



# SAFETY DATA SHEET

## ROHM AND HAAS ELECTRONIC MATERIALS LLC

**Product name: MICROPOSIT™ S1828™ G2 POSITIVE  
PHOTORESIST**

**Issue Date: 03/01/2021**

**Print Date: 02/15/2022**

ROHM AND HAAS ELECTRONIC MATERIALS 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: MICROPOSIT™ S1828™ G2 POSITIVE PHOTORESIST**

**Recommended use of the chemical and restrictions on use**

**Identified uses:**

**COMPANY IDENTIFICATION**

ROHM AND HAAS ELECTRONIC MATERIALS 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

Carcinogenicity - Category 2

Specific target organ toxicity - single exposure - Category 3

**Label elements**

**Hazard pictograms**



Signal word: **WARNING!**

**Hazards**

Flammable liquid and vapour.  
May cause drowsiness or dizziness.  
Suspected of causing cancer.

**Precautionary statements**

**Prevention**

Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
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.  
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
IF exposed or concerned: Get medical advice/ attention.  
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

**Storage**

Store in a well-ventilated place. Keep container tightly closed.  
Store in a well-ventilated place. Keep cool.  
Store locked up.

**Disposal**

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

**Other hazards**

No data available

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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This product is a mixture.

<b>Component</b>	<b>CASRN</b>	<b>Concentration</b>
Propylene glycol methyl ether acetate	108-65-6	60.0 - 70.0 %
Mixed cresol novolak resin		>= 20.0 - <= 30.0 %
Diazo Photoactive Compound		>= 1.0 - <= 10.0 %

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Methoxy-1-propanol acetate	70657-70-4	0.1 - 1.0 %
1,4-Dioxane	123-91-1	0.1 - 1.0 %
Cresol	1319-77-3	>= 0.1 - <= 1.0 %

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## 4. FIRST AID MEASURES

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### Description of first aid measures

**Inhalation:** Remove from exposure. If there is difficulty in breathing, give oxygen. Seek medical attention if symptoms persist.

**Skin contact:** Wash skin with 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. Induce vomiting if person is conscious. Immediate medical attention is required. Never administer anything by mouth if a victim is losing consciousness, is unconscious or is convulsing.

### 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.

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## 5. FIREFIGHTING MEASURES

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**Suitable extinguishing media:** Dry sand Dry chemical Alcohol-resistant foam Carbon dioxide (CO<sub>2</sub>) 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:** No data available

**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  
Proprietary photoresist film contains approximately 2-4% of 2,3,4-trihydroxybenzophenone (THBP), which may sublime during soft-bake or hard-bake processing. THBP has low acute toxicity (LD50>5g/kg). Contact with eyes, skin or mucous membranes cause irritation. To prevent accumulation of THBP on equipment surfaces and ventilation ducts, preventative maintenance program including regular cleaning should be implemented. Wipe surfaces using an appropriate cleaning solvent when possible. Provide adequate general or local exhaust ventilation during the cleaning process. In situations where this is not possible or where solvent or dust concentrations become excessive, use an air purifying respirator with an organic vapor/ toxic particulate cartridge. When cleaning residual THBP, wear protective gloves and adequate protective clothing to prevent skin contact. Practice good personal hygiene to prevent accidental exposure. Clean all protective clothing and equipment thoroughly after each use.

## 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
Propylene glycol methyl ether acetate	Dow IHG	TWA	30 ppm
	Further information: SKIN: Absorbed via skin		
	Dow IHG	STEL	90 ppm
	Further information: SKIN: Absorbed via skin		
	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		

1,4-Dioxane	Dow IHG	TWA	5 ppm
	Further information: SKIN: Absorbed via skin		
	DUPONT AEL	AEL *	25 ppm
	Further information: Skin: Danger of cutaneous absorption		
	ACGIH	TWA	20 ppm
	Further information: liver dam: Liver damage; A3: Confirmed animal carcinogen with unknown relevance to humans; Skin: Danger of cutaneous absorption		
	ACGIH	TWA	20 ppm
	Further information: liver dam: Liver damage; A3: Confirmed animal carcinogen with unknown relevance to humans; Skin: Danger of cutaneous absorption		
	OSHA Z-1	TWA	360 mg/m3 100 ppm
	Further information: X: Skin designation; (b): The value in mg/m3 is approximate.		
	CAL PEL	PEL	1 mg/m3 0.28 ppm
	Further information: S: Skin		
Cresol	ACGIH	TWA Inhalable fraction and vapor	20 mg/m3
	Further information: URT irr: Upper Respiratory Tract irritation; A4: Not classifiable as a human carcinogen; Skin: Danger of cutaneous absorption		
	OSHA Z-1	TWA	22 mg/m3 5 ppm
	Further information: X: Skin designation; (b): The value in mg/m3 is approximate.		

### Exposure controls

**Engineering controls:** 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:** 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 Amber
Odor	ester-like
Odor Threshold	No data available
pH	neutral
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	ca.146.11 °C ( 295.00 °F)
Flash point	ca.40 - 46.11 °C ( 104 - 115.00 °F)

<b>Evaporation Rate (Butyl Acetate = 1)</b>	Slower than ether
<b>Flammability (solid, gas)</b>	Not Applicable
<b>Lower explosion limit</b>	1.5 % vol <i>Literature</i> Propylene glycol monomethyl ether acetate
<b>Upper explosion limit</b>	7.0 % vol <i>Literature</i> Propylene glycol monomethyl ether acetate
<b>Vapor Pressure</b>	No data available
<b>Relative Vapor Density (air = 1)</b>	Heavier than air.
<b>Relative Density (water = 1)</b>	1.010 - 1.070
<b>Water solubility</b>	insoluble
<b>Partition coefficient: n-octanol/water</b>	This product is a mixture. See Section 12 for individual component data.
<b>Auto-ignition temperature</b>	ca.333 °C (631 °F) <i>Literature</i> Propylene glycol monomethyl ether acetate
<b>Decomposition temperature</b>	No data available
<b>Kinematic Viscosity</b>	No data available
<b>Explosive properties</b>	No data available
<b>Oxidizing properties</b>	No data available
<b>Molecular weight</b>	No data available for mixture
<b>Volatile Organic Compounds</b>	642 - 1,038 g/L

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

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## 10. STABILITY AND REACTIVITY

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

**Chemical stability:** Stable under normal conditions.

**Possibility of hazardous reactions:** No dangerous reaction known under conditions of normal use. Product will not undergo hazardous polymerization.

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

**Incompatible materials:** Oxidizing agents

**Hazardous decomposition products:** Combustion will generate: oxides of carbon Nitrogen oxides (NOx) phenols Hydrogen fluoride Aldehydes acrid smoke and irritating fumes

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## 11. TOXICOLOGICAL INFORMATION

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*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:**

**Propylene glycol methyl 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.

**Mixed cresol novolak resin**

**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.

**Diazo Photoactive Compound**

**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.

**Skin corrosion/irritation**

Essentially nonirritating to skin.

**Serious eye damage/eye irritation**

Essentially nonirritating to eyes.

**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 not classified as specific target organ toxicant, single exposure.

**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**

No aspiration toxicity classification

**Methoxy-1-propanol acetate**

**Acute oral toxicity**

LD50, Rat, > 5,000 mg/kg

**Acute dermal toxicity**

LD50, Rabbit, > 2,000 mg/kg No deaths occurred at this concentration.

**Acute inhalation toxicity**

LC50, Rabbit, 4 Hour, vapour, > 2.46 mg/l

**Skin corrosion/irritation**

Essentially nonirritating to skin.

**Serious eye damage/eye irritation**

May cause slight eye irritation.

**Sensitization**

For similar material(s):

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 respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Excessive exposure may cause irritation to upper respiratory tract (nose and throat).

**Carcinogenicity**

No relevant data found.

**Teratogenicity**

Has caused birth defects in laboratory animals at doses nontoxic to the mother.

**Reproductive toxicity**

No relevant data found.

**Mutagenicity**

No relevant data found.

**Aspiration Hazard**

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

**1,4-Dioxane**

**Acute oral toxicity**

LD50, Rat, > 5,000 mg/kg

**Acute dermal toxicity**

LD50, Rabbit, > 7,000 mg/kg

**Acute inhalation toxicity**

Prolonged excessive exposure may cause serious adverse effects, even death. May cause central nervous system effects. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed. May cause pulmonary edema (fluid in the lungs.)

LC50, Rat, 4 Hour, vapour, 51.3 mg/l

Lethal Dose, Humans, 470 ppm Estimated.

**Skin corrosion/irritation**

Brief contact is essentially nonirritating to skin.  
May cause drying and flaking of the skin.  
Prolonged contact may cause skin irritation with local redness.

**Serious eye damage/eye irritation**

May cause slight eye irritation.  
May cause slight corneal injury.  
Vapor may cause eye irritation experienced as mild discomfort and redness.

**Sensitization**

For skin sensitization:  
No relevant information found.

For respiratory sensitization:  
No relevant information found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

May cause respiratory irritation.  
Route of Exposure: Inhalation  
Target Organs: Respiratory Tract

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

In animals, effects have been reported on the following organs:  
Liver.  
Kidney.  
Nasal tissue.  
May cause central nervous system effects.

**Carcinogenicity**

Human epidemiology studies have shown no indication that exposures to 1,4-dioxane in industrial situations have caused an increased incidence of tumors even though it has been shown to cause cancer in some laboratory animals.

**Teratogenicity**

Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

**Reproductive toxicity**

Limited data in laboratory animals suggest that the material does not affect reproduction.

**Mutagenicity**

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

**Aspiration Hazard**

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

**Cresol**

**Acute oral toxicity**

Typical for this family of materials. LD50, Rat, 100 - 300 mg/kg

**Acute dermal toxicity**

Typical for this family of materials. LD50, Rabbit, 300 - 1,000 mg/kg

**Acute inhalation toxicity**

Typical for this family of materials. LC50, Rat, 8 Hour, vapour, 35.38 mg/l

**Skin corrosion/irritation**

Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage.

**Serious eye damage/eye irritation**

May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

**Sensitization**

For skin sensitization:  
No relevant data found.

For respiratory sensitization:  
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Material is corrosive. Material is not classified as a respiratory irritant; however, upper respiratory tract irritation or corrosivity may be expected.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

**Teratogenicity**

Did not cause birth defects in laboratory animals. Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

**Reproductive toxicity**

In animal studies, did not interfere with reproduction.

**Mutagenicity**

In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative.

**Aspiration Hazard**

Aspiration into the lungs may occur during ingestion or vomiting, resulting in rapid absorption and injury to other body systems.

**Carcinogenicity**

**Component  
1,4-Dioxane**

**List**  
IARC

US NTP

ACGIH

**Classification**

Group 2B: Possibly carcinogenic to humans

Reasonably anticipated to be a human carcinogen

A3: Confirmed animal carcinogen with

unknown relevance to humans.

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## 12. ECOLOGICAL INFORMATION

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

### Toxicity

#### Propylene glycol methyl 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

#### Mixed cresol novolak resin

##### **Acute toxicity to fish**

No relevant data found.

#### Diazo Photoactive Compound

##### **Acute toxicity to fish**

No relevant data found.

#### Methoxy-1-propanol 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).

For similar material(s):

LC50, Oryzias latipes (Orange-red killifish), 96 Hour, > 100 mg/l, OECD Test Guideline 203 or Equivalent

##### **Acute toxicity to aquatic invertebrates**

For similar material(s):

EC50, Daphnia magna (Water flea), 48 Hour, 380 mg/l

**Acute toxicity to algae/aquatic plants**

For similar material(s):

EC50, Selenastrum capricornutum (green algae), 72 Hour, > 1,000 mg/l, OECD Test Guideline 201 or Equivalent

For similar material(s):

NOEC, Selenastrum capricornutum (green algae), 72 Hour, > 1,000 mg/l, OECD Test Guideline 201 or Equivalent

**Chronic toxicity to aquatic invertebrates**

Based on data from similar materials

NOEC, Daphnia magna (Water flea), 21 d, > 100 mg/l

**1,4-Dioxane**

**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, Pimephales promelas (fathead minnow), static test, 96 Hour, 13,000 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), static test, 24 Hour, 8,450 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**

EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 1,000 mg/l, OECD Test Guideline 201

**Chronic toxicity to fish**

NOEC, Pimephales promelas (fathead minnow), 32 d, > 103 mg/l

**Chronic toxicity to aquatic invertebrates**

NOEC, Daphnia magna (Water flea), 21 d, 1,000 mg/l

**Cresol**

**Acute toxicity to fish**

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

LC50, Oncorhynchus mykiss (rainbow trout), flow-through test, 96 Hour, 7.5 mg/l

**Acute toxicity to aquatic invertebrates**

LC50, Daphnia magna (Water flea), 48 Hour, 4.9 mg/l

**Acute toxicity to algae/aquatic plants**

Based on data from similar materials

EC50, Desmodesmus subspicatus (green algae), 48 Hour, 21 mg/l

Based on data from similar materials

EC10, Desmodesmus subspicatus (green algae), 48 Hour, 21 mg/l

**Toxicity to bacteria**

EC50, activated sludge, 458 mg/l

**Chronic toxicity to fish**

For similar material(s):  
NOEC, Pimephales promelas (fathead minnow), 32 d, 1.35 mg/l

**Chronic toxicity to aquatic invertebrates**

NOEC, Daphnia magna (Water flea), 21 d, number of offspring, > 1 mg/l

**Persistence and degradability**

**Propylene glycol methyl 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

**Mixed cresol novolak resin**

**Biodegradability:** No relevant data found.

**Diazo Photoactive Compound**

**Biodegradability:** No relevant data found.

**Methoxy-1-propanol acetate**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

For similar material(s):

**Biodegradation:** 90 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301F

**1,4-Dioxane**

**Biodegradability:** Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

10-day Window: Not applicable

**Biodegradation:** 29 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301C or Equivalent

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

**Biological oxygen demand (BOD)**

Incubation Time	BOD
5 d	20 %

10 d	23 %
20 d	30 %

**Photodegradation**

**Test Type:** Half-life (indirect photolysis)

**Sensitization:** OH radicals

**Atmospheric half-life:** 0.382 d

**Method:** Estimated.

**Cresol**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

**Theoretical Oxygen Demand:** 2.52 mg/mg

**Biological oxygen demand (BOD)**

Incubation Time	BOD
5 d	1.40 mg/mg
10 d	2.02 mg/mg
20 d	2.06 mg/mg

**Bioaccumulative potential**

**Propylene glycol methyl 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

**Mixed cresol novolak resin**

**Bioaccumulation:** No relevant data found.

**Methoxy-1-propanol acetate**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3). For similar material(s):

**Partition coefficient: n-octanol/water(log Pow):** 0.36

**1,4-Dioxane**

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

**Partition coefficient: n-octanol/water(log Pow):** -0.27 Measured

**Bioconcentration factor (BCF):** 0.2 - 0.6 Cyprinus carpio (Carp) 42 d

**Cresol**

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

**Partition coefficient: n-octanol/water(log Pow):** 1.95 Calculated.

**Bioconcentration factor (BCF):** < 100 Fish Measured

**Mobility in soil**

**Propylene glycol methyl ether acetate**

Potential for mobility in soil is very high (Koc between 0 and 50).  
**Partition coefficient (Koc):** 1.7 Estimated.

**Mixed cresol novolak resin**

No relevant data found.

**Diazo Photoactive Compound**

No relevant data found.

**Methoxy-1-propanol acetate**

No relevant data found.

**1,4-Dioxane**

Potential for mobility in soil is very high (Koc between 0 and 50).  
**Partition coefficient (Koc):** 1.23 Estimated.

**Cresol**

No relevant data found.

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### 13. DISPOSAL CONSIDERATIONS

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**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.

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### 14. TRANSPORT INFORMATION

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**DOT**

<b>Proper shipping name</b>	Resin solution
<b>UN number</b>	UN 1866
<b>Class</b>	3
<b>Packing group</b>	III

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

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

**IBC or IGC Code**

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

<b>Proper shipping name</b>	Resin solution
<b>UN number</b>	UN 1866
<b>Class</b>	3
<b>Packing group</b>	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.

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## **15. REGULATORY INFORMATION**

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**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)

Carcinogenicity

Specific target organ toxicity (single or repeated exposure)

**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.

**Pennsylvania Right To Know**

The following chemicals are listed because of the additional requirements of Pennsylvania law:

**Components**

Propylene glycol methyl ether acetate  
Mixed cresol novolak resin  
Diazo Photoactive Compound  
1,4-Dioxane

**CASRN**

108-65-6  
Not Assigned  
Not Assigned  
123-91-1

**California Prop. 65**

WARNING: This product can expose you to chemicals including 1,4-Dioxane, Formaldehyde, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**United States TSCA Inventory (TSCA)**

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

## 16. OTHER INFORMATION

### Hazard Rating System

#### NFPA

Health	Flammability	Instability
2	2	0

### Revision

Identification Number: 11142585 / 1304 / Issue Date: 03/01/2021 / Version: 1.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

### Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
AEL *	8 & 12 hr. TWA
CAL PEL	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Dow IHG	Dow Industrial Hygiene Guideline
DUPONT AEL	DuPont AEL (Acceptable Exposure Limit)
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
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; 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.

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