

Silver-Cadmium Alloys

Material Safety Data Sheet

1. Product And Company Identification

----- Supplier

Lucas Milhaupt, Inc.
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Cudahy, WI 53110
www.lucasmilhaupt.com

Handy & Harman of Canada, Ltd.
290 Carlingview Drive
Rexdale, ON M9W5G1
www.handyharmancanada.com

Supplier Emergency Contacts & Phone Numbers

Lucas-Milhaupt, Inc.: 414-769-6000
Handy & Harman of Canada, Limited: 416-675-1860

Manufacturer

Lucas-Milhaupt, Inc.
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Cudahy, WI 53110
Telephone: 414-769-6000
FAX: 414-769-1093

Manufacturer Emergency Contacts & Phone Numbers

Chemtrec: 800-424-9300

Issue Date: 10/01/2010

These Alloys Are Sold Under the BRAZE or SILVALOY Tradenames

Product Name: Silver-Cadmium Alloys

MSDS Number: 105

Product Codes: 15-851, 15-866, 15-880, 15-910, 24-937, 32-020, 32-053,
and 39-864.

WARNING: These products contain a chemical(s) known to the State of
California to cause cancer and birth defects or other reproductive harm.

2. Composition/Information On Ingredients

Ingredient Name CAS Number %

Cadmium 7440-43-9 6-95
Silver 7440-22-4 5-94

3. Hazards Identification

----- Primary Routes(s) Of Entry

Ingestion; inhalation.

Eye Hazards

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

Skin Hazards

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

Ingestion Hazards

Ingestion of this product in finely-divided form may cause nausea, vomiting, and gastrointestinal irritation.

Inhalation Hazards

Inhalation of the components of these products is not known to present a significant risk to health when used according to instructions and with appropriate protective measures (see Section #8). Inhalation of component elements has been reported to cause one or more of the following symptoms and effects upon excessively high or prolonged exposure:

CADMIUM: Acute exposure to cadmium may cause pneumonitis, bronchitis, and pulmonary edema. Chronic exposure may cause gastrointestinal symptoms, anemia, rhinitis, discoloration of teeth, kidney disease, microfractures, and cancer.

SILVER: Chronic exposure via inhalation may cause argyria.

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.

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. Inhalation of cadmium fume may cause severe respiratory illness.

5. Fire Fighting Measures

Flash Point: Not Applicable (N/Apl.)
Autoignition Point: N/Apl.

Flammability Class: N/Apl.

Explosive Limit: N/Apl.

Explosive Limit: N/Apl.

Fire And Explosion Hazards

In finely-divided form, these products may ignite when exposed to flame or by reaction with incompatible materials (see Section #10). If present in a fire or explosion, they may emit fumes of the constituent metals or metal oxides.

Extinguishing Media

Use dry chemical. Do not use water.

Fire Fighting Instructions

If fighting a fire in which this product is present, wear a self-contained breathing apparatus with full facepiece operated in pressure-demand or other positive pressure mode.

6. Accidental Release Measures

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

7. Handling And Storage

Handling Precautions

No special handling precautions are required.

Storage Precautions

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

Work/Hygienic Practices

To minimize ingestion, wash hands and face before eating, drinking, applying cosmetics, or using tobacco.

8. Exposure Controls/Personal Protection

Engineering Controls

Use local exhaust ventilation adequate to maintain concentrations of all components to within their applicable standards.

Eye/Face Protection

Wear eye protection adequate to prevent eye contact with finely-divided product and injury if the product is used with a flame. Plastic-frame spectacles with side shields and filter lenses (shade #3 or #4) are recommended.

Skin Protection

Wear appropriate protective gloves and clothing to prevent skin injuries if the product is 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 exceeds an applicable exposure standard, use a NIOSH-approved respirator having a configuration (type of facepiece, filter media, assigned protection factor, etc.) appropriate to the concentration of the contaminant(s) generated. For guidance on selection and use of respirators, consult American National Standard Z88.2 (ANSI, New York, NY 10036 USA).

Ingredient(s) - Exposure Limits

Cadmium

ACGIH TLVs: Inhalable 0.01 mg/m3 TWA; Respirable 0.002 mg/m3 TWA
OSHA PEL: 5 micrograms/m3 TWA

Silver

ACGIH TLV: 0.1 mg/m3 TWA (metal) OSHA PEL: 0.01 mg/m3 TWA

9. Physical And Chemical Properties

Appearance

Odorless silver-white metal in form of wire, rod, strip, powder, grain, or Preformed shapes.

Chemical Type: alloy

Physical State: solid

Melting Point: 640-1650F./338-900C.

Specific Gravity: 8.8-10.3

Solubility: Insoluble

Other physical properties (odor threshold, evaporation rate, vapor pressure, vapor density, oil-water partition coefficient, percent volatiles, percent VOCs) are not applicable to this product.

10. Stability And Reactivity

Stability: stable

Hazardous Polymerization: will not occur

Conditions To Avoid (Stability)

Silver can form an unstable acetylide if in contact with acetylene gas.

Incompatible Materials

Strong oxidizers; ammonia; azides; nitric acid; ethylene imine; chlorine trifluoride; sulfuric acid; inorganic and organic peroxides; peroxyformic acid; oxalic acid; tartaric acid; 1-bromo-2-propyne; permonosulfuric acid; ammonium nitrate; hydrazoic acid.

Hazardous Decomposition Products

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

11. Toxicological Information

Reproductive Effects

In experimental studies, cadmium has been found to cause reproductive

abnormalities, including reduced birth weights, reduced viability, and behavioral alterations, among offspring of female rodents. Male rodents exposed to cadmium have been found to have testicular damage, reduction in sperm counts, and reduced fertility.

Mutagenicity (Genetic Effects)

Cadmium has produced mutagenic effects on mammalian cell cultures.

Conditions Aggravated By Overexposure

Pre-existing pulmonary diseases (e.g., bronchitis, asthma) may be aggravated by inhalation overexposure, particularly as fume. Chronic overexposure by inhalation and/or ingestion may aggravate pre-existing diseases of the liver, kidneys, gastrointestinal system, musculoskeletal system, and nervous system.

Ingredient(s) - Carcinogenicity

Cadmium

OSHA Regulated Carcinogen

NTP - Listed On The National Toxicology Program

Listed In The IARC Monographs

Ingredient(s) - Toxicological Data

Cadmium

LD50: 2,330 mg/kg (oral/rat)

LC50: 25mg/m3 for 30min (rat)

Silver

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

LC50: No data available

12. Ecological Information

In their intended manner of use, these products should not be discharged into the environment, and adverse effects on ecosystems are not anticipated under recommended conditions of use, storage, and disposal.

13. Disposal Considerations

Dispose of unused or unusable product in accordance with applicable Federal, State/Provincial, and local regulations.

14. Transport Information

These products are not Hazardous Substances or Dangerous Goods per USDOT, TDG (Canada), IATA, or IMO regulations.

15. Regulatory Information

TSCA Information

All components of these products are listed on the EPA's TSCA Inventory.

SARA Hazard Classes

Acute Health Hazard; Chronic Health Hazard

OSHA Precautionary Label

DANGER
CONTAINS CADMIUM
CANCER HAZARD
AVOID CREATING DUST
CAN CAUSE LUNG AND KIDNEY DISEASE

Ingredient(s) - U.S. Regulatory Information

Cadmium

SARA Title III - Section 313 Form "R"/TRI Reportable Chemical

Silver

SARA Title III - Section 313 Form "R"/TRI Reportable Chemical

Ingredient(s) - State Regulations

Cadmium

California - Proposition 65

Canadian Regulatory Information

All components of these products are on the Domestic Substances List.

WHMIS Class(es) and Division(s): D1A, D2A, D2B

Component(s) on Ingredients Disclosure List:

1. Cadmium, elemental (CASRN 7440-43-9)
2. Silver, elemental (CASRN7440-22-4)

16. Other Information

HMIS Ratings

Health - 3* Flammability - 1 Physical Hazard - 0 PPE - see Note

Note: Lucas-Milhaupt, Inc. and Handy & Harman of Canada, Ltd. recommend use of safety glasses and protective 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.

NFPA Ratings

Health - 3 Flammability - 1 Reactivity - 0

Revision Information

This MSDS supersedes a previous MSDS dated 05/25/2004.

Disclaimer

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Lucas Milhaupt, Inc.

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