SECTION 1: CHEMICAL PRODUCT AND COMPANY INFORMATION

Company Address:
8125 Cobb Center Drive
Kennesaw, GA  30152

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

Product Identification

CIRCUITWORKS® LEAD-FREE FLUX DISPENSING PEN

Product Code: CW8400

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Product Ingredient Information      CAS#             Wt. % Range
Isopropanol 67-63-0      70-90
Rosin                                    8050-09-7                  10-20
Tripropylene glycol butyl ether     55934-93-5      1-5.0
Mineral Spirits         64742-88-7      1-5.0

SECTION 3: HAZARD IDENTIFICATION

Emergency Overview: Clear, yellow liquid with strong alcohol odor. This product is flammable. Liquid will irritate eyes and skin under repeated or prolonged exposure. Breathing high concentrations of product vapor may produce drowsiness and a headache.

Potential Health Effects:
Eyes: Liquid and vapors of this product are irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation. Vapors released from the soldering process may cause eye irritation.
Skin: Prolonged contact may cause skin irritation and/or sensitization.
Ingestion: Harmful if swallowed. Irritating to mouth, throat and stomach. May cause vomiting.
Inhalation: Harmful if inhaled. High concentrations of vapors in immediate area can displace oxygen and can cause dizziness and unconsciousness, with longer exposure. Vapors from soldering processes may cause irritation of the nose and throat. Respiratory sensitization may result from inhalation of rosin fumes.
Pre-Existing Medical Conditions Aggravated by Exposure: Heart, lung, skin, eye.

SECTION 4: FIRST AID MEASURES

Eyes: If eye irritation occurs 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: Swallowing less than an ounce will not cause significant harm. For larger amounts, do not induce vomiting, but get immediate medical attention.
Inhalation: If breathing is difficult, give oxygen and get immediate medical attention.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: 62°F (17°C) (TCC)  LEL/UEL: Not established (% 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, OSHA/NIOSH approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Spills: Absorb spill with inert material (e.g. 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 which lead to waterways.

SECTION 7: HANDLING AND STORAGE

Avoid prolonged or repeated contact with eyes, skin, and clothing. Wash hands before eating. Use with adequate ventilation. Avoid breathing product vapor or mist. Do not use this container. Store in a cool dry place away from heat, sparks and flame. Keep container 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>Isopropanol</td>
<td>200 ppm</td>
<td>400 ppm</td>
<td>400 ppm</td>
</tr>
<tr>
<td>Tripropylene glycol butyl ether</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Mineral Spirits</td>
<td>200 ppm</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

Work/Hygienic Practices: Ventilation is recommended to control airborne levels of soldering process vapors. Wear safety glasses with side shields (or goggles) and chemical resistant gloves when handling this material.

NFPA and HMIS Codes:

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>0</td>
<td>- B</td>
</tr>
</tbody>
</table>

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Yellow liquid
Odor: Alcohol
pH: NA
Vapor Pressure: 33 mm Hg @ 68°F
Vapor Density: 2.0
(Air =1)
Boiling Point: 180°F (82°C)

Solubility in Water: Soluble
Specific Gravity: (Water =1) 0.81
Evaporation Rate: > 1
(Butyl acetate =1)
Viscosity: 1 (Approx.)
(Water = 1)
Percent Volatile: < 95 %
SECTION 10: STABILITY AND REACTIVITY
Stability: This product is stable.
Conditions to Avoid: Do not use near open flames, red hot surfaces or other sources of ignition.
Incompatibility: Do not mix with strong acids 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
Toxicological Information
Inhalation:
Isopropanol LC50/rats 12,000 ppm/8hr

Ingestion:
Isopropanol LD50 rats 5,045 mg/kg

Skin:
Isopropanol Rabbit LD50 12,800 mg/kg

Eye:
Isopropanol rabbit MLD-MOD

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
Environmental Impact Information
Avoid runoff into storm sewers and ditches which lead to waterways. Water runoff can cause environmental damage.

REPORTING
US regulations require reporting spills of this material that could reach any surface waters. The toll free number for the US Coast Guard National Response Center is: 1-800-424-8802

SECTION 13: DISPOSAL CONSIDERATIONS
Dispose of in accordance with all federal, state and local regulations. Water runoff can cause environmental damage.

SECTION 14: TRANSPORTATION INFORMATION

<table>
<thead>
<tr>
<th>Proper Shipping Name</th>
<th>UN Number</th>
<th>Class</th>
<th>Sub. Risk</th>
<th>Pkg. Group</th>
<th>Hazard Label</th>
<th>Pkg. Instr./Auth</th>
<th>Max. Quantity</th>
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</thead>
<tbody>
<tr>
<td>Air: Flammable liquid n.o.s. (Isopropanol)</td>
<td>UN 1993</td>
<td>3</td>
<td>NA</td>
<td>II</td>
<td>Flammable liquid</td>
<td>305</td>
<td>1L</td>
</tr>
<tr>
<td>Ground: Consumer Commodity ORM-D</td>
<td>NA</td>
<td>NA</td>
<td>--</td>
<td>NA</td>
<td>ORM-D</td>
<td>173,150</td>
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SECTION 15: REGULATORY INFORMATION
SECTION 313 SUPPLIER NOTIFICATION
This product contains no toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372).
This information should be included on all MSDSs copied and distributed for this material.

TOXIC SUBSTANCES CONTROL ACT (TSCA)
All ingredients of this product are listed on the TSCA Inventory.

WHMIS: Class B2; Class D2B
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16: OTHER INFORMATION
Product should be used only with adequate ventilation. Mechanical ventilation is recommended on all soldering stations. If such ventilation is not available, personnel should wear NIOSH approved organic vapor respirators equipped with particulate dust filters specified for use during welding or soldering.

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.