

MATERIAL SAFETY DATA SHEET

Product Name: UNITY* Sacrificial Polymers (TMB Solution)
Document: EXPUNISAC
Effective Date: 31 July 2000

CFLN: AUUS
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1. PRODUCT AND COMPANY IDENTIFICATION

Product Name UNITY* Sacrificial Polymers (TMB Solution)
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

THIS MATERIAL IS SOLELY FOR RESEARCH AND DEVELOPMENT USE. It is not known to be on the TSCA inventory and cannot be distributed by itself or as part of another product in commerce. Its use is to be by or under the supervision of a technically qualified person. The physical, chemical and toxicological properties of this substance have not been fully determined.

2. COMPOSITION, INFORMATION ON INGREDIENTS

Table with 3 columns: --Ingredient--, -CAS Number-, ---%---. Rows include 1,3,5-trimethylbenzene (0000108-67-8, < 90) and Polyolefin (N/E, < 30).

Notes:
Amounts specified are typical and do not represent a specification. Remaining components are proprietary, nonhazardous and/or present at amounts below reportable limits.

3. HAZARDS IDENTIFICATION

Acute Health Effects
Causes skin irritation.
Causes eye irritation.
Excess inhalation may cause headaches and dizziness.
May cause respiratory difficulties, central nervous system symptoms, and irritation to the eyes, nose, and throat.
Chronic Health Effects

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

TRIMETHYL BENZENE: Repeated inhalation may cause chronic bronchitis of the asthmatic type. High concentration of vapors causes blood effects.

Routes of Exposure/Entry

Eyes, skin contact, inhalation, ingestion.

Target Organs

Eyes, skin, respiratory system, central nervous system, and blood.

Medical Conditions Aggravated by Exposure

In persons with impaired pulmonary function or obstructive airway diseases, inhalation may cause exacerbation of symptoms due to irritant properties.

Carcinogenic Status

Not listed or regulated by IARC, NTP, OSHA, or ACGIH.

4. FIRST AID MEASURES

If irritation occurs or persists from any route of exposure, remove the affected individual from the area. Call a physician.

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

Immediately remove contaminated clothing and shoes. Wash the affected area thoroughly with plenty of water and soap.

Inhalation

If affected, remove to fresh air.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.
Get medical attention immediately.

Ingestion

Extreme care must be taken to prevent aspiration.
Do not give liquids if victim is unconscious, very drowsy or unable to swallow.
Never give anything by mouth to an unconscious person.
Get medical attention immediately.

5. FIRE FIGHTING MEASURES

NFPA Flammability Class	II
Flash Point	(Trimethylbenzene) 112.F (44.44C)
Explosive Range	(Trimethylbenzene) Lower: 0.9% (Trimethylbenzene) Upper: 6.1%

Extinguishing Media

NFPA Class II (Combustible Liquid): Use water spray, ABC dry

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chemical, "alcohol" foam or CO2. Use water to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray 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.

Water spray (fog) can be used to absorb heat and to cool and protect surrounding exposed material.

Fire Fighting Instructions

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.

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.

Unusual Fire/Explosion Hazards

Vapors may form explosive mixtures in air under certain conditions. Gives off volatile vapors that are heavier than air and may travel along the ground or may be moved by ventilation and ignited by flame, sparks, heaters, or other ignition sources at distant locations (flashback potential).

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.

Irritating or toxic substances will be emitted upon burning, combustion or decomposition.

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

6. ACCIDENTAL RELEASE MEASURES

Issue warning: combustible liquid. Eliminate all ignition sources. Ventilate the area. If spill is large, be prepared to isolate the hazard area. Deny access to the spill area to persons who are not involved in the cleanup and/or who have not been properly trained in spill management of hazardous/flammable liquids.

Containment Techniques

Contain by diking with sand, earth or other non-combustible material. Prevent flow into public sewer (explosion hazard), streams or other

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water systems.

Blanket large spills with foam to minimize fire hazard and reduce vaporization. Remove as much as possible.

Clean-Up Techniques

Place waste into closed, labeled container and store in a safe location to await disposal. Transfer contaminated earth and/or diking/spill absorbent material to closed containers for recovery or disposal.

Wash the spill area to remove final traces. Personal protective equipment and clothing must be utilized by persons performing this work.

Absorb remainder with an inert material.

7. HANDLING AND STORAGE

Handling

Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities.

Do not wear contact lenses when working with this product.

Use under well-ventilated conditions.

Wash contaminated clothing before reuse.

Avoid eye contact.

Avoid repeated or prolonged skin contact.

Avoid breathing vapors (inhalation).

Avoid drinking, tasting, swallowing or ingesting this product.

Provide eyewash fountains and safety showers in the work area.

Eliminate ignition sources (e.g., sparks, static buildup, excessive heat, etc.).

Bond and ground all containers when transferring chemical.

Take precautions to prevent static discharge to prevent ignition of vapors.

Emptied container may contain residual vapors or liquid which may ignite or explode.

Do not reuse empty container without commercial cleaning or reconditioning.

Do not cut, puncture, or weld on or near the container.

Storage

Keep container closed when not in use.

Do not store in open, unlabeled or mislabeled containers.

Open containers carefully and slowly.

Store cool and dry, under well-ventilated conditions.

Avoid storing containers in direct sunlight as vapors may accumulate in the head space creating pressure.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

--ACGIH-TWA--- -ACGIH-STEL--- ---OSHA-TWA--- --OSHA-STEL---

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1,3,5-trimethylbenzene	N/E	N/E	N/E	N/E
Polyolefin	N/E	N/E	N/E	N/E

Notes:

Although ACGIH and OSHA have not established exposure limits for individual isomers of trimethylbenzene, we recommend that the exposure limit of 25 ppm for mixed isomers of trimethylbenzene be followed.

Engineering Controls

Always provide effective general and, when necessary, local exhaust ventilation to draw spray, aerosol, fume, mist and vapor away from 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.

Wear chemical resistant protective clothing.

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/ translucent
Solubility (in water)	Not Determined
pH Value	Not Determined
Boiling Range	(Trimethylbenzene) 162.C - 164.C (323.6F - 327.2F)
Vapor Pressure (mmHg)	(Trimethylbenzene) 2.49 @ 25.C (77.F)
Melting Point	Not Applicable
Evaporation Rate	Slower than n-Butyl Acetate
Vapor Density	(Trimethylbenzene) 4.1
Partition Coefficient	Not Available
% Volatile Weight	(Trimethylbenzene) 70-90
Specific Gravity	Not Determined

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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

Potential decomposition gases have not been fully determined but may include:

CO, CO2, hydrocarbons, and dense black smoke

11. TOXICOLOGICAL INFORMATION

Route	Species	Exposure and Dose
1,3,5-trimethylbenzene Inhalation	Rat, adult	LC50 24. mg/m3

No toxicity studies have been conducted on this experimental 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 experimental 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 1993
UN Pack Group	III
UN Class	3
ICAO/IATA Class	3
Shipping Name	Flammable Liquid, N.O.S. (contains

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1,3,5-Trimethylbenzene)

Notes:

Surface shipment within the United States:
For shipment in containers of 119 gallons (450 L) or less:
Not regulated.
For shipment in containers of more than 119 gallons (450 L) capacity:
Combustible liquid, N.O.S., NA 1993, PG III
(contains 1,3,5-Trimethylbenzene)

_____ **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

--TSCA 12(b) Ingredients (listing may not be complete)--

1,3,5-trimethylbenzene

--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: This product is not known to be on the TSCA inventory.

International Regulations

CANADA:

This product and/or one or more of its components are:
DSL No

_____ **16. OTHER INFORMATION** _____

HMIS Rating (H-F-R-PPI) 2-2-0-D

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NFPA Rating (H-F-R) 2-2-0
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").

Legend:

ACGIH: American Conference of Governmental Industrial Hygienists
A1: Confirmed human carcinogen
A2: Suspected human carcinogen
A3: Animal carcinogen
CAS No: Chemical Abstract Service Registry Number
IARC: International Agency for Research on Cancer
Group1: Carcinogenic to humans
Group2A: Probably carcinogenic to humans
Group2B: Possibly carcinogenic to humans
Group3: Unclassifiable as a carcinogen to humans
MSHA: Mine Safety and Health Administration
NIOSH: National Institute for Occupational Safety and Health
NTP: National Toxicology Program
N/A: Not Applicable
N/E: None Established
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
PNOC: Particulates Not Otherwise Classified
RTK: Right To Know
STEL: Short Term Exposure Limit (15 minute Time Weighted Average)
TLV: Threshold Limit Value
C: Ceiling limit
S: Skin notation refers to the potential significant contribution to the overall exposure by the cutaneous route including mucous membranes and the eyes and by direct skin contact with the substance
WEEL: Workplace Environmental Exposure Level
WHMIS: Canadian Workplace Hazardous Materials Information System

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

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experience during processing. Each aspect of your operation should be 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.