

Material Safety Data Sheet

IMPORTANT NOTICE: This Material Safety Data Sheet (MSDS) is issued by LA-CO Industries, Inc. (LA-CO) in accordance with the U.S. OSHA Hazard Communication Standard, Canadian WHMIS Controlled Products Regulations, British CHIP2 regulation 6, Australian NMRCWHS and ANSI Z400.1-1993 guidelines. The information contained herein must not be altered, deleted or added to, with the exception of adding supplier/importer information in the space provided. LA-CO has no objection to its MSDS being copied if: a) the copy is made for safety-related purposes; and b) no alterations or amendments are made to the text or format of the MSDS, with the exception of adding supplier/importer information in the space provided. LA-CO does not guaranty the accuracy of any MSDS for our products which: a) is not prepared by LA-CO; b) is not authorized by LA-CO; c) is not in the format originally supplied by LA-CO; or d) has otherwise been amended or altered by a third party, with the exception of adding supplier/importer information in the space provided.

Section 1 Product and Company Identification

Product Name:

LA-CO ULTIMATE B813 Flux

Revision #: 1.0

Date Prepared: October 1, 2001

Date Revised: None

Manufacturer:

LA-CO INDUSTRIES, Inc. *Markal Co.*

1201 Pratt Blvd.

Elk Grove Village, IL, USA 60007-5746

Information Telephone: 847-956-7600

Emergency Telephone: Call CHEMTREC

USA 800-424-9300

International (Call Collect) 1-703-527-3887

Chemical Formula: Mixture

CAS No.: Not Applicable. Derivation: Not Applicable.

Synonyms: Not Applicable.

General Use: ASTM B813 compliant soldering flux.

Supplier/Importer:

Section 2 Composition/Information on Ingredients

Ingredient

Ammonium Chloride^{3,4,5,6}

CAS No.

12125-02-9

%

2 – 5

Hydrochloric Acid^{1,3,4,5,6}

7647-01-0

1 – 4

(For Section 2 footnotes: See Section 15)

Section 3 Hazards Identification

EMERGENCY OVERVIEW: CAUTION: Corrosive. Contains Hydrochloric Acid. Eye contact may cause intense irritation and injury. In case of eye or skin contact, flush with plenty of water and call a physician. If swallowed give one or two glasses of water or milk and call a physician. Skin contact may cause irritation. Continuous use in confined unventilated areas may result in sufficient inhalation of solder and flux fumes to cause lung damage and irritation of the respiratory tract. FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN

POTENTIAL HEALTH EFFECTS

Primary Exposure Routes: Eyes, Skin, Ingestion, Inhalation

Acute Effects

Eyes: Eye contact may cause intense irritation and injury.

Skin: Skin contact may cause irritation.

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Ingestion: Ingestion may result in irritation and injury characterized by pain in the mouth, throat and stomach, difficulty in swallowing, nausea and vomiting, followed by diarrhea and respiratory distress.

Inhalation: Continuous use in confined unventilated areas may result in sufficient inhalation of solder and flux fumes to cause lung damage and irritation of the respiratory tract.

Chronic Effects

Eyes: Not applicable.

Skin: Not applicable.

Ingestion: Not applicable.

Inhalation: Long-term inhalation of high concentrations of inorganic tin compounds can result in a condition known as "stannosis". Stannosis is a benign dust-induced lung condition. Usually this condition does not interfere with normal lung function. Due to the potential for severe respiratory tract irritation, workers with lung disease or limited respiratory capacity should have limited exposure to this material.

Carcinogenicity: Not Applicable.

Target Organ Effects: Not Applicable.

Medical Conditions Aggravated by Long-Term Exposure: Workers with lung disease or limited respiratory capacity should have limited exposure to this material.

Other Information: Not Applicable.

Section 4

First Aid

Eye Contact: Immediately flush eyes with water for at least 15 minutes while holding eye lids open. Have victim roll eyes for more thorough flushing. Get immediate medical attention.

Skin Contact: Remove contaminated clothing. Flush skin with water or wash with soap and water. Consult physician if irritation develops.

Ingestion: DO NOT INDUCE VOMITING. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON. Give victim water to dilute. Call physician or poison control center for Stannous Chloride.

Inhalation: Remove victim to fresh air. Give artificial respiration if needed. Get medical attention.

Other Information: All first aid measures pertain to Stannous Chloride exposure.

Section 5

Fire Fighting Measures

Flash Point (method): > 400°F (204°C)

Autoignition Temperature: Not determined.

LEL: Not Determined. **UEL:** Not Determined.

Flammability Classification: NFPA class IIIB

Extinguishing Media: Carbon dioxide, dry chemical.

Hazardous Combustion Products: Carbon monoxide, carbon dioxide, tin oxide(s), acrolein.

Unusual Fire or Explosion Hazards: Not applicable.

Fire-Fighting Instructions/Equipment: Keep personnel removed and upwind of any fire. Wear full fire-fighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

Section 6

Accidental Release Measures

Use recommended personal protective equipment (see Section 8).

Small Spill: Scrape or wipe up. Flush remainder with water.

Large Spill: Contain spill. Scrape up for reuse or soak up with absorbent material. Flush remainder with water.

Section 7

Handling and Storage

Handling Precautions: Use recommended personal protective equipment (see Section 8). Wash

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thoroughly after handling.

Storage Requirements: Store away from incompatible chemicals (see Sec. 10). Store in a cool, dry area.

Section 8 Exposure Controls/Personal Protection

Eye/Face Protection: Safety glasses. Where contact with the eyes is likely, use chemical goggles. Use a face shield as needed.

Skin/Hand Protection: Use impervious gloves. Use clean protective body-covering clothing as needed to minimize contact with clothing and skin.

Respiratory Protection: Use a NIOSH/MSHA approved air-purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use a positive pressure air supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respiratory protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.

Other Equipment: Eye wash and safety shower.

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to control sources of dust or fumes.

Administrative Controls: Users of this product must be properly trained and qualified in its use.

Other Information: No food or beverage should be consumed in the work area. Wash thoroughly before eating, drinking, or smoking.

Section 9 Physical and Chemical Properties

Appearance/Physical State: White paste.

Odor: Mild odor of dried fruit and cedar.

Odor Threshold (ppm): Not Determined.

Specific Gravity (H₂O = 1): Approx. 1.1

pH: 2 to 3

Melting Point: Not determined.

Boiling Point: Not determined.

Vapor Pressure (mm Hg at 20°C): Not determined.

Vapor Density (Air = 1): Not determined.

Evaporation Rate (n-BuAc=1): <<1

V.O.C. (U.S. Clean Air Act Section 111): 0%(w/w)

Flash Point (method): (see Section 5)

Solubility - Water: Soluble

- **Fat:** Partially soluble

Coefficient of Water/Oil Solubility: >1

Partition Coefficient (n-octanol/water): <1

Autoignition Temperature: (see Section 5)

Flammability Classification: (see Section 5)

Unusual Fire or Explosion Hazards: (see Section 5)

Oxidizing Properties: Not Applicable.

Other Information: None.

Note: The physical data represented above are typical values and should not be construed as a specification.

Section 10 Stability and Reactivity

Chemical Stability: Stable

Hazardous Polymerization: Will Not Occur

Conditions to Avoid: None known.

Chemicals to Avoid: Oxidizers, bases, amines, alkali metals.

Hazardous Decomposition Products (non-thermal): Not determined.

Section 11 Toxicological Information

Sensitization to Product: Not Applicable.

Irritancy of Product: Eye contact may cause intense irritation and injury. Skin contact may cause irritation. Ingestion may result in irritation. Continuous use in confined unventilated areas may result in sufficient inhalation of solder and flux fumes to cause lung damage and irritation of the respiratory tract.

Reproductive Toxicity: Not Applicable.
Teratogenicity: Not Applicable.
Mutagenicity: Not Applicable.

Further hazard information, if applicable, may be found in Section 3. Toxicological information regarding individual ingredients, if applicable, may be found in Section 2.

Section 12 Ecological Information

Mobility: Not Determined. **Ecotoxicity:** Not Determined.
Degradability: Not Determined. **Other Adverse Effects:** Not Determined.
Accumulation: Not Determined.

Section 13 Disposal Considerations

Dispose of in accordance with all applicable regulations.

The conditions of handling, storage, and use of this product are beyond our control and may be beyond our knowledge. For this and other reasons, LA-CO Industries, Inc. does not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

Section 14 Transport Information

D.O.T. (U.S.)
Proper Shipping Name: Not Regulated.
Hazard Class or Division: Not Regulated.
Hazard Label: Not Regulated.
I.D. Number: Not Regulated.
TDG (Canada): Not Regulated.

IATA: Not Regulated.
ICAO: Not Regulated.
IMO: Not Regulated.
Australian Code for the Transport of Dangerous Goods
Dangerous Goods Class and Subsidiary Risk: Not Determined.

Section 15 Regulatory Information

Footnotes for Section 2:

- 1 Subject to the reporting requirements of SARA Title III, Section 313.
- 2 Appears on the California Safe Drinking Water and Toxic Enforcement Act (Prop. 65) Substances List.
- 3 Appears on the Massachusetts Substances List.
- 4 Appears on the New Jersey Right-To-Know Hazardous Substances List.
- 5 Appears on the Pennsylvania Hazardous Substances List.
- 6 Appears on the Canadian WHMIS Ingredient Disclosure List.

U.S.A.

OSHA Hazard Status: This product is considered to be hazardous as defined by the U.S. OSHA HCS (29 CFR 1910.1200).

EPA SARA sec. 311/312 Hazard Categories: Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard.

Toxic Substances Control Act (TSCA): All ingredients contained in this product are listed on the U.S. EPA TSCA Chemical Substance Inventory.

HMIS® Rating: Health 3, Flammability 1, Reactivity 0

NFPA® (704) Rating: Health 3, Flammability 1, Reactivity 0

CANADA

WHMIS Status: This product is considered to be hazardous as defined by Canadian WHMIS Controlled Products Regulations.

Product Name: **LA-CO ULTIMATE B813 Flux**
Revision #: 1.0 **Date Prepared:** October 1, 2001 **Date Revised:** None

WHMIS Rating: D1-B

WHMIS Risk Phrases: CAUTION: Corrosive. Contains Hydrochloric Acid. Eye contact may cause intense irritation and injury. Skin contact may cause irritation. Continuous use in confined unventilated areas may result in sufficient inhalation of solder and flux fumes to cause lung damage and irritation of the respiratory tract.

WHMIS Precautionary Statements: Avoid skin and eye contact. FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN.

Domestic Substances List (DSL): All ingredients contained in this product are listed on the Canadian EPA (CEPA) Domestic Substances List (DSL).

E.U.

European Inventory of Existing Chemical Substances (EINECS): All ingredients contained in this product are listed on the European Inventory of Existing Chemical Substances (EINECS).

Categories of Danger (Labeling Information): Corrosive (C)

Risk (R) Phrases: Harmful if swallowed (R22), Causes burns (R34)

Safety (S) Phrases: Keep out of reach of children (S2), Keep away from food, drink and animal feedingstuffs (S13), Avoid contact with skin (S24), In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. (S26), After contact with skin, wash immediately with plenty of water. (S28), Wear suitable protective clothing, gloves and eye/face protection (S36/37/39), In case of accident or if you feel unwell, seek medical advice immediately (show the label and/or MSDS where possible) (S45).

AUSTRALIA

Worksafe Australia Status: This product is classified as hazardous according to criteria of Worksafe Australia.

HAZCHEM Code: Not determined.

Poisons Schedule Number: Not determined.

Further regulatory information regarding individual ingredients, if applicable, may be found in Section 2.

This product has been classified in accordance with the hazard criteria of the U.S. OSHA Hazard Communication Standard, the Canadian WHMIS Controlled Products Regulations, the British CHIP2 regulation 6, and the Australian NMRCWHS. This MSDS contains the information required by the above regulations and conforms to ANSI Z400.1-1993.

Section 16 Other Information

HMIS is a registered trademark of the National Paint and Coatings Association.

NFPA is a registered trademark of the National Fire Protection Association.

MSDS Prepared By: Director of Chemical Safety

The information contained herein is based on data available to us and is accurate and reliable to the best of our knowledge and belief. However, LA-CO Industries, Inc. makes no representations as to its completeness or accuracy. Information is supplied on condition that persons receiving such information will make their own determination as to its suitability for their purposes prior to use. In no event will LA-CO Industries, Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information contained herein.