

MATERIAL SAFETY DATA SHEET

Product Name: Developer 1000 for Avatrel* Dielectric Polymers
Document: DEV1000
Effective Date: 27 July 1999

CFLN: AUUS
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1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Developer 1000 for Avatrel* Dielectric Polymers

Company Identification Promerus LLC
Electronic Materials
9921 Brecksville Rd.
Brecksville, OH 44141-3289
United States of America

Telephone (216) 447-6270

Emergency (24 Hour) (888)211-4441

2. COMPOSITION, INFORMATION ON INGREDIENTS

--Ingredient--	-CAS Number-
d-Limonene	0005989-27-5
Methyl dodecanoate	0000111-82-0

3. HAZARDS IDENTIFICATION

Acute Health Effects

May cause redness of the eyes, tearing and blurred vision.
Causes eye irritation.
Accidental ingestion may cause discomfort in the throat and stomach.
Inhalation may cause irritation of the respiratory tract and mucous membranes.

Chronic Health Effects

Prolonged or repeated skin contact may defat the skin and produce dermatitis.

Signs/Symptoms of Exposure

Irritation.

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Routes of Exposure/Entry

Eyes, skin contact, inhalation, ingestion.

Target Organs

Eyes, skin, respiratory system.

Medical Conditions Aggravated by Exposure

None known.

Pre-existing skin problems may be aggravated by prolonged or repeated contact.

Pre-existing respiratory disease(s) may be aggravated by prolonged or repeated inhalation of airborne dust.

Carcinogenic Status

The components of this mixture are not known to be listed or regulated by IARC, NTP, OSHA or ACGIH.

4. FIRST AID MEASURES

If irritation or other symptoms (as noted above) occur or persist from any route of exposure, remove the affected individual from the area: see a physician/get medical attention.

Eye Contact

Immediately flush eyes with plenty of clean water for an extended time, not less than five (5) minutes. Flush longer if there is any indication of residual chemical in the eye.

Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion.

Skin Contact

Wash the affected area thoroughly with plenty of water and soap.

Inhalation

If affected, remove to fresh air.

If breathing is difficult, give oxygen.

Ingestion

Do not induce vomiting.

Get medical attention immediately.

Extreme care must be taken to prevent aspiration.

If victim is unconscious and breathing, position the person on their side to prevent aspiration.

5. FIRE FIGHTING MEASURES

NFPA Flammability Class	II
Flash Range	47.C (116.6F) Pensky-Martens Closed Cup ASTM D 93 ASTM D93-85
Explosive Range	Not Available

Extinguishing Media

NFPA Class II (Combustible Liquid): Use water spray, ABC dry chemical, "alcohol" foam or CO2. Use water to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray

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to disperse the vapors and to protect emergency responders attempting to stop a leak. Water spray may be used to flush spills away from exposures and to dilute spills to nonflammable mixtures.

Fire Fighting Instructions

Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.

Use water/water spray to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures and to dilute spills to non-combustible mixtures.

Do not flush combustible liquids into sewer as a fire or vapor explosion hazard may result.

Never direct a hose stream directly onto a burning flammable/combustible liquid. Solid or straight hose stream will cause fire to spread if directed onto a burning spill or into an open container of burning liquid.

Unusual Fire/Explosion Hazards

Protect product from flames of any kind; maintain proper clearance when using heat devices, etc.

Hot vapor or mists may be susceptible to spontaneous combustion when mixed with air. Ignition temperatures decrease with increasing vapor volume and vapor/air contact time and are influenced by pressure changes. Therefore, ignition may occur below published ignition temperatures. Use of this product in processes involving elevated-temperatures, vacuum if subject to sudden ingress of air, sudden escape of vapor or mist, etc., must be thoroughly evaluated to assure safe operation.

Vapors may explode if ignited in an enclosed area.

Do not flush spill to sewer. Runoff to sewer may cause a fire or explosion hazard.

Product can form a flammable vapor/air mixture at temperatures at or above the flash point.

Exposing closed containers to heat may cause excessive pressure resulting in explosive rupture.

6. ACCIDENTAL RELEASE MEASURES

Containment Techniques

Contain spill.

If spilled in an enclosed area, ventilate.

Clean-Up Techniques

Wear proper personal protective clothing and equipment.

Eliminate ignition sources.

Do not flush liquid into public sewer, water systems or surface

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workers to prevent routine inhalation.

Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the MSDS.

Ventilation guidelines/techniques may be found in publications such as Industrial Ventilation: American Conference of Governmental Industrial Hygienists, 1330 Kemper Meadow Drive, Cincinnati, OH, 45240-1634, USA.

Eye/Face Protection

Safety glasses or goggles required.

Skin Protection

Wear chemical resistant (impervious) gloves.

Respiratory Protection

Wear a respirator approved by NIOSH/MSHA (e.g., an organic vapor respirator, a full face air purifying respirator for organic vapors, or a self-contained breathing apparatus) whenever exposure to aerosol, mist, spray, fume or vapor exceed the exposure limit(s) of any chemical substance listed in this MSDS.

Use respirator in accordance with manufacturer's use limitations and OSHA standard 1910.134 (29CFR).

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Liquid
Appearance/Color	Clear
Odor	Mild citrus
Solubility (in water)	Insoluble
pH Value	Not Applicable
Boiling Range	340.F - 372.F (171.11C - 188.89C)
Vapor Pressure (mmHg)	< 2. @ 68.F (20.C)
Melting Point	Not Available
Evaporation Rate	Slower than n-Butyl Acetate
Vapor Density	Heavier than air
Partition Coefficient	Not Available
% Volatile Weight	> 99.%
Specific Gravity	(@ 77 F) 0.84

10. STABILITY AND REACTIVITY

Stability	This product is stable
Hazardous Polymerization	Hazardous polymerization will not occur

Conditions to Avoid

Do not expose to excessive heat or ignition sources.

Incompatibility with other materials

Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products

Carbon dioxide and carbon monoxide

11. TOXICOLOGICAL INFORMATION

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Route	Species	Exposure and Dose
d-Limonene		
Oral	Rat, adult	LD50 > 5000. mg/kg
Skin	Rabbit, adult	LD50 > 5000. mg/kg

No toxicity studies have been conducted on this product. As with all chemicals for which test data are limited or do not exist, caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure.

12. ECOLOGICAL INFORMATION

No ecological testing has been conducted on this product.

13. DISPOSAL CONSIDERATIONS

HAZARDOUS WASTE: Dispose of waste (incinerate) in a RCRA permitted hazardous waste disposal facility.
Flash point below 140 F (60 C) - EPA Hazardous Waste No.: D001.
Federal Resource Conservation and Recovery Act (RCRA), 40CFR261.21.
Federal, state and local regulations where the waste material is generated, treated, and/or disposed of must be examined to verify the appropriate waste classification.

14. TRANSPORTATION INFORMATION

UN Number	UN 2319
UN Pack Group	III
UN Class	3
ICAO/IATA Class	3
Shipping Name	Terpene hydrocarbons, N.O.S.

15. REGULATORY INFORMATION

--SARA Title III Section 313--

This product does not contain any substance(s) subject to the reporting requirements (i.e., at or above de minimus quantities) of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) 40 CFR 372.

--SARA Title III Section 312 Hazard Category (40 CFR 311/312)--

Acute Health:	Yes	Release of Pressure:	No
Chronic Health:	Yes	Reactive:	No
Fire:	Yes		

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--California Proposition 65-----

"Substances known to the state of California to cause cancer, birth defects or other reproductive harm": None known to be present or none in reportable amounts for occupational exposure as per OSHA's approval of the California Hazard Communication Standard, Federal Register, page 31159 ff, 6 June 1997.

Chemical identity of some or all components present is confidential business information (trade secret) and is being withheld as permitted by 29CFR1910.1200 (i).

US (Federal) Regulations

TSCA: All components of this product are either listed on the U.S. Toxic Substances Control Act (TSCA) inventory of chemicals or are otherwise compliant with TSCA regulations.

International Regulations

Canadian DSL: All components in this product are on the Canadian Domestic Substances List (DSL) or are exempt from listing.

The following components are on the Canadian Ingredient Disclosure List (WHMIS):

d-Limonene

Canadian WHMIS: This product is controlled under the Canadian Hazardous Materials Information System (WHMIS) and is classified as:

B3
D2B

16. OTHER INFORMATION

HMIS Rating (H-F-R-PPI) 1-2-0-C
NFPA Rating (H-F-R) 1-2-0

KEY: 0=Insignificant; 1=Slight; 2=Moderate; 3=High; 4=Extreme.

Hazardous Materials Identification System (HMIS), National Paint and Coatings Assn. rating applies to product "as packaged" (i.e., ambient temperature).

National Fire Protection Association (NFPA) rating identifies the severity of hazards of material during a fire emergency (i.e., "on fire").

Users Responsibility/Disclaimer of Liability

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this material. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state and local laws and local regulations remains the responsibility of the user.

This bulletin cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be

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examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to develop appropriate work practice guidelines and employee instructional programs for your operation.