

**GC Electronics**  
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**Product Name: Soldering Flux**  
MSDS Number: 142  
Revision Date: 3-9-2012  
Supersedes Date: 9-16-09

## MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Type: Mild Chloride  
Product Name: **Solder Flux**  
Part Number(s): **10-200**

**Emergency Contact: Chemtrec**  
**Phone (24 hours): (800) 424-9300**

### Section 1 - Identification of Product

#### HMIS RATINGS

Health 2  
Flammability 0  
Reactivity 0

#### NFPA CLASSIFICATION

Health 2  
Flammability 0  
Reactivity 0

Least 0  
Slight 1  
Moderate 2  
High 3  
Extreme 4  
Gloves, Safety Glasses B

### Section 2 - Hazardous Ingredients

| Hazardous Component                              | CAS #      | Wght | OSHA TWA | ACGIH TWA | Other limits |
|--|------------|------|----------|-----------|--------------|
| + Zinc Chloride                                  | 7646-85-7  | 10%  | 1mg/M3   | 1mgM3     | NE           |
| Ammonium Chloride<br>(as Zinc Ammonium Chloride) | 12125-02-9 |      | 10mg/M3  | 10 mg/M3  | NE           |

Only those ingredients listed in this section have been determined to be hazardous as defined in 29CFR 1910.1200.

+ denotes a chemical regulated as toxic by the Environmental Protection Agency (EPA) as outlined in 40 CFR Part 372 (section 313)

### Section 3 - Physical Data

Boiling Point: 230°F  
Evaporation Rate (butyl acetate=1): <1  
Vapor Density: NE  
Vapor Pressure (mm Hg): NE  
Solubility in water: 100  
Specific Gravity: 1.10  
Melting Point: NE  
Appearance and odor: Clear to slight yellow liquid, odorless

#### Section 4 - Fire & Explosion Hazard Data

|                                     |   |
|-------------------------------------|---|
| Flammable limits                    | LEL N/A UEL N/A   |
| Flash Point:                        | Nonflammable  |
| Extinguishing media:                | Any media that will extinguish a fire may be used.        |
| Unusual Fire and Explosion Hazards: | May release hydrochloric acid, zinc chloride, zinc oxide. |
| Special fire fighting Procedures:   | Use self contained breathing apparatus                    |

#### Section 5 - Health Hazard Data

|  |   |
|--|---|
| Routes of entry:                           | Inhalation Yes Skin No Ingestion Yes  |
| Health Hazards (acute and chronic)         | Contact with material or fumes may cause skin, eye and respiratory tract irritation or burns.   |
| Severe inhalation:                         | Can cause pulmonary edema, which may not manifest for several hours after exposure.   |
| Ingestion:                                 | May result in irritation or burning of the digestive tract.   |
| Gross Inhalation or Ingestion:             | Can result in death. LD50 (ZnCl <sub>2</sub> ) (rat) = 350 mg / kg. May be mutagenic in lab animals. May cause sensitization.                               |
| Chronic exposures:                         | Can result in permanent liver, kidney and respiratory system effects. Studies show that health risks vary by individual. Minimize exposure as a precaution. |
| Carcinogenicity:                           | Not determined NPT No IARC Monographs No  |
| Signs and symptoms of exposure:            |   |
| Inhalation:                                | Nose & throat irritation, headache, dizziness, difficulty breathing, coughing.  |
| Ingestion:                                 | Nausea, vomiting, cramps.   |
| Eye:                                       | Redness, burning, tearing, blurred vision.  |
| Skin:                                      | Redness, burning, rash, dryness.  |
| Medical Conditions Aggravated by Exposure: | Skin, kidney and respiratory conditions.  |
| Emergency First Aid Procedures Skin:       | Flush with water immediately – Seek medical attention if necessary  |

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Eyes: Flush with water for 15 minutes- Seek medical attention.  
Ingestion: DO NOT induce vomiting, drink large amounts of water – Seek medical attention. Never give anything by mouth to an unconscious person  
Inhalation: Remove to fresh air. Support respiration if required- Seek medical attention.

### Section 6 - Reactivity Data

Conditions to avoid: None  
Stability: Stable  
Incompatibility (Materials to avoid): Oxidizers, strong acids & bases, sulfides.  
Hazardous Decomposition or Byproducts (incomplete Combustion): Hydrochloric acid, zinc oxide, ammonia, zinc chloride  
Hazardous Polymerization: Will not occur  
Conditions to avoid: None

### Section 7 - Spill or Leak Procedures

Steps to be taken if material is released or spilled: Flush into a chemical sewer or soak up with a suitable absorbent.  
Waste Disposal Method: Dispose of in accordance with all local state and federal regulations

### Section 8 - Special Protection Information

Respiratory Protection (type): Acid type respirator for fumes and mist.  
Ventilation: Local Exhaust preferred Special NE  
Mechanical Ok Other NE  
Protective Gloves: Plastic or rubber  
Eye Protection: Goggles or face shield  
Other Protective Clothing or Equipment: As required to avoid contact.  
Work /Hygienic Practices: Wash after use: Follow good industrial hygienic practices.

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**Section 9 – Special Precautions**

Other Precautions: Avoid skin & eye contact, inhalation & ingestion of fumes and material.  
Wash contaminated clothing before reuse. Keep away from children.  
Do not reuse container.

**Section 10 - Regulatory Information**

DOT Classification: Non-Hazardous  
Hazard Class: Not regulated  
UN or NA ID#: None  
Labeling: None  
NFPA Classification: (NFPA 325M, 8<sup>th</sup> edition)  
NE not established NA = not applicable

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**Disclaimer**

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