



Material Safety Data Sheet

Section 1. Product and Company Identification

Product Name	Entellan	Product Code	65037
Manufacturer	EMD Chemicals Inc. P.O. Box 70 480 Democrat Road Gibbstown, NJ 08027 Prior to January 1, 2003 EMD Chemicals Inc. was EM Industries, Inc. or EM Science, Division of EM Industries, Inc.	Effective Date	5/11/2005
		Print Date	5/17/2005

For More Information Call

856-423-6300 Technical Service
Monday-Friday: 8:00 AM - 5:00 PM

In Case of Emergency Call

800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

Synonym	None.
Material Uses	Laboratory Reagent
Chemical Family	Mixture.

Section 2. Composition and Information on Ingredients

Component	CAS #	% by Weight
Xylene	1330-20-7	60-65
n-Butyl methacrylate	97-88-1	35-40

Section 3. Hazards Identification

Physical State and Appearance	Liquid.
Emergency Overview	DANGER !POISON ! FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. MAY BE FATAL IF SWALLOWED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. HARMFUL IF INHALED. CAUSES EYE AND SKIN IRRITATION. CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: BLOOD, KIDNEYS, LIVER, GASTROINTESTINAL TRACT, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA.
Routes of Entry	Dermal contact. Eye contact. Inhalation. Ingestion.
Potential Acute Health Effects	<p>Eyes Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching.</p> <p>Skin Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. May be hazardous in case of skin contact (permeator).</p> <p>Inhalation Hazardous in case of inhalation.</p>

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Ingestion Extremely hazardous in case of ingestion. May be fatal if swallowed. Do not take internally.

Potential Chronic Health Effects

Carcinogenic Effects This material is not known to cause cancer in animals or humans.

Additional information See Toxicological Information (section 11)

Medical Conditions Aggravated by Overexposure:

Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Section 5. Fire Fighting Measures

Flammability of the Product	Product will burn.
Auto-ignition Temperature	>250°C (482°F)
Flash Points	Closed cup: 23°C (73.4°F).
Flammable Limits	Not available.
Products of Combustion	These products are carbon oxides (CO, CO ₂).
Fire Hazards in Presence of Various Substances	Highly flammable in presence of open flames, sparks and static discharge, of shocks, of heat.
Explosion Hazards in Presence of Various Substances	<p>Risks of explosion of the product in presence of static discharge: Highly flammable in presence of open flames, sparks and static discharge.</p> <p>Risks of explosion of the product in presence of mechanical impact: Highly flammable in presence of shocks.</p>
Fire Fighting Media and Instructions	<p>SMALL FIRE: Use DRY chemical powder.</p> <p>LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.</p>
Protective Clothing (Fire)	Be sure to use an approved/certified respirator or equivalent.
Special Remarks on Fire Hazards	Vapor may travel considerable distance to source of ignition and flash back.
Special Remarks on Explosion Hazards	Forms explosive mixture with air at elevated temperatures.

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Section 6. Accidental Release Measures

Small Spill and Leak	Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill and Leak	Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.
Spill Kit Information	The following EMD Chemicals Inc. SpillSolv (TM) absorbent is recommended for this product: SX1330 Solvent Treatment Kit

Section 7. Handling and Storage

Handling	Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.
Storage	Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame). Store between 15 to 25°C (59 to 77°F).

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	
<i>Eyes</i>	Splash goggles.
<i>Body</i>	Lab coat.
<i>Respiratory</i>	Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
<i>Hands</i>	Gloves.
<i>Feet</i>	Not applicable.

Protective Clothing (Pictograms)**Personal Protection in Case of a Large Spill**

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Product Name

Xylene

Exposure Limits**BMWA_MAK (Austria, 2001). Skin**STEL: 1760 mg/m³ 4 times per shift, 15 minute(s).

STEL: 400 ppm 4 times per shift, 15 minute(s).

TWA: 440 mg/m³ 8 hour(s).

TWA: 100 ppm 8 hour(s).

NOHSC (Australia, 1995). Notes: National Commission documentation available for these values Substance requiring reviewSTEL: 655 mg/m³ 15 minute(s).

STEL: 150 ppm 15 minute(s).

TWA: 350 mg/m³ 8 hour(s).

TWA: 80 ppm 8 hour(s).

Lijst Grenswaarden (Belgium, 1998).VCD: 660 mg/m³ 15 minute(s).

VCD: 150 ppm 15 minute(s).

VL: 440 mg/m³ 8 hour(s).

VL: 100 ppm 8 hour(s).

SUVA (Switzerland, 2001). Skin Notes: Not Temporary

Kurzzeitgrenzwerte: 870 mg/m³ 15 minute(s).

Kurzzeitgrenzwerte: 200 ppm 15 minute(s).

MAK: 435 mg/m³ 8 hour(s).

MAK: 100 ppm 8 hour(s).

Ministry of Health (CL, 1992).

CEIL: 651 mg/m³

TWA: 347 mg/m³ 8 hour(s).

TWA: 80 ppm 8 hour(s).

MAK-Werte Liste (Germany, 2000). Skin

Spitzenbegrenzung: 880 mg/m³ 4 times per shift, 30 minute(s).

Spitzenbegrenzung: 200 ML/M3 4 times per shift, 30 minute(s).

TWA: 440 mg/m³ 8 hour(s).

TWA: 100 ML/M3 8 hour(s).

TRGS900 (Germany, 2000). Skin Notes: Not Tentative

Spitzenbegrenzung: 1760 mg/m³

Spitzenbegrenzung: 400 ppm

TWA: 440 mg/m³ 8 hour(s).

TWA: 100 ppm 8 hour(s).

Arbejdstilsynet (Denmark, 2000). Skin

GV: 109 mg/m³ 8 hour(s).

GV: 25 ppm 8 hour(s).

80/1107/EEC (Europe, 2000). Skin Notes: Indicative

STEL: 442 mg/m³ 15 minute(s).

STEL: 100 ppm 15 minute(s).

TWA: 221 mg/m³ 8 hour(s).

TWA: 50 ppm 8 hour(s).

Tyterveyslaitos (Finland, 2001). Skin

STEL: 660 mg/m³ 15 minute(s).

STEL: 150 ppm 15 minute(s).

TWA: 440 mg/m³ 8 hour(s).

TWA: 100 ppm 8 hour(s).

INRS (France, 1999). Notes: Not Legal

VLE: 650 mg/m³ 15 minute(s).

VLE: 150 ppm 15 minute(s).

VME: 435 mg/m³ 8 hour(s).

VME: 100 ppm 8 hour(s).

NAOSH (Ireland, 1999). Skin

STEL: 650 mg/m³ 15 minute(s).

STEL: 150 ppm 15 minute(s).

OEL: 435 mg/m³ 8 hour(s).

OEL: 100 ppm 8 hour(s).

JSOH (Japan, 1996).

TWA: 430 mg/m³ 8 hour(s).

TWA: 100 ppm 8 hour(s).

Ministry of Labor (KR, 1997).

STEL: 655 mg/m³ 15 minute(s).

STEL: 150 ppm 15 minute(s).

TWA: 435 mg/m³ 8 hour(s).

TWA: 100 ppm 8 hour(s).

Secretary of Work and Social Security (MX, 1994).

CCT: 655 mg/m³ 15 minute(s).

CCT: 150 ppm 15 minute(s).

CPT: 435 mg/m³ 8 hour(s).

CPT: 100 ppm 8 hour(s).

Nationale MAC-lijst (Netherlands, 2001). Skin Notes: Legal

TGG 8 uur: 210 mg/m³ 8 hour(s).

TGG 8 uur: 50 ppm 8 hour(s).

Arbejdstilsynet (Norway, 2001). Skin

AN: 108 mg/m³ 8 hour(s).

AN: 25 ppm 8 hour(s).

NZ OSH (NZ, 1994). Notes: See Notice of Intended Changes.

STEL: 655 mg/m³ 15 minute(s).

STEL: 150 ppm 15 minute(s).

TWA: 350 mg/m³ 8 hour(s).

TWA: 80 ppm 8 hour(s).

AFS (Sweden, 2000). Skin

KTV: 450 mg/m³ 15 minute(s).

KTV: 100 ppm 15 minute(s).

NGV: 200 mg/m³ 8 hour(s).

NGV: 50 ppm 8 hour(s).

EH40-OES (United Kingdom (UK), 2001). Skin Notes: OES

STEL: 662 mg/m³ 15 minute(s).

STEL: 150 ppm 15 minute(s).

TWA: 441 mg/m³ 8 hour(s).

TWA: 100 ppm 8 hour(s).

ACGIH TLV (United States, 2000). Notes: 1996 Adoption Identifies substances identified in the BEI documetations for Methemoglobin inducers (for which methemoglobin is the principle toxicity) and organophosphorous cholinesterase inhibitors are part of this notation.

Refers to Appendix A -- Carc inogens.

STEL: 651 mg/m³ 15 minute(s).

STEL: 150 ppm 15 minute(s).

TWA: 434 mg/m³ 8 hour(s).

TWA: 100 ppm 8 hour(s).

OSHA PEL 1989 (United States, 1989).

STEL: 655 mg/m³ 15 minute(s).

STEL: 150 ppm 15 minute(s).

TWA: 435 mg/m³ 8 hour(s).

TWA: 100 ppm 8 hour(s).

Arbejdstilsynet (Denmark, 1996).

GV: 145 mg/m³ 8 hour(s).

GV: 25 ppm 8 hour(s).

Nationale MAC-lijst (Netherlands, 2000).

TGG 8 uur: 59 mg/m³ 8 hour(s).

TGG 8 uur: 10 ppm 8 hour(s).

Arbeidstilsynet (Norway, 1996).

AN: 300 mg/m³ 8 hour(s).

AN: 50 ppm 8 hour(s).

AFS (Sweden, 1996).

TGV: 450 mg/m³

TGV: 75 ppm

NGV: 300 mg/m³ 8 hour(s).

NGV: 50 ppm 8 hour(s).

n-Butyl methacrylate

Section 9. Physical and Chemical Properties

Odor	Benzene-like odor
Color	Colorless.
Physical State and Appearance	Liquid.
Molecular Weight	Not applicable.
Molecular Formula	Not applicable.
pH	Not applicable.
Boiling/Condensation Point	The lowest known value is 38°C (100.4°F) (Xylene). Weighted average: 85.08°C (185.1°F)
Melting/Freezing Point	May start to solidify at -25°C (-13°F) based on data for: Xylene. Weighted average: -43.75°C (-46.7°F)

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Specific Gravity	Weighted average: 0.87 (Water = 1)
Vapor Pressure	The highest known value is 1.1 kPa (8 mmHg) (@ 20°C) (Xylene). Weighted average: 0.8 kPa (6 mmHg) (@ 20°C)
Vapor Density	The highest known value is 4.8 (Air = 1) (n-Butyl methacrylate). Weighted average: 4.11 (Air = 1)
Odor Threshold	The lowest known value is 4.5 ppm (Xylene)
Evaporation Rate	0.7 (Xylene) compared to (n-Butyl Acetate = 1)
LogK_{ow}	Not available.
Solubility	Insoluble in water.

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Avoid all possible sources of ignition (spark or flame). Sensitive to light. (n-Butyl methacrylate)
Incompatibility with Various Substances	Highly reactive with oxidizing agents, reducing agents, acids.
Rem/Incompatibility	Incompatibilities; Uranium hexafluoride, Sulfur, Strong oxidizers.
Hazardous Decomposition Products	CO _x
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

RTECS Number:	Xylene n-Butyl Methacrylate	ZE2100000 OZ3675000
Toxicity	Acute oral toxicity (LD ₅₀): 16 mg/kg [Rat]. (n-Butyl methacrylate). Acute dermal toxicity (LD ₅₀): 911 mg/kg (Rabbit) (Calculated value for the mixture). Acute toxicity of the vapor (LC ₅₀): 4910 ppm 4 hour(s) [Rat]. (n-Butyl methacrylate).	
Chronic Effects on Humans	Not available.	
Acute Effects on Humans	Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching. Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. May be hazardous in case of skin contact (permeator). Hazardous in case of inhalation. Extremely hazardous in case of ingestion. May be fatal if swallowed.	
Synergetic Products (Toxicologically)	Not available.	
Irritancy	Draize Test: Not available.	
Sensitization	Not available.	
Carcinogenic Effects	This material is not known to cause cancer in animals or humans.	
Toxicity to Reproductive System	Not available.	
Teratogenic Effects	Not available.	
Mutagenic Effects	Not available.	

Section 12. Ecological Information

Ecotoxicity Not available.

BOD5 and COD Not available.

Toxicity of the Products of Biodegradation The products of degradation are less toxic than the product itself.

Section 13. Disposal Considerations

EPA Waste Number U239 D001

Treatment Incineration, fuels blending or recycle. Contact your local permitted waste disposal site (TSD) for permissible treatment sites. ALWAYS CONTACT PERMITTED WASTE DISPOSER (TSD) TO ASSURE COMPLIANCE WITH ALL CURRENT LOCAL, STATE AND FEDERAL REGULATIONS.

Section 14. Transport Information

DOT Classification Proper Shipping Name: RESIN SOLUTION
Hazard Class: 3
UN number: UN1866
Packing Group: III
RQ: Not applicable.



TDG Classification Not available.

IMO/IMDG Classification Not available.

ICAO/IATA Classification Not available.

Section 15. Regulatory Information

U.S. Federal Regulations TSCA 8(a) PAIR: n-Butyl methacrylate
TSCA 8(b) inventory: Xylene; n-Butyl methacrylate
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Xylene; n-Butyl methacrylate
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Xylene: Fire Hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard; n-Butyl methacrylate: Fire Hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard
SARA 313 toxic chemical notification and release reporting: Xylene 62.5%
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: Xylene
Clean air act (CAA) 112 accidental release prevention: No products were found.
Clean air act (CAA) 112 regulated flammable substances: No products were found.
Clean air act (CAA) 112 regulated toxic substances: No products were found.

WHMIS (Canada) CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
Class D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).
Class D-2B: Material causing other toxic effects (TOXIC).

CEPA DSL: Xylene; n-Butyl methacrylate

This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all required information.

International Regulations

EINECS Xylene 215-535-7
n-Butyl methacrylate 202-615-1

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DSCL (EEC) R10- Flammable.
 R28- Very toxic if swallowed.
 R21- Harmful in contact with skin.
 R37/38- Irritating to respiratory system and skin.
 R41- Risk of serious damage to eyes.

International Lists Australia (NICNAS): Xylene; n-Butyl methacrylate
 China: Xylene
 Germany water class: Xylene; n-Butyl methacrylate
 Japan (MITI): Xylene; n-Butyl methacrylate
 Korea (TCCL): Xylene; n-Butyl methacrylate
 Philippines (RA6969): Xylene; n-Butyl methacrylate
 China: Xylene

State Regulations Pennsylvania RTK: Xylene: (environmental hazard, generic environmental hazard); n-Butyl methacrylate: (generic environmental hazard)
 Massachusetts RTK: Xylene; n-Butyl methacrylate
 New Jersey: Entellan ® new
 California prop. 65: No products were found.

Section 16. Other Information

**National Fire
 Protection
 Association
 (U.S.A.)**



**Changed Since Last
 Revision**



Notice to Reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.