# SAFETY DATA SHEET

**DUPONT ELECTRONIC MATERIALS INTERNATIONAL, LLC**

**Product name: CYCLOTENE™ 6505 ADVANCED ELECTRONICS RESIN**

**Issue Date:** 05/07/2024

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DUPONT ELECTRONIC MATERIALS INTERNATIONAL, LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## 1. IDENTIFICATION

**Product name:** CYCLOTENE™ 6505 ADVANCED ELECTRONICS RESIN

**Recommended use of the chemical and restrictions on use**
**Identified uses:** For industrial use: use in the electronic packaging of semiconductor devices
**Uses advised against:** We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

**COMPANY IDENTIFICATION**
DUPONT ELECTRONIC MATERIALS
INTERNATIONAL, LLC
455 FOREST STREET
MARLBOROUGH MA 01752
UNITED STATES

**Customer Information Number:** 833-338-7668
SDSQuestion-NA@dupont.com

**EMERGENCY TELEPHONE NUMBER**
**24-Hour Emergency Contact:** 1-800-424-9300
**Local Emergency Contact:** 800-424-9300

## 2. HAZARDS IDENTIFICATION

**Hazard classification**
GHS classification in accordance with 29 CFR 1910.1200
Flammable liquids - Category 3

**Label elements**
**Hazard pictograms**

Signal word: **WARNING!**

**Hazards**
Flammable liquid and vapour.

**Precautionary statements**

**Prevention**
Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/ eye protection/ face protection.

**Response**
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

**Storage**
Store in a well-ventilated place. Keep cool.

**Disposal**
Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**
No data available
**Further information**
The values listed below represent the percentages of ingredients of unknown toxicity.
The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 64.1896 %
The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 24.1541 %

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical nature:** Solution of organic compounds
This product is a mixture.

| Component | CASRN | Concentration |
|---|---|---|
| Dipropylene glycol dimethyl ether | 111109-77-4 | 45.0 - 55.0 % |
| Polymer | | 20.0 - 30.0 % |
| Electronic grade propylene glycol monomethyl ether acetate | 108-65-6 | 15.0 - 25.0 % |

| | | |
|---|---|---|
| epoxy resin | | 5.0 - 15.0 % |
| 6-diazo-5-oxo-5,6-dihydro-naphthalene-1-sulfonic acid ester mixture with 2-[bis-(2,3,5-trimethyl-4-hydroxyphenyl)-methyl]phenol | 184489-92-7 | 2.0 - 12.0 % |
| Anisole | 100-66-3 | 1.0 - 10.0 % |
| Siloxane adhesion promoter | | < 3.0 % |

## 4. FIRST AID MEASURES

**Description of first aid measures**
**General advice:**
First Aid responders should pay attention to self-protection and use the recommended protective clothing If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Remove from exposure. If there is difficulty in breathing, give oxygen. Immediate medical attention is required.

**Skin contact:** Wash off with soap and water. Continue washing for at least 15 minutes. Obtain medical attention if blistering occurs or redness persists.

**Eye contact:** Immediately flush the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

**Ingestion:** Wash out mouth with water. Have victim drink 1-3 glasses of water to dilute stomach contents. Do NOT induce vomiting. Obtain medical attention.

**Most important symptoms and effects, both acute and delayed:**
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

**Indication of any immediate medical attention and special treatment needed**
**Notes to physician:** Treat symptomatically. Aspiration during swallowing or vomiting may result in lung injury.

## 5. FIREFIGHTING MEASURES

**Suitable extinguishing media:** Dry sand Dry chemical Alcohol-resistant foam Carbon dioxide (CO2) Keep containers and surroundings cool with water spray.

**Unsuitable extinguishing media:** Straight or direct water streams may not be effective to extinguish fire.

**Special hazards arising from the substance or mixture**

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide. Combustion products may include trace amounts of: Nitrogen oxides. Sulfur oxides.

**Unusual Fire and Explosion Hazards:** This product may give rise to hazardous vapors in a fire. Vapors can travel a considerable distance to a source of ignition and result in flashback.

**Advice for firefighters**
**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry.

**Special protective equipment for firefighters:** Wear full protective clothing and self-contained breathing apparatus.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** Wear suitable protective clothing. Wear respiratory protection. Eliminate all ignition sources.

**Environmental precautions:** Prevent the material from entering drains or water courses. Do not discharge directly to a water source. Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

**Methods and materials for containment and cleaning up:** Contain spills immediately with inert materials (e.g., sand, earth). Transfer into suitable containers for recovery or disposal. Finally flush area with plenty of water.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Use local exhaust ventilation. Avoid contact with eyes, skin and clothing. Keep container tightly closed.

**Conditions for safe storage:** Store in original container. Keep away from heat and sources of ignition. Storage area should be: cool dry well ventilated out of direct sunlight away from incompatible materials
Keep away from heat, sparks, flame, and other sources of ignition. Practice good personal hygiene to prevent accidental exposure.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

| Component | Regulation | Type of listing | Value |
|---|---|---|---|
| Dipropylene glycol dimethyl ether | DUPONT AEL | AEL * | 25 ppm |

| | | | |
|---|---|---|---|
| Electronic grade propylene glycol monomethyl ether acetate | DUPONT AEL | AEL * | 30 ppm |
| | DUPONT AEL | STEL | 90 ppm |
| | US WEEL | TWA | 50 ppm |
| | CAL PEL | PEL | 541 mg/m3 100 ppm |
| | Further information: S: Skin | | |
| | CAL PEL | STEL | 811 mg/m3 150 ppm |
| | Further information: S: Skin | | |
| Anisole | DUPONT AEL | AEL * | 2 ppm |
| | DUPONT AEL | STEL | 4 ppm |

**Exposure controls**
**Engineering measures:** Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (local exhaust), and control of process conditions.

**Individual protection measures**
**Eye/face protection:** If there is a potential for exposure or contact to the chemical, wear following approved PPE: Goggles
**Skin protection**
**Hand protection:** Butyl rubber gloves. Other chemical resistant gloves may be recommended by your safety professional.
**Other protection:** Normal work wear.
**Respiratory protection:** Respiratory protection if there is a risk of exposure to high vapor concentrations. The specific respirator selected must be based on the airborne concentration found in the workplace and must not exceed the working limits of the respirator.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Appearance** | |
| **Physical state** | liquid |
| **Color** | red |
| **Odor** | ether-like |
| **Odor Threshold** | Not applicable |
| **pH** | Not applicable |
| **Melting point/range** | No data available |
| **Freezing point** | No data available |
| **Boiling point (760 mmHg)** | >150 °C ( 302 °F) |
| **Flash point** | >40 °C ( 104 °F) |
| **Evaporation Rate (Butyl Acetate = 1)** | Slower than ether |
| **Flammability (solid, gas)** | Not Applicable |
| **Lower explosion limit** | No data available |
| **Upper explosion limit** | No data available |

| | |
|---|---|
| **Vapor Pressure** | 2.66 mmHg at 20 °C (68 °F) *Literature* (propylene glycol methyl ether acetate) |
| **Relative Vapor Density (air = 1)** | Heavier than air. |
| **Relative Density (water = 1)** | 1.04 |
| **Water solubility** | partly soluble |
| **Partition coefficient: n-octanol/water** | This product is a mixture. See Section 12 for individual component data. |
| **Auto-ignition temperature** | No data available |
| **Decomposition temperature** | Temperatures greater than recommended storage temperature. |
| **Kinematic Viscosity** | No data available |
| **Explosive properties** | Not explosive |
| **Oxidizing properties** | No |
| **Molecular weight** | No data available for mixture |
| **Volatile Organic Compounds** | 645 g/L |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

## 10. STABILITY AND REACTIVITY

**Reactivity:** Not classified as a reactivity hazard.

**Chemical stability:** Stable under recommended storage conditions.

**Possibility of hazardous reactions:** No dangerous reaction known under conditions of normal use. Will not occur.

**Conditions to avoid:** Exposure to sunlight. High temperatures Heat, flames and sparks. Static discharge. contact with incompatible materials

**Incompatible materials:** Oxidizing agents Strong acids and strong bases

**Hazardous decomposition products:** Carbon oxides Nitrogen oxides (NOx) oxides of silicon phenols

## 11. TOXICOLOGICAL INFORMATION

*Toxicological information appears in this section when such data is available.*

**Acute toxicity**

**Acute oral toxicity**

Product test data not available. Refer to component data.

**Acute dermal toxicity**

Product test data not available. Refer to component data.

**Acute inhalation toxicity**
Product test data not available. Refer to component data.

**Skin corrosion/irritation**
Product test data not available. Refer to component data.

**Serious eye damage/eye irritation**
Product test data not available. Refer to component data.

**Sensitization**
Product test data not available. Refer to component data.

**Specific Target Organ Systemic Toxicity (Single Exposure)**
Product test data not available. Refer to component data.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**
Product test data not available. Refer to component data.

**Carcinogenicity**
Product test data not available. Refer to component data.

**Teratogenicity**
Product test data not available. Refer to component data.

**Reproductive toxicity**
Product test data not available. Refer to component data.

**Mutagenicity**
Product test data not available. Refer to component data.

**Aspiration Hazard**
Product test data not available. Refer to component data.

**COMPONENTS INFLUENCING TOXICOLOGY:**

**Dipropylene glycol dimethyl ether**

**Acute oral toxicity**
LD50, Rat, 3,329 mg/kg OECD Test Guideline 401

**Acute dermal toxicity**
LD50, Rat, > 2,000 mg/kg OECD Test Guideline 402

**Acute inhalation toxicity**
The LC50 has not been determined.

**Skin corrosion/irritation**
Brief contact may cause slight skin irritation with local redness.

**Serious eye damage/eye irritation**

May cause slight temporary eye irritation.

**Sensitization**
For skin sensitization:
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant information found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**
Available data are inadequate to determine single exposure specific target organ toxicity.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**
No data available

**Teratogenicity**
No data available

**Reproductive toxicity**
No data available

**Mutagenicity**
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Aspiration Hazard**
Based on available information, aspiration hazard could not be determined.

**Polymer**

**Acute oral toxicity**
No relevant data found.

**Acute dermal toxicity**
No relevant data found.

**Acute inhalation toxicity**
No relevant data found.

**Skin corrosion/irritation**
No relevant data found.

**Serious eye damage/eye irritation**
No relevant data found.

**Sensitization**
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**
Available data are inadequate to determine single exposure specific target organ toxicity.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**
No relevant data found.

**Carcinogenicity**
No relevant data found.

**Teratogenicity**
No relevant data found.

**Reproductive toxicity**
No relevant data found.

**Mutagenicity**
No relevant data found.

**Aspiration Hazard**
Based on physical properties, not likely to be an aspiration hazard.

**Electronic grade propylene glycol monomethyl ether acetate**

**Acute oral toxicity**
Observations in animals include: Lethargy. LD50, Rat, 8,532 mg/kg

**Acute dermal toxicity**
LD50, Rabbit, > 5,000 mg/kg

**Acute inhalation toxicity**
LC0, Rat, 6 Hour, vapour, > 23.5 mg/l No deaths occurred at this concentration.

LC50, Rat, 4 Hour, vapour, > 35.2 mg/l OECD Test Guideline 403

**Skin corrosion/irritation**
Prolonged contact is essentially nonirritating to skin.

**Serious eye damage/eye irritation**
May cause slight temporary eye irritation.

**Sensitization**
For skin sensitization:
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**
May cause drowsiness or dizziness.
Route of Exposure: Oral
Target Organs: Central nervous system

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**
For similar material(s):
Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

**Carcinogenicity**
Similar material(s) did not cause cancer in laboratory animals.

**Teratogenicity**
Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

**Reproductive toxicity**
For similar material(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. No toxicity to reproduction

**Mutagenicity**
In vitro genetic toxicity studies were negative.

**Aspiration Hazard**
Based on physical properties, not likely to be an aspiration hazard.

**epoxy resin**

**Acute oral toxicity**
No relevant data found.

**Acute dermal toxicity**
No relevant data found.

**Acute inhalation toxicity**
No relevant data found.

**Skin corrosion/irritation**
No relevant data found.

**Serious eye damage/eye irritation**
No relevant data found.

**Sensitization**
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**
Available data are inadequate to determine single exposure specific target organ toxicity.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**
No relevant data found.

**Carcinogenicity**
No relevant data found.

**Teratogenicity**
No relevant data found.

**Reproductive toxicity**
No relevant data found.

**Mutagenicity**
No relevant data found.

**Aspiration Hazard**
Based on physical properties, not likely to be an aspiration hazard.

**6-diazo-5-oxo-5,6-dihydro-naphthalene-1-sulfonic acid ester mixture with 2-[bis-(2,3,5-trimethyl-4-hydroxyphenyl)-methyl]phenol**

**Acute oral toxicity**
LD50, Rat, > 2,000 mg/kg

**Acute dermal toxicity**
The dermal LD50 has not been determined.

**Acute inhalation toxicity**
The LC50 has not been determined.

**Skin corrosion/irritation**
Brief contact is essentially nonirritating to skin.
Mechanical injury only.

**Serious eye damage/eye irritation**
Dust may irritate eyes.

**Sensitization**
For skin sensitization:
No relevant information found.

For respiratory sensitization:
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**
Available data are inadequate to determine single exposure specific target organ toxicity.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**
No relevant information found.

**Carcinogenicity**
No relevant data found.

**Teratogenicity**
No relevant data found.

**Reproductive toxicity**
No relevant data found.

**Mutagenicity**
No relevant data found.

**Aspiration Hazard**

No aspiration toxicity classification

**Anisole**

**Acute oral toxicity**
LD50, Rat, 3,700 mg/kg

**Acute dermal toxicity**
The dermal LD50 has not been determined.

**Acute inhalation toxicity**
LC50, Rat, 4 Hour, vapour, > 6.51 mg/l OECD Test Guideline 403 No deaths occurred at this concentration.

**Skin corrosion/irritation**
Brief contact may cause moderate skin irritation with local redness.
Prolonged contact may cause skin irritation with local redness.

**Serious eye damage/eye irritation**
May cause slight temporary eye irritation.
May cause slight temporary corneal injury.
Vapor may cause eye irritation experienced as mild discomfort and redness.

**Sensitization**
For skin sensitization:
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**
May cause drowsiness or dizziness.
Route of Exposure: Inhalation

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**
Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

**Carcinogenicity**
No relevant data found.

**Teratogenicity**
No relevant data found.

**Reproductive toxicity**
No relevant data found.

**Mutagenicity**
In vitro genetic toxicity studies were negative.

**Aspiration Hazard**
Based on available information, aspiration hazard could not be determined.

**Siloxane adhesion promoter**

**Acute oral toxicity**
Single dose oral LD50 has not been determined.

**Acute dermal toxicity**
The dermal LD50 has not been determined.

**Acute inhalation toxicity**
The LC50 has not been determined. Irritating to respiratory system.

**Skin corrosion/irritation**
Brief contact may cause moderate skin irritation with local redness.

**Serious eye damage/eye irritation**
May cause moderate eye irritation.

**Sensitization**
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**
The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.
Route of Exposure: Inhalation
Target Organs: Respiratory Tract

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**
No relevant data found.

**Carcinogenicity**
No relevant data found.

**Teratogenicity**
No relevant data found.

**Reproductive toxicity**
No relevant data found.

**Mutagenicity**
No relevant data found.

No relevant data found.

**Aspiration Hazard**
Based on physical properties, not likely to be an aspiration hazard.

## 12. ECOLOGICAL INFORMATION

*Ecotoxicological information appears in this section when such data is available.*

**Toxicity**

**Dipropylene glycol dimethyl ether**

**Acute toxicity to fish**
LC50, Poecilia reticulata (guppy), 96 Hour, > 1,000 mg/l, OECD Test Guideline 203

**Acute toxicity to aquatic invertebrates**
EC50, Daphnia magna (Water flea), 24 Hour, > 1,000 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**
EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, 4,307 mg/l, OECD Test Guideline 201

**Chronic toxicity to fish**
NOEC, Oncorhynchus mykiss (rainbow trout), 14 d, > 300 mg/l

**Chronic toxicity to aquatic invertebrates**
NOEC, Daphnia magna (Water flea), 21 d, 10 mg/l

**Toxicity to soil-dwelling organisms**
LC50, Eisenia fetida (earthworms), 14 d, survival, > 1,000 mg/kg

**Polymer**

**Acute toxicity to fish**
No relevant data found.

**Electronic grade propylene glycol monomethyl ether acetate**

**Acute toxicity to fish**
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 100 mg/l, OECD Test Guideline 203

**Acute toxicity to aquatic invertebrates**
EC50, Daphnia magna (Water flea), 48 Hour, > 500 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**
ErC50, Pseudokirchneriella subcapitata (microalgae), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 201 or Equivalent
NOEC, Pseudokirchneriella subcapitata (green algae), 96 Hour, > 1,000 mg/l, OECD Test Guideline 201

**Toxicity to bacteria**
EC10, 0.5 Hour, > 1,000 mg/l

**Chronic toxicity to fish**
NOEC, Oryzias latipes (Orange-red killifish), 14 d, 47.5 mg/l

**Chronic toxicity to aquatic invertebrates**
NOEC, Daphnia magna (Water flea), 21 d, >= 100 mg/l

**epoxy resin**

**Acute toxicity to fish**

No relevant data found.

**6-diazo-5-oxo-5,6-dihydro-naphthalene-1-sulfonic acid ester mixture with 2-[bis-(2,3,5-trimethyl-4-hydroxyphenyl)-methyl]phenol**

**Acute toxicity to fish**
No relevant information found.

**Anisole**

**Acute toxicity to fish**
Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

**Acute toxicity to aquatic invertebrates**
EC50, Daphnia magna (Water flea), 48 Hour, 27 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**
NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, 21 mg/l, OECD Test Guideline 201 or Equivalent
ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, 47 mg/l, OECD Test Guideline 201 or Equivalent

**Siloxane adhesion promoter**

**Acute toxicity to fish**
No relevant data found.

**Persistence and degradability**

**Dipropylene glycol dimethyl ether**

**Biodegradability:** Not readily biodegradable.

**Biodegradation:** 25 %
**Exposure time:** 28 d
**Method:** OECD Test Guideline 302B

**Theoretical Oxygen Demand:** 2.17 mg/mg

**Photodegradation**
**Test Type:** Half-life (indirect photolysis)
**Sensitization:** OH radicals
**Atmospheric half-life:** 3.8 Hour
**Method:** Estimated.

**Polymer**

**Biodegradability:** No relevant data found.

**Electronic grade propylene glycol monomethyl ether acetate**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).
10-day Window: Pass
**Biodegradation:** 83 %
**Exposure time:** 28 d
**Method:** OECD Test Guideline 301F or Equivalent

10-day Window: Not applicable
**Biodegradation:** 100 %
**Exposure time:** 28 d
**Method:** OECD Test Guideline 302B or Equivalent

**Theoretical Oxygen Demand:** 1.82 mg/mg

**epoxy resin**
**Biodegradability:** No relevant data found.

**6-diazo-5-oxo-5,6-dihydro-naphthalene-1-sulfonic acid ester mixture with 2-[bis-(2,3,5-trimethyl-4-hydroxyphenyl)-methyl]phenol**
**Biodegradability:** No data available.

**Anisole**
**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Not applicable
**Biodegradation:** 56 %
**Exposure time:** 14 d
**Method:** OECD Test Guideline 301C or Equivalent

**Siloxane adhesion promoter**
**Biodegradability:** Expected to degrade slowly in the environment.

**Bioaccumulative potential**

**Dipropylene glycol dimethyl ether**
**Bioaccumulation:** Bioaccumulation is unlikely. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
**Partition coefficient: n-octanol/water(log Pow):** 0.42 Measured
OECD Test Guideline 305C

**Polymer**
**Bioaccumulation:** No relevant data found.

**Electronic grade propylene glycol monomethyl ether acetate**
**Bioaccumulation:** Bioaccumulation is unlikely. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
**Partition coefficient: n-octanol/water(log Pow):** 1.2 Measured

**epoxy resin**
**Bioaccumulation:** No relevant data found.

**6-diazo-5-oxo-5,6-dihydro-naphthalene-1-sulfonic acid ester mixture with 2-[bis-(2,3,5-trimethyl-4-hydroxyphenyl)-methyl]phenol**
**Bioaccumulation:** No data available.
**Partition coefficient: n-octanol/water(log Pow):** 6.325 at 25 °C

**Anisole**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
**Partition coefficient: n-octanol/water(log Pow):** 2.62 OECD Test Guideline 117 or Equivalent

**Siloxane adhesion promoter**
**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Mobility in soil**

**Dipropylene glycol dimethyl ether**
Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.
Potential for mobility in soil is very high (Koc between 0 and 50).
**Partition coefficient (Koc):** 2 Estimated.

**Polymer**
No relevant data found.

**Electronic grade propylene glycol monomethyl ether acetate**
Potential for mobility in soil is very high (Koc between 0 and 50).
**Partition coefficient (Koc):** 1.7 Estimated.

**epoxy resin**
No relevant data found.

**6-diazo-5-oxo-5,6-dihydro-naphthalene-1-sulfonic acid ester mixture with 2-[bis-(2,3,5-trimethyl-4-hydroxyphenyl)-methyl]phenol**
No relevant data found.

**Anisole**
No relevant data found.

**Siloxane adhesion promoter**
No relevant data found.

## 13. DISPOSAL CONSIDERATIONS

**Disposal methods:** Dispose in accordance with all local, state (provincial), and federal regulations. Incineration is the recommended method of disposal for containers. Under RCRA, it is the responsibility of the product's user to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because the product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.

**Treatment and disposal methods of used packaging:** Empty containers retain product residues. Follow label warnings even after container is emptied. Improper disposal or reuse of this container may be dangerous and illegal. Refer to applicable federal, state and local regulations.

**Contaminated packaging:** Dispose of as unused product. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied.

## 14. TRANSPORT INFORMATION

**DOT**

| | |
|---|---|
| **Proper shipping name** | Resin solution |
| **UN number** | UN 1866 |
| **Class** | 3 |
| **Packing group** | III |

**Classification for SEA transport (IMO-IMDG):**

| | |
|---|---|
| **Proper shipping name** | RESIN SOLUTION |
| **UN number** | UN 1866 |
| **Class** | 3 |
| **Packing group** | III |
| **Marine pollutant** | No |
| **Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code** | Consult IMO regulations before transporting ocean bulk |

**Classification for AIR transport (IATA/ICAO):**

| | |
|---|---|
| **Proper shipping name** | Resin solution |
| **UN number** | UN 1866 |
| **Class** | 3 |
| **Packing group** | III |

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

## 15. REGULATORY INFORMATION

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**
Flammable (gases, aerosols, liquids, or solids)

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313**
This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

**Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103**
This material does not contain any components with a CERCLA RQ.

**U.S. Toxic Substances Control Act (TSCA)**
The product may only be used in microelectronics applications with appropriate engineering controls. Dispose of unused material and waste by incineration or to a certified land fill.

**Pennsylvania Right To Know**
The following chemicals are listed because of the additional requirements of Pennsylvania law:

| **Components** | **CASRN** |
|---|---|
| Dipropylene glycol dimethyl ether | 111109-77-4 |
| Electronic grade propylene glycol monomethyl ether acetate | 108-65-6 |
| Polymer | Not Assigned |
| epoxy resin | Not Assigned |
| Anisole | 100-66-3 |
| Siloxane adhesion promoter | Not Assigned |

**California Prop. 65**
WARNING: This product can expose you to chemicals including Cumene, which is/are known to the State of California to cause cancer, and Toluene, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

**United States TSCA Inventory (TSCA)**
The product contains an intentional component that is subject to a restriction. Production and/or use is limited by the conditions of the restriction.

## 16. OTHER INFORMATION

**Hazard Rating System**
**NFPA**

| Health | Flammability | Instability |
|---|---|---|
| 2 | 2 | 0 |

**Revision**
Identification Number: 11035409 / 1304 / Issue Date: 05/07/2024 / Version: 10.1
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

| | |
|---|---|
| AEL * | 8 & 12 hr. TWA |
| CAL PEL | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
| DUPONT AEL | DuPont AEL (Acceptable Exposure Limit) |

| | |
|---|---|
| PEL | Permissible exposure limit |
| STEL | Short-term exposure limit |
| TWA | 8-hr TWA |
| US WEEL | USA. Workplace Environmental Exposure Levels (WEEL) |

**Full text of other abbreviations**
AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

**Information Source and References**
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DUPONT ELECTRONIC MATERIALS INTERNATIONAL, LLC urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided 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 between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for

information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.
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