

Braze Core Aluminum-Zinc Alloys

Material Safety Data Sheet

1. Product And Company Identification

Supplier

Lucas Milhaupt, Inc. Handy & Harman of Canada, Ltd.
5656 South
Pennsylvania Ave. 290 Carlingview Drive
Cudahy, WI 53110 Rexdale, ON M9W 5G1

Supplier Emergency Contacts & Phone Number

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

Manufacturer

Lucas-Milhaupt, Inc.
A Handy & Harman Company
5656 South Pennsylvania Avenue
Cudahy, WI 53110
Telephone Number: 414-769-6000
FAX Number: 414-769-1093

Manufacturer Emergency Contacts & Phone Number

Chemtrec: (800) 424-9300

Issue Date: 09/19/2007
Product Name: Braze Core Aluminum-Zinc Alloys
CAS Number: Not Established
MSDS Number: 503
Product Code: 30-802; 30-815

2. Composition/Information On Ingredients

Ingredient Name - (CAS Number) - %

Aluminum (7429-90-5) 2 - 15
Cesium aluminum fluoride (138577-01-2) < 5
Zinc (7440-66-6) 85 - 98

No Data Available...

3. Hazards Identification

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

Inhalation.

Eye Hazards -----

Except for the potential for physical injury, eye contact with these products is not a plausible mode of exposure.

Skin Hazards -----

Except for the potential for physical injury, skin contact with these products is not a plausible mode of hazardous exposure.

Ingestion Hazards -----

Ingestion of these products, as solids, is not a plausible mode of exposure.

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:

ALUMINUM: Aluminum oxide, a potential oxidation byproduct, has been associated with respiratory disorders among individuals also exposed to crystalline silica.

CESIUM ALUMINUM FLUORIDE: Acute inhalation of fluorides may irritate the nose, throat, and respiratory tract; may cause cough, nose bleeds, nausea, vomiting, chest tightness, chills, fever, pneumonitis, and pulmonary edema. Chronic exposure may cause liver and kidney damage, impaired pulmonary function, and

fluorosis (a disease characterized by mottled teeth, osteosclerosis, and pain and loss of mobility in joints).

ZINC: Acute exposure to zinc oxide may cause respiratory tract irritation and "metal fume fever", which is characterized by a metallic taste, cough, dry throat, chills, fever, tightness of chest, headache, nausea, shortness of breath, vomiting, and fatigue.

4. First Aid Measures

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

The component cesium aluminum fluoride in the flux may be harmful if ingested, but ingestion is unlikely due to the physical form of the product. No components are absorbed through the skin.

5. Fire Fighting Measures

Flash Point: N/A °F N/A °C
Autoignition Point: N/A °F N/A °C
Flammability Class: N/A
Lower Explosive Limit: N/A
Upper Explosive Limit: N/A
Fire And Explosion Hazards

These products are non-flammable and non-explosive. However, if present in a fire or explosion, they may emit fumes of the constituent metals or metal oxides and gaseous and particulate fluorides.

Extinguishing Media

Use dry chemical, foam, or carbon dioxide. 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 facepiece operated in pressure-demand or other positive pressure mode.

6. Accidental Release Measures

Not applicable.

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

As good hygiene practice, after using the product wash hands and face before eating, drinking, applying cosmetics, or using tobacco.

8. Exposure Controls/Personal Protection

Engineering Controls

Use appropriate ventilation (e.g., dilution, local exhaust) adequate to maintain concentrations of all components to within their applicable standards.

Eye/Face Protection

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

Skin Protection

Wear appropriate protective gloves and clothing to prevent skin injury if the product is used with a flame. 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 respiratory protection, consult American National Standard Z88.2 (ANSI, New York, NY 10036 USA).

Ingredient(s) - Exposure Limits

Aluminum

ACGIH TLVs: 10 mg/m³ TWA (Al metal)

OSHA PELs: 15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)

Cesium aluminum fluoride

ACGIH TLVs: 2.5 mg/m³, as F⁻; 2 mg/m³ as Al (soluble salts)

OSHA PEL: 2.5 mg/m³, as F⁻

Zinc

ACGIH TLVs (as ZnO): 2 mg/m³ TWA; 10 mg/m³ STEL (both as respirable fractions)

OSHA PEL: 5 mg/m³ TWA (as ZnO fume)

9. Physical And Chemical Properties

Appearance

Odorless gray metal in form of flux-cored wire.

Chemical Type: Mixture

Physical State: Solid

Melting Point: ca. 790-840 °F ca. 420-450 °C

Specific Gravity: ca. 2.7

Solubility: partial (flux component)

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

10. Stability And Reactivity

Stability: stable

Hazardous Polymerization: will not occur

Conditions To Avoid (Stability)

None are reasonably foreseeable.

Incompatible Materials

Strong acids; chlorates, bromates, and iodates of alkali and alkali earth metals; halogens; chlorofluorocarbons; ammonium nitrate; chlorinated and brominated hydrocarbons; oxides of nitrogen; sulfur dioxide; organic and inorganic peroxides; carbon disulfide; hydrazine mononitrate; hydroxylamine; selenium; tellurium; lead azide; acetic anhydride; alkali and alkali earth metals; zirconium; platinum; bromine trifluoride.

Hazardous Decomposition Products

Heating to elevated temperatures may liberate fumes of the constituent metals or their oxides and/or gaseous and particulate fluorides.

11. Toxicological Information

Chronic/Carcinogenicity

The products contain no chemicals classified as potential or demonstrated carcinogens by IARC, NTP, or OSHA.

Mutagenicity (Genetic Effects)

Inorganic fluoride compounds have been demonstrated to induce mutagenic changes in mammalian cell in culture. The significance of these findings to human health risks is unknown.

Conditions Aggravated By Overexposure

Pre-existing pulmonary diseases (e.g., bronchitis, asthma) may be aggravated by inhalation overexposure. Long-term overexposure may aggravate diseases of the liver, kidneys, and skeletal and gastrointestinal systems.

Ingredient(s) - Toxicological Data

Aluminum

LD50: No data available LC50: No data available

Cesium aluminum fluoride

LD50: >2,000 mg/kg (oral/rat) LC50: No data available

Zinc

LD50: No data available LC50: No data available

12. Ecological Information

In their intended manner of use, these products should not be released 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

SARA Hazard Classes

Acute Health Hazard; Chronic Health Hazard

Ingredient(s) - U.S. Regulatory Information

Aluminum

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

Canadian Regulatory Information

WHMIS Class(es) and Division(s): D2B

Component(s) on Ingredients Disclosure List:

1. Aluminum, elemental (CASRN 7429-90-5)
2. Fluoride compounds, inorganic, n.o.s.

16. Other Information

Revision/Preparer Information

This MSDS Supersedes A Previous MSDS Dated: 09/23/2004

Disclaimer

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