SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Address:
8125 Cobb Center Drive
Kennesaw, GA 30152

Product Information: 800-TECH-401
Emergency: (Chemetrec) 800-424-9300
Customer Service: 800-645-5244
Revision Date: February 10, 2007

Product Identification

**FLUX-OFF® LEAD-FREE (liquid)**

Product Code: ES197, ES5597

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Wt. % Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isohexane, a mixture of:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-methylpentane</td>
<td>107-83-5</td>
<td>10.0-25.0</td>
</tr>
<tr>
<td>3-methylpentane</td>
<td>96-14-0</td>
<td>1.0-20.0</td>
</tr>
<tr>
<td>2,3-Dimethylbutane</td>
<td>79-29-8</td>
<td>1.0-20.0</td>
</tr>
<tr>
<td>2,2-Dimethylbutane</td>
<td>75-83-2</td>
<td>1.0-20.0</td>
</tr>
<tr>
<td>n-hexane</td>
<td>110-54-3</td>
<td>0.1-2.0</td>
</tr>
<tr>
<td>Acetone</td>
<td></td>
<td>20.0-50.0</td>
</tr>
<tr>
<td>Methanol</td>
<td>67-64-1</td>
<td>1.0-2.0</td>
</tr>
</tbody>
</table>

SECTION 3: HAZARD IDENTIFICATION

Emergency Overview: Clear, colorless liquid with mild hydrocarbon solvent. This product is extremely flammable. Liquid may irritate eyes and skin under repeated or prolonged exposure. Breathing high concentrations of product may produce drowsiness and a headache.

Potential Health Effects:

**Eyes:** Liquid, aerosols and vapors of this product may be irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation.

**Skin:** Contact causes skin irritation.

**Ingestion:** Harmful if swallowed. Irritating to the mouth, throat and stomach. May cause vomiting. **Inhalation:** Harmful if inhaled. High concentrations in immediate area can displace oxygen and cause dizziness, unconsciousness and even death with longer exposure. Keep people away from such vapors without self-contained breathing apparatus. Pre-Existing Medical Conditions Aggravated by Exposure: Heart, lung, skin, eye.

SECTION 4: FIRST AID MEASURES

**Eyes:** Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Have eyes examined and tested by medical personnel if irritation develops or persists.

**Skin:** Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists. Wash clothing separately before reuse.

**Ingestion:** If swallowed, do not induce vomiting. Keep head below knees to minimize chance of aspirating material into the lungs. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

**Flash Point:** -20 F (-29C) (isohexane) **LEL/UEL:** 1.2/7.7 (% by volume in air)

**Extinguishing Media:** Use alcohol foam, carbon dioxide or water spray when fighting fires involving this material. **Fire Fighting Instructions:** As in any fire, wear self-contained breathing apparatus (pressure demand, MSHA/NIOSH approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

**Large Spills:** Shut off leak if possible and safe to do so. Wear self-contained breathing apparatus and appropriate personal protective equipment. Absorb spill with inert material (i.e. dry sand or earth), then place in a chemical waste container for proper disposal. Do not flush to sewer. Avoid runoff into storm sewers and ditches that lead to waterways. **Small Spills:** Absorb spill with inert material (i.e. dry sand or earth), then place in a chemical waste container for proper disposal.

SECTION 7: HANDLING AND STORAGE

Avoid prolonged or repeated contact with skin, eyes or clothing. Wear adequate ventilation. Avoid breathing product vapor. Do not reuse this container. Store in a cool dry place, away from heat, sparks or flames. Ground and bond containers when transferring liquid. Keep container tightly closed when not in use. Do not store in direct sunlight.

KEEP OUT OF REACH OF CHILDREN.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Guidelines:**

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>ACGIH STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-methylpentane</td>
<td>500 ppm</td>
<td>NA</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>3-methylpentane</td>
<td>500 ppm</td>
<td>NA</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>2,3-Dimethylbutane</td>
<td>500 ppm</td>
<td>NA</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>2,2-Dimethylbutane</td>
<td>500 ppm</td>
<td>NA</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>n-Hexane</td>
<td>50 ppm</td>
<td>500 ppm</td>
<td>NA</td>
</tr>
<tr>
<td>Acetone</td>
<td>500 ppm</td>
<td>1000 ppm</td>
<td>750 ppm</td>
</tr>
<tr>
<td>Methanol</td>
<td>200 ppm</td>
<td>200 ppm</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Work/Hygienic Practices:** Good general ventilation should be sufficient to control airborne levels. Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. If vapor concentration exceeds TLV, use NIOSH approved organic vapor cartridge respirator. Wear safety glasses with side shields (or goggles) and rubber or other chemically resistant gloves when handling this material.
NFPA and HMIS Codes:  

**NFPA**  
Health 1  
Flammability 3  
Reactivity 1  
Personal Protection -  

**HMIS**  
Health 1  
Flammability 3  
Reactivity 1  

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES  
Physical State: Clear, colorless liquid  
Odor: Mild hydrocarbon solvent  

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>NA</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>214 mm Hg @ 68 F (liquid)</td>
</tr>
<tr>
<td>Vapor Density, (1)</td>
<td>(Air 1)</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.71 @ 68F</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>&gt;1 (Butyl acetate=1)</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Negligible</td>
</tr>
<tr>
<td>Percent Volatile</td>
<td>100</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>122 F (50C)</td>
</tr>
</tbody>
</table>

SECTION 10: STABILITY AND REACTIVITY  
Stability: This product is stable.  
Incompatibility: Do not mix powdered alkali and alkaline earth metals or strong oxidizing agents.  
Products of Decomposition: Thermal decomposition may release carbon monoxide, carbon dioxide and incompletely burned hydrocarbons.  
Hazardous Polymerization: Will not occur.  

SECTION 11: TOXICOLOGICAL INFORMATION  
Inhalation:  
acetic acid LC50 rats 50,100 mg/m3/8hr acetone LD50 rats 5,800 mg/kg  
methanol LC50 rats 64,000ppm/4hr methanol LD50 rats 5,628 mg/kg  

Ingestion:  
acetone Rabbit MLD 20 mg/rabbit SEV  
methanol Rabbit MLD 40 mg/rabbit MOD  

Skin:  

<table>
<thead>
<tr>
<th>Compound</th>
<th>Route</th>
<th>Species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>acetone</td>
<td>Skin</td>
<td>Rabbit</td>
<td>MLD</td>
</tr>
<tr>
<td>methanol</td>
<td>Skin</td>
<td>Rabbit</td>
<td>MLD</td>
</tr>
</tbody>
</table>

Cancer Information: No ingredients listed as human carcinogens by NTP or IARC  
Reproductive effects: none  
Teratogenic effects: none  
Mutagenic effects: none  

SECTION 12: ECOLOGICAL INFORMATION  
Avoid runoff into storm sewers and ditches which lead to waterways. Water runoff can cause environmental damage.  

SECTION 13: DISPOSAL CONSIDERATIONS  
Dispose of in accordance with all federal, state and local regulations.  

SECTION 14: TRANSPORTATION INFORMATION  
Proper Shipping Name: Flammable Liquid n.o.s.  
UN Number: 1993  
Class: 3  
Risk Group: NA  
Pkg.: NA  
Hazard Label: Flammable  
Pkg. Instr.: 305/  
Max. Quantity: 5L/  

SECTION 15: REGULATORY INFORMATION  
Proper Shipping Name: Flammable Liquid n.o.s.  
UN Number: 1993  
Class: 3  
Risk Group: NA  
Pkg.: NA  
Hazard Label: If Flammable  
Pkg. Instr.:  
Max. Quantity: 60 L  

SECTION 16: OTHER INFORMATION  
Normal ventilation for standard manufacturing practices is usually adequate. Local exhaust should be used when large amounts are released.  

To the best of our knowledge, the information contained herein is accurate. However, all materials may present unknown hazards and should be used with caution. In particular, improper use of our products and their inappropriate combination with other products and substances may produce harmful results which cannot be anticipated. Final determination of the suitability of any material is the sole responsibility of the user. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist.