Braze Core Aluminum-Zinc Alloys

Material Safety Data Sheet

1. Product And Company Identification

Suppliers

Lucas Milhaupt, Inc.
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Cudahy, WI 53110 USA
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Manufacturer

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Emergency Phone Number

Chemtrec: 800-424-9300

Issue Date: 01/12/2012
Product Name: Braze Core Aluminum-Zinc Alloys
MSDS Number: 503
Product Codes: 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

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, and 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: Not Applicable (N/Appl.)
Autoignition Point: N/Appl.
Flammability Class: N/Appl.
Lower Explosive Limit: N/Appl.
Upper Explosive Limit: N/Appl.

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, 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/#4) are 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 respirators, consult American National Standard Z88.2 (ANSI, New York, NY 10036 USA).

Ingredient(s) - Exposure Limits

Aluminum

ACGIH TLVs: 1 mg/m3 TWA (respirable fraction)

OSHA PELs: 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (resp. fraction)
Cesium aluminum fluoride
ACGIH TLVs: 2.5 mg/m3, as F- OSHA PEL: 2.5 mg/m3, as F-
Zinc
ACGIH TLVs: 5 mg/m3 TWA; 10 mg/m3 STEL (as ZnO fume)
OSHA PEL: 5 mg/m3 TWA (as ZnO fume)

9. Physical and Chemical Properties

Appearance: Gray metal in form of flux-cored wire
Odor: none
Chemical type: alloy
Physical state: solid
Melting point: >790F./420C.
Specific gravity: approx. 2.7
Solubility (H2O): partial (flux component)

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

10. Stability and Reactivity

Stability: stable
Hazardous Polymerization: will not occur

Conditions to Avoid

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

Carcinogenicity

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

Mutagenicity

Inorganic fluoride compounds have been demonstrated to induce mutagenic changes in mammalian cell in culture. The relevance 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

TSCA Information

All components of these products are listed in the EPA's TSCA inventory.

SARA Hazard Classes

Acute Health Hazard; Chronic Health Hazard

SARA Section 313 Notification

This product contains the following 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.
1. Aluminum (CASRN 7429-90-5)

Canadian Regulatory Information

All components of this product are listed on the Domestic Substances List (DSL) or the Nondomestic Substances List (NDSL).
WHMIS Class(es) and Division(s): D2B

Components on Ingredients Disclosure List:

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

16. Other Information

HMIS Ratings

Health - 1* 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 - 1 Flammability - 1 Reactivity - 0

Revision Information

This MSDS supersedes a previous MSDS dated 09/19/2007.

Disclaimer

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Lucas Milhaupt, Inc. Handy & Harman of Canada, Ltd.