3</sup> TWA (dusts and mists)
Nickel	ACGIH TLV: 1.5 mg/m <sup>3</sup> TWA	OSHA PEL: 1 mg/m <sup>3</sup> TWA
Silver	ACGIH TLV: 0.1 mg/m <sup>3</sup> TWA (metal)	OSHA PEL: 0.01 mg/m <sup>3</sup> TWA
Zinc	ACGIH TLVs (as ZnO): 2 mg/m <sup>3</sup> TWA; 10 mg/m <sup>3</sup> STEL (respirable fractions)	OSHA PEL: 5 mg/m <sup>3</sup> TWA (as respirable fraction of ZnO dust or fume)
Tin	ACGIH TLV: 2 mg/m <sup>3</sup> TWA	OSHA PEL: 2 mg/m <sup>3</sup> TWA
Manganese	ACGIH TLV: 0.02 mg/m <sup>3</sup> TWA (respirable)	OSHA PEL: 5 mg/m <sup>3</sup> TWA (ceiling)

##### Ingredients – Biological Limits

Copper: No ACGIH BEI(s) or other biological limit(s)

Nickel: No ACGIH BEI(s) or other biological limit(s)

Silver: No ACGIH BEI(s) or other biological limit(s)

Zinc: No ACGIH BEI(s) or other biological limit(s)

Tin: No ACGIH BEI(s) or other biological limit(s)

Manganese: No ACGIH BEI(s) or other biological limit(s)

**Engineering Controls:** Use appropriate local exhaust ventilation adequate to maintain concentrations of all components and their byproducts to within their applicable standards.

**Eye/Face Protection:** Wear eye protection adequate to prevent eye contact with finely-divided product and eye injury if the products are used with a flame. Plastic-frame spectacles with side shields and filter lenses (shade #3 / #4) are recommended.

**Skin Protection:** Wear appropriate protective gloves and clothing to prevent skin injury if the products are used with a flame and/or for prolonged or repeated contact with finely-divided forms of product. Avoid flammable fabrics

**Respiratory Protection:** If an exposure level to a component(s) exceeds an applicable standard, use a NIOSH-approved respirator having a configuration (face piece, filter media, assigned protection factor, etc.) effective for the concentration of the component(s) generated. For guidance on selection and use of respirators, consult American National Standard Z88.2 (ANSI, New York, NY 10036, USA).

## 9. Physical and chemical properties

Appearance: light yellow metals, various forms	Odor: none
Odor threshold: not applicable	pH: not applicable
Melting Point: >1220F/660C	Freezing point: not applicable
Boiling point/boiling range: not determined	Flash Point: not applicable
Evaporation Rate: not applicable	Flammability Class: not applicable
Lower Explosive Limit: not applicable	Upper Explosive Limit: not applicable
Vapor pressure: not applicable	Vapor density: not applicable
Relative density (H2O): approx. .0	Solubility (H2O): insoluble
Oil-water partition coefficient: not applicable	Auto-ignition Point: not applicable
Decomposition temperature: not applicable	Viscosity: not applicable

## 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:** Silver 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; hydrogen sulfide; hydrazine mononitrate; hydrazoic acid; bromates, chlorates, and iodates of alkali and alkali earth metals; hydroxylamine; selenium; carbon disulfide; ammonium nitrate; hydrazoic acid; tellurium.

**Hazardous Decomposition Products:** Heating to elevated temperatures may liberate metal/metal oxide fumes.

## 11. Toxicological information

This product has not been subject to toxicological testing by the supplier/ manufacturer.

### Toxicological Data

Copper	LD50: No data available	LC50: No data available
Nickel	LD50: 5,000 mg/kg (oral/rat)	LC50: No data available
Silver	LD50: >2,000 mg/kg (oral/rat)	LC50: No data available
Zinc	LD50: No data available	LC50: No data available
Tin	LD50: No data available	LC50: No data available
Manganese	LD50: 9000 mg/kg (oral/rat)	LC50: No data available
Titanium	LD50: No data available	LC50: No data available

**Primary Routes(s) of Entry:** Ingestion; inhalation.

**Eye Hazards:** Eye contact with these products in finely-divided forms may cause irritation, conjunctivitis, ulceration of the cornea, and/or argyria, a permanent gray discoloration of the eyes, skin, mucous membranes, and respiratory tract.

**Skin Hazards:** Skin contact with these products, particularly in finely-divided forms, may cause irritation, argyria, discoloration, and/or contact dermatitis.

**Ingestion Hazards:** Ingestion of these products in finely-divided forms may cause nausea, vomiting, and gastrointestinal irritation.

**Inhalation Hazards:** Inhalation of toxicologically-significant quantities of the components is unlikely when the product is used in accordance with instructions and specified protective measures (see Section #8).

**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 system.

### Carcinogenicity:

Nickel is classified as a potential human carcinogen by IARC ("2b", possibly carcinogenic to humans) and NTP ("K", known to be a human carcinogen). Exposure to some compounds of nickel has been shown to increase the risk of various cancers, although these effects have not been demonstrated among individuals occupationally exposed only to nickel metal. ACGIH classifies nickel metal as "A5" (not suspected as a human carcinogen).

**Germ Cell Mutagenicity:** Not determined.

**Reproductive Effects:** The product contains no chemicals determined to be damaging to fertility of the unborn child.

### Acute Toxicity Estimates:

LD50 (oral): >2,000 mg/kg

LD50 (dermal): no data available

LC50: no data available

**Interactive Effects of Components:** no data available

## 12. Ecological information

**Product:** 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.

**Components:**

Copper	No data available.
Silver	No data available.
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.
Zinc	No data available.
Tin	No data available.
Manganese	No data available.
Titanium	No data available.

Ozone Depletion Potential: This product contains no ingredients listed in the Annexes to the Montréal Protocol on Substances that Deplete the Ozone Layer.

## 13. Disposal considerations

Do not discharge waste product into sanitary or storm sewers or allow it to contaminate soil. Consult applicable Federal, State/Provincial, and local regulations.

## 14. Transport information

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

## 15. Regulatory information

### United States Regulatory Information

All components of this product are listed on the EPA's TSCA inventory. SARA Hazard Classes: Acute Health Hazard; Chronic Health Hazard SARA Section 313 Notification

These products contain these ingredients in concentrations greater than 1% (for carcinogens 0.1%) regulated under Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 or 40 CFR 372.

Copper (CASRN 7440-50-8)

Nickel, elemental (CASRN 7440-02-0)

Silver (CASRN 7440-22-4)

Ingredient(s) - State Regulations

### Canadian Regulatory Information

All components of these products are listed on either the Domestic Substances List (DSL) or the Nondomestic Substances List (NDSL).

WHMIS Class(es) and Division(s): D1A, D2A, D2B Component(s) on Ingredients Disclosure List:

Nickel, elemental (CASRN 7440-02-0)

Copper, elemental (CASRN 7440-50-8)

Silver, elemental (CASRN 7440-22-4)

Tin, elemental (CASRN 7440-31-5)

This product has been classified according to the hazard criteria of the CPR and this SDS contains all of the information required by the CPR.

WARNING: This product may contain chemicals, and when used for welding or brazing may produce fumes or gases containing chemicals known to the state of California to cause cancer, and/or birth defects (or other reproductive harm).

### Proposition 65 (California):

- Chemicals known to cause cancer: 7440-02-0 Nickel.
- Chemicals known to cause reproductive toxicity for females none.
- Chemicals known to cause reproductive toxicity for males: none.
- Chemicals known to cause developmental toxicity: none.

### State Right to Know (RTK) Listings

**US. Massachusetts RTK – Substance List:** nickel, silver, tin, copper, manganese, zinc

**US. Minnesota – Hazardous Substance List:** nickel, silver, tin, copper, manganese

**US. New Jersey – RTK Hazardous Substance List:** nickel, silver, tin, copper, manganese, zinc

**US. Pennsylvania RTK List:** nickel, silver, tin, copper, manganese, zinc

## 16. Other information including information on preparation and revision of the SDS

NFPA Ratings Health - 2 Flammability - 1 Reactivity – 1	HMIS Ratings Health – 2 (serious chronic hazard) Flammability – 1 (slight hazard) Physical Hazard – 1 (minimal hazard)
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**PPE:** Aufhauser Corporation recommends use of protective eyewear and gloves (Personal Protection Index "B") as standard PPE. HMIS recommends that its ratings be used only in conjunction with a fully implemented HMIS program, and that specific PPE codes be created by the user, who is familiar with the actual conditions under which the product is used. We cannot anticipate every condition of the product's use, and it is the user's responsibility to evaluate the hazards pertinent to its specific operations, and to determine the specific PPE required.

Date of Preparation: 2017-Mar

### *Disclaimer*

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**Aufhauser Corporation**