MATERIAL SAFETY DATA SHEET

SECTION 1
PRODUCT AND COMPANY IDENTIFICATION

Trade Name: OATEY #11 LIQUID FLUX
Product No.: 30106
Product Use: Flux with strong cleaning agent.
Formula: See Section 2
Synonyms: Flux for Soldering
Firm Name & Mailing Address: OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. http://www.oatey.com
Oatey Phone Number: (216) 267-7100 or (800) 321-9532
Emergency Phone Numbers: For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared By: Technical Department
Preparation Date: May 1, 2009

SECTION 2
COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>% wt/wt</th>
<th>CAS NUMBER</th>
<th>ACGIH TLV TWA</th>
<th>OSHA PEL TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>40 - 60%</td>
<td>7732-18-5</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Zinc Chloride</td>
<td>30 - 40%</td>
<td>7646-85-7</td>
<td>1 mg/m3(fume)</td>
<td>1 mg/m3(fume)</td>
</tr>
<tr>
<td>Hydrochloric Acid</td>
<td>10 - 20%</td>
<td>7647-01-0</td>
<td>2 ppm Ceiling</td>
<td>5 ppm Ceiling</td>
</tr>
<tr>
<td>Ammonium Chloride</td>
<td>4 - 10%</td>
<td>12125-02-9</td>
<td>10 mg/m3 (fume)</td>
<td>None</td>
</tr>
<tr>
<td>Tergitol</td>
<td>&lt; 1</td>
<td>Unknown</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

SECTION 3
HAZARDS IDENTIFICATION

Emergency Overview:
Yellow paste with a slight odor. Cause burns to the eye and skin. Inhalation of fumes may cause respiratory irritation, metal fume fever, chills, nausea and vomiting. Swallowing may cause burns to the mouth or throat, vomiting, diarrhea and kidney or liver disorders. Harmful or fatal if swallowed. Symptoms may be delayed.

OSHA Hazard Classification: Corrosive, target organ effects

SECTION 4
FIRST AID MEASURES

CALL 1-877-740-5015 or 1-303-623-5716 COLLECT

Skin: Remove contaminated clothing. Wash thoroughly with soap and water. Call a physician or poison control center if irritation persists.

Eyes: If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Keep victim quiet and warm. Call a poison control center or physician immediately.

Ingestion: DO NOT INDUCE VOMITING. Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.
SECTION 5  FIRE FIGHTING MEASURES
Flashpoint / Method: Not applicable
Flammability: LEL = Not applicable, UEL = Not applicable
Extinguishing Material will not burn.
Media:
Special Fire Fighting
Procedure: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.
Unusual Fire and Explosion Hazards: None known.
Decomposition Products: Hazardous Hydrogen chloride, zinc fumes, ammonia, nitrogen oxides.

SECTION 6  ACCIDENTAL RELEASE MEASURES
Spill or Leak Procedures: Ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment. Take up spill with sand, earth or other absorbent material and place into a clean, dry leak-proof container.

SECTION 7  HANDLING AND STORAGE
Handling: Do not get in eyes. Do not get on skin or clothing. Do not take internally. Avoid breathing vapors or fumes. Use only with adequate ventilation. Wash thoroughly after handling. Keep container closed when not in use. Handle with care. Keep out of reach of children.
Storage: Store in original, labeled container.
Other: Containers, even empty will retain residue and may be harmful.

SECTION 8  EXPOSURE CONTROLS/PERSOANAL PROTECTION
Ventilation: Good general ventilation (equivalent to outdoors) should be adequate for normal use. For operations where the TLV may be exceeded, mechanical ventilation such as local exhaust may be needed to maintain exposure levels below applicable limits.
Respiratory Protection: For operations where the TLV may be exceeded, a NIOSH approved particulate respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.
Skin Protection: Wear rubber gloves.
Eye Protection: Safety glasses with sideshields or safety goggles.
Other: Eye wash and safety shower should be available.
SECTION 9   PHYSICAL AND CHEMICAL PROPERTIES
Boiling Point: 208 Degrees F (97 Degrees C)
Melting Point: Not determined
Vapor Pressure: Not determined
Vapor Density: (Air = 1) Greater than 1
Volatile Components: 60 - 65%
Solubility In Water: Soluble
pH: 2 to 3
Specific Gravity: 1.14 @ 20 Degrees C
Evaporation Rate: Not determined
Appearance: Yellow Liquid
Odor: Very little odor
Will Dissolve In: Water
Material Is: Liquid

SECTION 10   STABILITY AND REACTIVITY
Stability: Stable.
Conditions To Avoid: None.
Hazardous Decomposition Products:
Incompatibility/ Strong oxidizing agents, potassium, cyanides and sulfides.
Materials To Avoid: Hazardous Will not occur.
Polymerization:

SECTION 11   TOXICOLOGICAL INFORMATION
Inhalation: Fumes from heated product may be corrosive to mucous membranes and the respiratory system. Fumes may cause burning sensation, coughing, wheezing, shortness of breath, cyanosis, fever, chills, muscular pain, anemia, metallic taste in the mouth, headache, nausea, vomiting, sweating, diarrhea and pulmonary edema. Repeated inhalation of fumes may cause occupational asthma. Symptoms may be delayed.
Skin: Contact will cause burns.
Eye: Vapors or fumes may cause redness, pain, blurred vision and corneal damage. Direct contact will cause burns and eye damage with possible blindness. Symptoms may be delayed.
Ingestion: May cause burns to the mouth and throat, nausea, vomiting or diarrhea. Death may occur from strictures of the esophagus and pylorus. Symptoms may be delayed.
Toxicity Data: Hydrochloric acid: Inhalation rat LC50: 3,124 ppm
Zinc Chloride: Oral rat LD50: 350 mg/kg
Ammonium Chloride: Oral rat LD50: 1,650 mg/kg
Sensitization: None of the components are known to cause sensitization.
Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.
Mutagenicity: None of the components have been found to be mutagenic.
Reproductive Toxicity: None of the components are known to cause adverse reproductive effects.
Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.
SECTION 12  ECOLOGICAL INFORMATION
No data available.

SECTION 13  DISPOSAL CONSIDERATIONS
Waste Disposal: Dispose of in accordance with federal, state, and local regulations. It is the responsibility of the end-user to determine at the time of disposal of the product.

RCRA Hazardous Waste Number: None
EPA Hazardous Waste ID Number: D002
EPA Hazard Waste Class: Corrosive

SECTION 14  TRANSPORT INFORMATION
DOT
Proper Shipping Name: Corrosive Liquid, nos 8
Hazard Class/Packing Group: 8, PG III
UN/NA Number: UN1760
Hazard Labels: Corrosive

IMDG
Proper Shipping Name: Corrosive Liquid, nos 8
Hazard Class/Packing Group: 8, PG III
UN Number: UN1760
Label: Corrosive
2004 North American Emergency Response Guidebook Number: 154

SECTION 15  REGULATORY INFORMATION
Hazard Category for Section 311/312: Acute Health, Chronic Health
Section 302 Extremely Hazardous Substances (TFQ): This product does not contain chemicals regulated under SARA Section 302.
Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS #</th>
<th>% wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc Chloride</td>
<td>7646-85-7</td>
<td>30-35%</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>7647-01-0</td>
<td>12-15%</td>
</tr>
</tbody>
</table>

CERCLA 103 Reportable Quantity:
Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Zinc Chloride (35% max) of 1,000 lbs, is 2,857 lbs.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS #</th>
<th>RQ, lbs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc Chloride</td>
<td>7646-85-7</td>
<td>1,000</td>
</tr>
<tr>
<td>Ammonium Chloride</td>
<td>12125-02-6</td>
<td>5,000</td>
</tr>
</tbody>
</table>

Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product does not contain chemicals regulated under California Proposition 65.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

Canadian WHMIS Classification: Class E; Class D, Division 2, Subdivision B
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.
SECTION 16 OTHER INFORMATION

NFPA and HMIS:
NFPA Hazard Signal: Health: 3  Flammability: 0  Reactivity: 0  Special: None
HMIS Hazard Signal: Health: 3*  Flammability: 0  Reactivity: 0  PPE: B

Disclaimer:
The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.