

REC'D APR 24 2000

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Material Safety Data Sheet

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12/07/98

TEC Flux

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

FLX00001

Lucas-Milhaupt, Inc.
A Handy & Harman Company
5656 South Pennsylvania Avenue
Cudahy, WI 53110 USA

TELEPHONE NUMBER: (414)769-6000

EMERGENCY TELEPHONE NUMBER

Chemtrec (800)424-9300

PRODUCT NAME: TEC Flux

CHEMICAL FAMILY: Aqueous slurry of inorganic salts

This MSDS is applicable to products with the following product codes: 36-100, 36-200, 36-300, 36-301, and 36-304.

The formula of this product is a Trade Secret. The information in this MSDS represents the known health and safety hazards associated with this product and its components. The identity of specific components may be determined according to U.S. Department of Labor regulations [29CFR, Part 1910.1200(1)] or the applicable laws of other countries.

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT: Zinc chloride

CAS NUMBER: 7646-85-7

OSHA PEL: 1 mg/m3 TWA

ACGIH TLVs:

1 mg/m3 TWA; 2 mg/m3 STEL

INGREDIENT: Ammonium chloride

CAS NUMBER: 12125-02-9

No OSHA PEL(s)

ACGIH TLVs:

10 mg/m3 TWA; 20 mg/m3 STEL

INGREDIENT: Hydrogen chloride

CAS NUMBER: 7647-01-0

OSHA PEL: 5 ppm "Ceiling"

ACGIH TLV: 5 ppm "Ceiling"

INGREDIENT: Lithium chloride

CAS NUMBER: 7447-41-8

No OSHA PEL(s)

No ACGIH TLV(s)

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3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

EYES

Eye contact may cause severe irritation and/or corneal injury.

SKIN

Skin contact with this product may cause irritation and/or skin burns, particularly on abraded skin. Prolonged exposure may cause skin ulceration.

INGESTION

Some components of this product are potentially toxic if ingested, causing one or more of the following symptoms and effects: nausea, vomiting, cramps, diarrhea, abdominal pain, gastrointestinal irritation, convulsions, and kidney damage.

INHALATION

Inhalation of the components of this product 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 components and/or decomposition byproducts has been reported to cause one or more of the following symptoms and/or acute effects upon very high or prolonged exposure:

- » ACUTE EFFECTS: inhalation may irritate the nose, throat, and respiratory tract, and cause nausea, chest tightness, fever, and shortness of breath.
- » CHRONIC EFFECTS: Long-term inhalation exposure may cause ulceration of mucous membranes, pneumonitis, and pulmonary edema.

4. FIRST AID MEASURES

EYES

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 assistance if necessary.

INGESTION

Do not induce vomiting. If the subject is conscious, give plenty of milk or water. Seek immediate medical assistance.

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4. FIRST AID MEASURES - Continued

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.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS

This product is non-flammable and non-explosive. If it is present in a fire or explosion, potentially hazardous emissions may include zinc chloride, zinc oxide, lithium oxide, ammonium chloride, and hydrogen chloride.

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

Isolate spilled material and transfer to impervious containers. Avoid contact with skin, eyes, and mucous membranes. Wear appropriate protective equipment (e.g., gloves, clothing, eye protection) during cleanup.

7. HANDLING AND STORAGE

HANDLING AND STORAGE PRECAUTIONS

Store in a cool, dry place away from incompatible materials (see Section #6).

WORK/HYGIENIC PRACTICES

To minimize the possibility of ingestion, 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 and their decomposition byproducts to within their respective OSHA PELs or other applicable standards.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued

EYE/FACE PROTECTION

Wear eye protection adequate to prevent eye contact with the product and eye injury from the hazards of soldering. 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 from the hazards of soldering and/or contact with the product. Avoid flammable fabrics.

RESPIRATORY PROTECTION

If an exposure level exceeds an OSHA PEL(s) or other applicable standard, use a NIOSH-approved respirator having a configuration (class, 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).

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Red liquid with a mild odor

BASIC PHYSICAL PROPERTIES

BOILING POINT: ca. 229 F ca. 109 C
SPECIFIC GRAVITY: ca. 1.55
SOLUBILITY (H₂O): soluble
EVAPORATION RATE: <1 (butyl acetate = 1)
pH: <7

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID (STABILITY)

Stable at room temperature. Some components of the product will decompose and/or offgas at elevated temperatures.

INCOMPATIBLE MATERIALS

Strong bases; potassium plus aluminum bromide; potassium chlorate; ammonium nitrate; iodine pentafluoride; bromine trifluoride.

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10. STABILITY AND REACTIVITY - Continued
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HAZARDOUS DECOMPOSITION PRODUCTS

Zinc chloride, zinc oxide, ammonium chloride, lithium chloride, and/or hydrogen chloride. Hazardous polymerization will not occur.
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11. TOXICOLOGICAL INFORMATION
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MISCELLANEOUS TOXICOLOGICAL INFORMATION

Carcinogenicity: None of the components of this product are classified as potential or demonstrated human carcinogens by IARC, NTP, or OSHA.

Genetic/Reproductive Effects: In experimental animal studies, ingestion or injection of lithium chloride has been found to cause various reproductive problems, including reduced litter size and fetal death in females, adverse effects on sperm in males, and developmental abnormalities in offspring. These are not plausible routes of potential human exposure in occupational settings, and the relevance of these findings is not known.
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12. ECOLOGICAL INFORMATION
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NO DATA GIVEN
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13. DISPOSAL CONSIDERATIONS
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Dispose of unused or unusable product in accordance with applicable Federal, State/Provincial, and local regulations.
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14. TRANSPORT INFORMATION
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PROPER SHIPPING NAME: Corrosive liquid, n.o.s. (zinc chloride solution)

HAZARD CLASS: 8 (Packing Group II)

DOT IDENTIFICATION NUMBER: UN1760

DOT SHIPPING LABEL: CORROSIVE

PACKAGING EXCEPTIONS: 49CFR Part 173.154

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15. REGULATORY INFORMATION

SARA TITLE III NOTIFICATIONS AND INFORMATION

SARA TITLE III - HAZARD CLASSES: Acute Health Hazard
Chronic Health Hazard

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372:

CAS NUMBER	INGREDIENT NAME	PERCENT BY WEIGHT
7647-01-0	Hydrogen chloride	Unknown

This information must be included on all MSDSs that are copied and distributed for this material.

16. OTHER INFORMATION

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).