

GC Electronics
 1801 Morgan Street
 Rockford, IL 61102
 Phone: (815) 968-9661
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 www.gcelectronics.com

Product Name: Etch Resist Lacquer

MSDS Number: 131
 Revision Date: 2/5/10
 Supersedes Date: 4/17/07

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Product Type: **PC Board Chemical**
 Product Name: **Etch Resist Lacquer**
 Part Number(s): **22-244**

Emergency Contact: Chemtrec
Phone: (800) 424-9300

Section 1 – Identification of Product

Product Name: Etch Resist Lacquer
 Product Class: Alkyd-Cellulose Nitrate Lacquer

| HMIS RATINGS | | | | | |
|--------------|-----|------------------------|--|---|--|
| | | Least | | 0 | |
| | | Slight | | 1 | |
| Health | 2 * | Moderate | | 2 | |
| Flammability | 3 | High | | 3 | |
| Reactivity | 0 | Extreme | | 4 | |
| | | Gloves, Safety Glasses | | B | |

Section 2 – Hazardous Ingredients

| Ingredient | CAS# | % by Weight | ACGIH TLV | OSHA PEL | ACGIH/ | Units | V.P mm |
|-----------------------------------|------------|-------------|-----------|----------|-----------|------------|--------|
| | | | | | OSHA STEL | | |
| Lt. Aliphatic Hydrocarbon Solvent | 64742-89-8 | 12 | 100 | 100 | | ppm | 53.00 |
| V.M. & P Naphtha | 64742-89-8 | 8 | 300 | 300 | 400 | ppm | 12.00 |
| Ethylbenzene* | 100-41-4 | 0.7 | 100 | 100 | 125 | ppm | 7.1 |
| Toluene* | 108-88-3 | 5 | 20 | 100 | 150 | ppm (skin) | 22.00 |
| Xylene* | 1330-20-7 | 4 | 100 | 100 | 150 | ppm | 5.90 |
| 2-Propanol | 67-63-0 | 4 | 200 | 400 | 400 | ppm | 33.00 |
| 2-Methyl-1 Propanol | 78-83-1 | 8 | 50 | 50 | | ppm | 8.70 |
| 2-Butoxyethanol | 111-76-2 | 3 | 20 | 25 | | ppm (skin) | 0.88 |
| Methyl Ethyl Ketone* | 78-93-3 | 8 | 200 | 200 | 300 | ppm | 70.00 |
| Isobutyl Acetate | 110-19-0 | 13 | 150 | 150 | | ppm | 12.50 |
| Carbon Black | 1333-86-4 | 2 | 3.5 | 3.5 | | mg/m3 | 0.00 |

*Appears in Section 313 of the Toxic Chemical List of Title III of the Superfund Amendment and Reauthorization Act (SARA) of 1986 and 40 CFR 372.

Warning: This product contains Toluene known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 3 – Physical Data

| | | |
|----------------------|-------------------|--|
| Product Weight: | 7.66 lb/gal | 915 g/l |
| Specific Gravity: | 0.92 | |
| Boiling Point: | 174°F - 343°F | 78 - 172°C |
| Volatile Volume | 74% | |
| VOC (Theoretical) | 4.97 lb/gal | 595 g/l (less water and federally exempt solvents) |
| | 4.97 lb/gal | 595 g/l (emitted VOC) |
| Evaporation Rate: | Slower than Ether | |
| Vapor Density: | Heavier than Air | |
| Melting Point: | N.A. | |
| Solubility in Water: | N.A. | |

Section 4 – Fire and Explosion Hazard Data

| | | | |
|-----------------------------------|--|---------|----------|
| Flash Point: | 22°F pmcc | LEL 0.9 | UEL 12.7 |
| Flammability Classification: | Red Label – Flammable, Flash below 100°F (38°C) | | |
| Extinguishing Media: | Carbon dioxide, dry chemical, foam | | |
| Unusual Fire & Explosion Hazards: | Keep containers tightly closed. Isolate from heat, electrical equipment, sparks, and open flame. Closed containers may explode when exposed to extreme heat. Application to hot surfaces requires special precautions. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention. | | |
| Special Fire Fighting Procedures: | Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible auto-ignition or explosion when exposed to extreme heat. | | |

Section 5 – Health Hazard Data

| | |
|---------------------|---|
| Routes of Exposure: | Exposure may be by inhalation of vapor or spray mist and/or skin or eye contact with the products, vapor or spray mist, depending on conditions of use. Alcohols and acetates can be absorbed through the skin. Follow recommendations for proper use, ventilation, and personal protective equipment to minimize exposure. |
|---------------------|---|

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Acute Health Hazards

Effects of Overexposure: Irritation of eyes, skin and respiratory system. May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death. Prolonged exposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary, blood-forming, cardiovascular and reproductive systems.

Signs & Symptoms of Overexposure: Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists. Redness and itching or burning sensation may indicate eye or excessive skin exposure.

Medical Conditions

Aggravated by Exposure: None generally recognized.

EMERGENCY FIRST AID PROCEDURES

Inhalation: If affected, remove from exposure. Restore breathing. Keep warm and quiet.

Skin: Wash affected area thoroughly with soap and water. Remove contaminated clothing and launder before reuse.

Eyes: Flush eyes with large amounts of water for 15 minutes. Get medical attention.

Ingestion: Never give anything by mouth to an unconscious person. DO NOT INDUCE VOMITING. Seek medical attention immediately.

Chronic Health Hazards: Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

Carbon Black is classified by IARC as possible carcinogenic to humans (group 2B) based on experimental animal data, however there is insufficient evidence in humans for its carcinogenicity. Methyl Ethyl Ketone may increase the nervous system effects of other solvents. Prolonged overexposure to solvent ingredients in section 2 may cause adverse effects to the liver, urinary, blood forming, cardiovascular and reproductive systems. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Section 6 – Reactivity Data

Stability: Stable Unstable
Conditions to Avoid: None known.
Incompatibility: None known.
Hazardous Decomposition Products: By fire: Carbon dioxide, carbon monoxide, oxides of nitrogen, possibility of hydrogen cyanide.
Hazardous Polymerization: Will Not Occur Will Occur

Section 7 – Spill or Leak Procedures

Steps to be taken in case material is released or spilled: Remove all sources of ignition. Ventilate and remove with inert absorbent.
Waste Disposal Method: Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers. Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with federal, state and local regulations regarding pollution.

Section 8 – Special Protection Information

Precautions to be taken in use: Use only with adequate ventilation. Avoid breathing vapor and spray mist. Avoid contact with skin and eyes. Wash hands after using. This coating may contain materials classified as nuisance particulates (listed “as Dust” in section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg./m³ (total dust), 3 mg./m³ (respirable fraction), OSHA PEL 15 mg./m³ (total dust), 5 mg./m³ (respirable fraction).

Ventilation: Local exhaust preferable. General exhaust acceptable if the exposure to materials in section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

Respiratory Protection: If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in section 2. When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

Protective Gloves: Wear gloves which are recommended by glove supplier for protection against materials in section 2.

Eye Protection: Wear safety spectacles with un-perforated side shields.

Section 9 – Special Precautions

DOL Storage Category: Class IB

Precautions to be taken in handling and storing: Contents are FLAMMABLE. Keep away from heat, sparks, and open flame. During use and until all vapors are gone: Keep area ventilated – do not smoke – extinguish all flames, pilot lights, and heaters – turn off stoves, electric tools and appliances, and any other sources of ignition. Consult NFPA code. Use approved bonding and grounding procedures. Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

Other Precautions: Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

Section 10 –Regulatory Information

SARA 313 (40 CFR 372.65C) Supplier Notification

| Chemical/Compound | CAS # | % by Weight |
|-------------------|-----------|-------------|
| Toluene | 108-88-3 | 5 |
| Xylene | 1330-20-7 | 5 |
| Glycol Ethers | | 3 |
| Ethylbenzene | 100-41-4 | 0.8 |

TOXICOLOGICAL INFORMATION and CHRONIC HEALTH HAZARDS

MEK may increase the nervous system effects of other solvents. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ethylbenzene is classified by IARC as a possible carcinogen to humans (2B), based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans.

Carbon Black is classified by IARC as possibly carcinogenic to humans (group 2B) based upon experimental animal data, however, there is insufficient evidence in humans for its carcinogenicity.

TOXICOLOGY DATA:

| CAS No. | Ingredient Name | | | | |
|------------|-----------------------------------|------|-----|-----|---------------|
| 64742-89-8 | Lt. Aliphatic Hydrocarbon Solvent | LC50 | RAT | 4HR | Not Available |
| | | LD50 | RAT | | Not Available |
| | | | | | |
| 64742-89-8 | V. M. & P. Naphtha | LC50 | RAT | 4HR | Not Available |
| | | LD50 | RAT | | Not Available |
| | | | | | |
| 108-88-3 | Toluene | LC50 | RAT | 4HR | 4000 ppm |
| | | LD50 | RAT | | 5000 mg/kg |
| | | | | | |
| 100-41-4 | Ethylbenzene | LC50 | RAT | 4HR | Not Available |
| | | LD50 | RAT | | 3500 mg/kg |
| | | | | | |
| 1330-20-7 | Xylene | LC50 | RAT | 4HR | 5000 ppm |
| | | LD50 | RAT | | 4300 mg/kg |
| | | | | | |
| 67-63-0 | 2-Propanol | LC50 | RAT | 4HR | Not Available |
| | | LD50 | RAT | | 5045 mg/kg |
| | | | | | |
| 78-83-1 | 2-Methyl-1-propanol | LC50 | RAT | 4HR | Not Available |
| | | LD50 | RAT | | 2460 mg/kg |
| | | | | | |
| 111-76-2 | 2-Butoxyethanol | LC50 | RAT | 4HR | Not Available |
| | | LD50 | RAT | | 470 mg/kg |
| | | | | | |
| 78-93-3 | Methyl Ethyl Ketone | LC50 | RAT | 4HR | Not Available |
| | | LD50 | RAT | | 2740 mg/kg |
| | | | | | |
| 110-19-0 | Isobutyl Acetate | LC50 | RAT | 4HR | Not Available |
| | | LD50 | RAT | | 13400 mg/kg |
| | | | | | |
| 1333-86-4 | Carbon Black | LC50 | RAT | 4HR | Not Available |
| | | LD50 | RAT | | Not Available |
| | | | | | |

California Proposition 65:

WARNING: This product contains chemicals know to the state of California to cause cancer and birth defects or other reproductive harm (Toluene).

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TSCA Certification: All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

| | Over one gallon: | One gallon or less: |
|------------------|-------------------------|----------------------------|
| DOT Description: | Paint | Consumer commodity, ORM-D |
| Hazard Class: | 3 | Hazardous ORM-D |
| Packaging Class: | II | NA |
| UN or NA ID#: | UN1263 (ERG #128) | NA |
| Labeling: | Flammable Liquid | Consumer commodity, ORM-D |
| Label: | ORM-D | |

Bulk containers may be shipped as UN1263, Paint, Class 3, Pg II (ERG 128)

CANADA: UN1263, Paint, Class 3, Pg II (ERG 128)

IMO: UN1263, Paint, Class3, Pg II, (-6 C c.c.) EmS F-E, S-E

Section 11 - Other Information

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

Disclaimer

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