1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

24-HOUR EMERGENCY PHONE NUMBER: 517-636-4400

Product: CYCLOTENE* 3022 - 35 ADVANCED ELECTRONICS RESIN

Product Code: 35044

Effective Date: 03/26/99 Date Printed: 08/18/99 MSD: 004306

The Dow Chemical Company, Midland, MI 48674

Customer Information Center: 800-258-2436

2. COMPOSITION/INFORMATION ON INGREDIENTS

B-staged divinylsiloxane-bis-benzocyclobutene	CAS# 124221-30-3	20-39%
Mesitylene	CAS# 000108-67-8	61-70%
Polymerized 1,2-Dihydro-2,2,4-trimethyl quinoline	CAS# 026780-96-1	.01-10%

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

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*  Yellow amber liquid.  Aromatic hydrocarbon odor.  Combustible.   *
*  Causes eye irritation.  May cause allergic skin reaction.  May be *
*  harmful if inhaled.                                               *
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POTENTIAL HEALTH EFFECTS (See Section 11 for toxicological data.)

EYE: May cause moderate irritation with corneal injury. Vapors may irritate eyes.

SKIN: Prolonged or repeated exposure may cause skin irritation, even a burn. May cause drying or flaking of skin. Has caused allergic skin reactions in humans. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.

INGESTION: Single dose oral toxicity is considered to be low. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury. If aspirated (liquid enters the lung), may cause lung damage or even death due to chemical pneumonia.

INHALATION: Excessive vapor concentrations are attainable and could be hazardous on single exposure. Excessive exposure may cause irritation to upper respiratory tract and lungs. Signs and symptoms of excessive exposure may be anesthetic or narcotic

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3. HAZARDS IDENTIFICATION (CONTINUED)

effects.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Excessive exposure may cause irritation to upper respiratory tract and lungs. Repeated excessive exposures may cause central nervous system depression and blood effects. Signs and symptoms of excessive exposure may be anesthetic or narcotic effects. Contains a substance which, in animals, has been shown to cause liver, lung, adrenal and central nervous system effects.

4. FIRST AID

EYE: Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

SKIN: Wash off in flowing water or shower.

INGESTION: Do not induce vomiting. Call a physician and /or emergency facility immediately.

INHALATION: Remove to fresh air. If not breathing, give artifical respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

NOTE TO PHYSICIAN: The decision of whether to induce vomiting or not should be made by an attending physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
FLASH POINT: 112F* 44C
METHOD USED: SFCC
AUTOIGNITION TEMPERATURE: 1039F (559C)*

FLAMMABLE LIMITS
LFL: 0.9% @ 212F
UFL: Not Determined
*Based on Mesitylene.

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5. FIRE FIGHTING MEASURES (CONTINUED)

HAZARDOUS COMBUSTION PRODUCTS: Under fire conditions polymers decompose. The smoke may contain polymer fragments of varying compositions in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to: carbon monoxide, carbon dioxide. Hazardous combustion products may include trace amounts of styrene.

EXTINGUISHING MEDIA: Water fog or fine spray, CO2, dry chemical, foam.

MEDIA TO BE AVOIDED: Do not use direct water stream.

OTHER FLAMMABILITY INFORMATION: Contact with strong oxidizers may may cause fire also. Vapors can form flammable mixtures if slightly heated. Vapors are heavier than air and may travel a considerable distance where they may linger and/or find an ignition source and flash back. Surfaces that are sufficiently hot may ignite liquid product in the absence of sparks or flame. Remove all possible ignition sources; like cigarrettes, flames, pilot lights, electrical sources, etc. Product has a limited solubility in water and will float on the surface. To minimize risk of fire or explosion, eliminate ignition sources.

FIRE-FIGHTING INSTRUCTIONS: Keep people away. Isolate fire area and deny unnecessary entry. Contain fire run-off if possible. Fire water run-off, if not contained may cause environmental damage. Review the "Protect the Environment" section under "Accidental Release Measures" of this MSDS to determine if material should be allowed to burn out or be extinguished. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Do not use direct water stream. May spread fire. Eliminate ignition sources. Stay upwind. Keep out of low areas where gases(fumes) can accumulate.

PROTECTIVE EQUIPMENT FOR FIREFIGHTERS: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

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6. ACCIDENTAL RELEASE MEASURES (See Section 15 for Regulatory Information)

PROTECT PEOPLE: Keep unnecessary people away; isolate hazard area and deny unnecessary entry.

PROTECT THE ENVIRONMENT: Vapor explosion hazard, keep out of sewers. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion.

CLEANUP: Use inert absorbent material such as sand or sawdust. Under some conditions of use, application of clay or cellulose based absorbents on spills of this material may result in the generation of flammable vapors since there is a heat of absorbtion and a high surface area. Pump up (with appropriate explosion proof equipment) or soak up with sand or other absorbent. Application of vapor suppression foams may be appropriate. Ventilate area and wash spill site after material pick up is complete.

7. HANDLING AND STORAGE

HANDLING: Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld or perform similar operations on or near empty containers. No smoking, open flames or sources of ignition in handling and storage area.

STORAGE: Use of non-sparking or explosion proof equipment may be necessary, depending upon the type of operation. Minimize sources of ignition, such as static buildup, heat, spark or flame.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Use only with adequate ventilation.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION: Use chemical goggles. If vapor causes eye discomfort, use a full-face respirator.

SKIN PROTECTION: Use protective clothing impervious to this material. Selection of specific items such as faceshield, gloves, boots, apron, or full-body suit will depend on

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION (CONTINUED)

operation. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration. For emergency and other conditions where the exposure guideline may be greatly exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxilary self-contained air supply. In confined or poorly ventilated areas, use an approved positive-pressure supplied-air respirator.

EXPOSURE GUIDELINE(S): Trimethylbenzene (mesitylene): ACGIH TLV and OSHA PEL are 25 ppm. PELS are in accord with those recommended by OSHA, as in the 1989 revision of PELS.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Yellow-amber
ODOR: Aromatic hydrocarbon odor.
VAPOR PRESSURE: 2.49 mm Hg @ 25C
VAPOR DENSITY (Air=1): 4.1
BOILING POINT: 324F* 162C
SOLUBILITY IN WATER: 0.1%
SPECIFIC GRAVITY: Not determined
DENSITY:
*Based on Mesitylene.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable at ambient temperatures.

CONDITIONS TO AVOID: See Hazardous Polymerization section. Avoid temperatures above 140F. Can react with itself at temperatures above 140F. Flammable vapors can be released at elevated temperatures. Product can oxidize at elevated temperatures. Solvent in product evaporates readily.

INCOMPATIBILITY WITH OTHER MATERIALS: Strong oxidizing agent.

HAZARDOUS DECOMPOSITION PRODUCTS: Refer to Section 5 for hazardous combustion products.

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10. STABILITY AND REACTIVITY (CONTINUED)

HAZARDOUS POLYMERIZATION: Can occur with heat.

11. TOXICOLOGICAL INFORMATION (See Section 3 for Potential Health Effects. For detailed toxicological data, write or call the address or non-emergency number shown in Section 1)

SKIN: The LD50 has not been determined.

INGESTION: Single oral dose LD50 has not been determined.

MUTAGENICITY (EFFECTS ON GENETIC MATERIAL): Results of in vitro (test tube) mutagenicity tests have been negative for component tested. (DHTMQ)

12. ECOLOGICAL INFORMATION (For detailed Ecological data, write or call the address or non-emergency number shown in Section 1)

ENVIRONMENTAL FATE

MOVEMENT & PARTITIONING: Based on information for mesitylene. Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

DEGRADATION & PERSISTENCE: Based on information for mesitylene. Biodegradation may occur slowly under aerobic conditions (in the presence of oxygen.

ECOTOXICITY: Based on information for mesitylene. Material is slightly toxic to aquatic organisms on an acute basis (LC50 between 10 and 100 mg/L in most sensitive species).

13. DISPOSAL CONSIDERATIONS (See Section 15 for Regulatory Information)

DISPOSAL: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. THE DOW CHEMICAL COMPANY HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/Information On Ingredients).

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13. DISPOSAL CONSIDERATIONS (See Section 15 for Regulatory Information)

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: recycler, reclaimer, incinerator or other thermal destruction device.

As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customers Information Center at 800-258-2436 or 517-832-1556 for further details.

14. TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (D.O.T.):
For D.O.T. regulatory information, if required, consult transportation regulations, product shipping papers or contact your Dow representative.

CANADIAN TDG INFORMATION:
For TDG regulatory information, if required, consult transportation regulations, product shipping papers, or your Dow representative.

15. REGULATORY INFORMATION (Not meant to be all-inclusive--selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

U.S. REGULATIONS

SARA 313 INFORMATION: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

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REGULATORY INFORMATION:(CONTINUED)

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard
A delayed health hazard
A fire hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA):

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

This product contains a chemical that requires TSCA export notification.

The chemical(s) is(are):

Mesitylene CAS# 000108-67-8

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
MESITYLENE	000108-67-8	NJ3

NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).

OSHA HAZARD COMMUNICATION STANDARD:

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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REGULATORY INFORMATION:(CONTINUED)

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND):

To the best of our knowledge, this product contains no chemical subject to reporting under CERCLA.

CANADIAN REGULATIONS

WHMIS INFORMATION: The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is:

B3 - combustible liquid with a flash point between 37.8C and 93.3C
D2B - eye or skin irritant
D2B - skin sensitizer
Refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's workplace education program.

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

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HAZARDOUS PRODUCTS ACT INFORMATION: This product contains the following ingredients which are Controlled Products and/or on the Ingredient Disclosure List (Canadian HPA section 13 and 14):

COMPONENTS:	CAS #	AMOUNT(%w/w)
Mesitylene	CAS# 000108-67-8	61-70%

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16. OTHER INFORMATION

MSDS STATUS: Revised Section 13, Disposal.

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