



# Material Safety Data Sheet

## Section 1. Product and Company Identification

<b>Product Name</b>	HARLECO Krystalon™	<b>Product Code</b>	64969
<b>Manufacturer</b>	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.	<b>Effective Date</b>	10/16/2003
		<b>Print Date</b>	5/3/2004

### 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  
Mounting Medium or Liquid Cover Slip

**Chemical Family** Solution.

## Section 2. Composition and Information on Ingredients

Component	CAS #	% by Weight
Poly (Ethyl Methacrylate)	28572-98-7	30-40
Toluene	108-88-3	50-60
Buthyl Benzyl Phthalate	85-68-7	0-10
2,6-Di-tert-butyl-4-methylphenol	128-37-0	0-1

## Section 3. Hazards Identification

**Physical State and Appearance** Liquid. (Viscous liquid.)

**Emergency Overview** DANGER !  
FLAMMABLE LIQUID AND VAPOR.  
VAPOR MAY CAUSE FLASH FIRE.  
VAPOR HARMFUL  
MAY BE FATAL IF SWALLOWED.  
HARMFUL IF INHALED.  
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.  
MAY BE HARMFUL IF ABSORBED THROUGH SKIN.

WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

**Routes of Entry** Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

### Potential Acute Health Effects

**Eyes** Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching.

**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).

Continued on Next Page

**Inhalation** Hazardous in case of inhalation (lung irritant).

**Ingestion** Extremely hazardous in case of ingestion. May be fatal if swallowed.

#### 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. Repeated or prolonged inhalation of vapors may lead to chronic respiratory irritation.

### 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

The lowest known value is 535.9°C (996.6°F) (Toluene).

#### Flash Points

Closed cup: 4.4444°C (40°F).

#### Flammable Limits

The greatest known range is LOWER: 1.3% UPPER: 7% (Toluene)

#### Products of Combustion

These products are carbon oxides (CO, CO<sub>2</sub>).

#### Fire Hazards in Presence of Various Substances

Extremely flammable in presence of oxidizing materials.  
Flammable in presence of open flames, sparks and static discharge, of shocks, of heat.

#### Explosion Hazards in Presence of Various Substances

##### Risks of explosion of the product in presence of static discharge:

Flammable in presence of open flames, sparks and static discharge.

##### Risks of explosion of the product in presence of mechanical impact:

Flammable in presence of shocks.

#### Fire Fighting Media and Instructions

SMALL FIRE: Use DRY chemical powder.  
LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

#### Protective Clothing (Fire)

Be sure to use an approved/certified respirator or equivalent.

#### Special Remarks on Fire Hazards

HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.  
Vapors may form explosive mixtures with air.  
Vapors may travel to source of ignition and flash back.  
Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).  
Vapor explosion hazard indoors, outdoors or in sewers.  
Some may polymerize (P) explosively when heated or involved in a fire.  
Runoff to sewer may create fire or explosion hazard.  
Containers may explode when heated.

Many liquids are lighter than water.  
(Toluene)

**Special Remarks on Explosion Hazards**

Dangerous fire and explosion risk. Vapor may travel considerable distance to source of ignition and flash back.

**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 tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

**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**

**Eyes** Splash goggles.

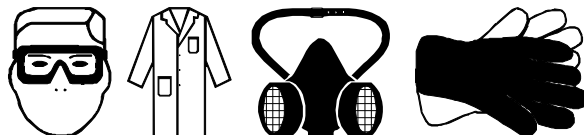
**Body** Lab coat.

**Respiratory** Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

**Hands** Gloves.

**Feet** 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**

Poly (Ethyl Methacrylate)  
Toluene

**Exposure Limits**

Not available.  
**ACGIH (United States, 1996). Skin**  
TWA: 50 ppm 8 hour(s).  
TWA: 188 mg/m<sup>3</sup>  
**NIOSH (United States, 1994).**  
TWA: 100 ppm  
STEL: 150 ppm  
TWA: 375 mg/m<sup>3</sup>  
STEL: 560 mg/m<sup>3</sup>

**OSHA (United States, 1989).**

TWA: 100 ppm  
STEL: 150 ppm  
TWA: 375 mg/m<sup>3</sup>  
STEL: 560 mg/m<sup>3</sup>

**AUVA (Austria, 1995).**

Spitzenbegrenzung: 1900 mg/m<sup>3</sup> 2 times per shift, 30 minute(s).  
Spitzenbegrenzung: 500 ppm 2 times per shift, 30 minute(s).  
TWA: 380 mg/m<sup>3</sup> 8 hour(s).  
TWA: 100 ppm 8 hour(s).

**Belgium Minister of Labour (Belgium, 1998). Skin**

VL: 191 mg/m<sup>3</sup> 8 hour(s).  
VL: 50 ppm 8 hour(s).

**BAUA (Germany, 1997).**

Spitzenbegrenzung: 760 mg/m<sup>3</sup>  
Spitzenbegrenzung: 200 ppm  
TWA: 190 mg/m<sup>3</sup> 8 hour(s).  
TWA: 50 ppm 8 hour(s).

**DK-Arbejdstyilsinet (Denmark, 1996). Skin**

GV: 94 mg/m<sup>3</sup> 8 hour(s).  
GV: 25 ppm 8 hour(s).

**Tyterveyslaitos (Finland, 1998). Skin**

STEL: 380 mg/m<sup>3</sup> 15 minute(s).  
STEL: 100 ppm 15 minute(s).  
TWA: 190 mg/m<sup>3</sup> 8 hour(s).  
TWA: 50 ppm 8 hour(s).

**INRS (France, 1996).**

VLE: 550 mg/m<sup>3</sup> 15 minute(s).  
VLE: 150 ppm 15 minute(s).  
VME: 375 mg/m<sup>3</sup> 8 hour(s).  
VME: 100 ppm 8 hour(s).

**National Authority for Occupational Safety/Health (Ireland, 1999).****Sensitizer inhalation**

STEL: 560 mg/m<sup>3</sup> 15 minute(s).  
STEL: 150 ppm 15 minute(s).  
OEL: 188 mg/m<sup>3</sup> 8 hour(s).  
OEL: 50 ppm 8 hour(s).

**Arbeidsinspectie (Netherlands, 1999).**

TGG 8 uur: 150 mg/m<sup>3</sup> 8 hour(s).  
TGG 8 uur: 40 ppm 8 hour(s).

**N-Arbejdstyilsinet (Norway, 1996). Skin**

AN: 94 mg/m<sup>3</sup> 8 hour(s).  
AN: 25 ppm 8 hour(s).

**AFS (Sweden, 1996). Skin**

KTV: 400 mg/m<sup>3</sup> 15 minute(s).  
KTV: 100 ppm 15 minute(s).  
NGV: 200 mg/m<sup>3</sup> 8 hour(s).  
NGV: 50 ppm 8 hour(s).

**EH40-OES (United Kingdom (UK), 1997). Skin**

STEL: 574 mg/m<sup>3</sup> 15 minute(s).  
STEL: 150 ppm 15 minute(s).  
TWA: 191 mg/m<sup>3</sup> 8 hour(s).  
TWA: 50 ppm 8 hour(s).

**ACGIH (United States, 1996). Skin**

TWA: 188 mg/m<sup>3</sup> 8 hour(s).

**NIOSH REL (United States, 1994).**

STEL: 560 mg/m<sup>3</sup> 15 minute(s).  
STEL: 150 ppm 15 minute(s).  
TWA: 375 mg/m<sup>3</sup> 10 hour(s).  
TWA: 100 ppm 10 hour(s).

**OSHA Final Rule (United States, 1989).**

STEL: 560 mg/m<sup>3</sup> 15 minute(s).  
STEL: 150 ppm 15 minute(s).

Buthyl Benzyl Phthalate

TWA: 375 mg/m<sup>3</sup> 8 hour(s).

TWA: 100 ppm 8 hour(s).

**OSHA Transitional Rule (United States, 1993).**

AMP: 500 ppm 10 minute(s).

CEIL: 300 ppm

TWA: 200 ppm 8 hour(s).

**TRGS900 (Germany, 1999).**TWA: 3 mg/m<sup>3</sup> 8 hour(s).**Arbejdstilsynet (Denmark, 1996).**GV: 3 mg/m<sup>3</sup> 8 hour(s).**EH40-OES (United Kingdom (UK), 2000).**TWA: 5 mg/m<sup>3</sup> 8 hour(s).**NAOSH (Ireland, 1999).**OEL: 5 mg/m<sup>3</sup> 8 hour(s).**AFS (Sweden, 1996).**NGV: 3 mg/m<sup>3</sup> 8 hour(s).**BMWA\_MAK (Austria, 2001).**STEL: 5 mg/m<sup>3</sup> 4 times per shift, 15 minute(s).TWA: 3 mg/m<sup>3</sup> 8 hour(s).**AFS (Sweden, 2000).**KTV: 5 mg/m<sup>3</sup> 15 minute(s).**AUVA (Austria, 1995).**TWA: 10 mg/m<sup>3</sup> 8 hour(s).**NOHSC (Australia, 1995).**TWA: 10 mg/m<sup>3</sup> 8 hour(s).**Lijst Grenswaarden (Belgium, 1998).**VL: 10 mg/m<sup>3</sup> 8 hour(s).**SUVA (Switzerland, 1997).**MAK: 10 mg/m<sup>3</sup> 8 hour(s). Form:**TRGS900 (Germany, 1999).**TWA: 10 mg/m<sup>3</sup> 8 hour(s). Form:**Arbejdstilsynet (Denmark, 1996).**GV: 10 mg/m<sup>3</sup> 8 hour(s).**Tyterveyslaitos (Finland, 1998).**STEL: 20 mg/m<sup>3</sup> 15 minute(s).TWA: 10 mg/m<sup>3</sup> 8 hour(s).**INRS (France, 1999).**VME: 10 mg/m<sup>3</sup> 8 hour(s).**EH40-OES (United Kingdom (UK), 2000).**TWA: 10 mg/m<sup>3</sup> 8 hour(s).**NAOSH (Ireland, 1999).**OEL: 10 mg/m<sup>3</sup> 8 hour(s).**Ministry of Labour (KR, 1997).**TWA: 10 mg/m<sup>3</sup> 8 hour(s).**Secretary of Work and Social security (MX, 1994).**CCT: 20 mg/m<sup>3</sup> 15 minute(s).CPT: 10 mg/m<sup>3</sup> 8 hour(s).**Nationale MAC-lijst (Netherlands, 2000).**TGG 8 uur: 10 mg/m<sup>3</sup> 8 hour(s).**NZ OSH (NZ, 1994).**TWA: 10 mg/m<sup>3</sup> 8 hour(s).**ACGIH TLV (United States, 2000).**TWA: 10 mg/m<sup>3</sup> 8 hour(s).**NIOSH REL (United States, 2000).**TWA: 10 mg/m<sup>3</sup> 10 hour(s).**OSHA Final Rule (United States, 1989).**TWA: 10 mg/m<sup>3</sup> 8 hour(s).

2,6-Di-tert-butyl-4-methylphenol

**Section 9. Physical and Chemical Properties**

<b>Odor</b>	Aromatic.
<b>Color</b>	Colorless.
<b>Physical State and Appearance</b>	Liquid. (Viscous liquid.)
<b>Molecular Weight</b>	Not applicable.
<b>Molecular Formula</b>	Not applicable.
<b>pH</b>	Not applicable.
<b>Boiling/Condensation Point</b>	The lowest known value is 110.5°C (230.9°F) (Toluene). Weighted average: 132.13°C (269.8°F)
<b>Melting/Freezing Point</b>	May start to solidify at <-34.95°C (-30.9°F) based on data for: Buthyl Benzyl Phthalate. Weighted average: -90.09°C (-130.2°F)
<b>Critical Temperature</b>	The lowest known value is 318.7°C (605.7°F) (Toluene).
<b>Specific Gravity</b>	Weighted average: 0.95 (Water = 1)
<b>Vapor Pressure</b>	Not available.
<b>Vapor Density</b>	The highest known value is 10.8 (Air = 1) (Buthyl Benzyl Phthalate). Weighted average: 3.78 (Air = 1)
<b>Odor Threshold</b>	The lowest known value is 2 ppm (Toluene)
<b>Evaporation Rate</b>	<0.001 (Buthyl Benzyl Phthalate) compared to (n-Butyl Acetate =1)
<b>LogK<sub>ow</sub></b>	Not available.
<b>Solubility</b>	Insoluble in water.

**Section 10. Stability and Reactivity**

<b>Stability and Reactivity</b>	The product is stable.
<b>Conditions of Instability</b>	Avoid exposure to heat and light. (2,6-Di-tert-butyl-4-methylphenol)
<b>Incompatibility with Various Substances</b>	Extremely reactive or incompatible with oxidizing agents, acids. Reactive with reducing agents.
<b>Rem/Incompatibility</b>	Avoid Heat Avoid all possible sources of ignition (spark or flame).
<b>Hazardous Decomposition Products</b>	CO <sub>x</sub>
<b>Hazardous Polymerization</b>	Will not occur.

**Section 11. Toxicological Information**

<b>RTECS Number:</b>	Poly(ethyl methacrylate/methacrylic)	Not available.
	Toluene	XS5250000
	Benzyl Butyl Phthalate	TH9990000
	2,6-di-tert-Butyl-p-Cresol	GO7875000
<b>Toxicity</b>	Acute oral toxicity (LD <sub>50</sub> ): 636 mg/kg [Rat]. (Toluene). Acute dermal toxicity (LD <sub>50</sub> ): 6700 mg/kg [Mouse]. (Buthyl Benzyl Phthalate).	
<b>Chronic Effects on Humans</b>	Contains material which may cause damage to the following organs: kidneys, liver, upper respiratory tract, central nervous system (CNS).	

**Continued on Next Page**

**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 (lung irritant). Extremely hazardous in case of ingestion. May be fatal if swallowed.

**Special Remarks on Other Toxic Effects on Humans** VAPOR HARMFUL

**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** D001

**Treatment** Incineration, fuels blending or recycle. Contact your local permitted waste disposal site (TSD) for permissible treatment sites.

**Section 14. Transport Information**

**DOT Classification** Proper Shipping Name: TOLUENE SOLUTION  
 Hazard Class: 3  
 UN number: UN1294  
 Packing Group: II  
 RQ: 1000 lbs. (453.6 kg)



**TDG Classification** Not available.

**IMO/IMDG Classification** Not available.

**ICAO/IATA Classification** Not available.

**Section 15. Regulatory Information**

**U.S. Federal Regulations** TSCA 8(b) inventory: Poly (Ethyl Methacrylate); Toluene; Butyl Benzyl Phthalate; 2,6-Di-tert-butyl-4-methylphenol  
 TSCA 8(d) H and S data reporting: Toluene: 1982

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: Toluene; Buthyl Benzyl Phthalate;  
 2,6-Di-tert-butyl-4-methylphenol  
 SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Toluene: Fire Hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard; Buthyl Benzyl Phthalate: Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard;  
 2,6-Di-tert-butyl-4-methylphenol: Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard  
 SARA 313 toxic chemical notification and release reporting: Toluene 55%  
 Clean Water Act (CWA) 307: Toluene; Buthyl Benzyl Phthalate  
 Clean Water Act (CWA) 311: Toluene  
 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-1B: Material causing immediate and serious toxic effects (TOXIC).

CEPA DSL: Poly (Ethyl Methacrylate); Toluene; Buthyl Benzyl Phthalate;  
 2,6-Di-tert-butyl-4-methylphenol

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**

Poly (Ethyl Methacrylate)	Not available.
Toluene	203-625-9
Buthyl Benzyl Phthalate	201-622-7
2,6-Di-tert-butyl-4-methylphenol	204-881-4

**DSCL (EEC)**

R11- Highly flammable.  
 R22- Harmful if swallowed.  
 R37/38- Irritating to respiratory system and skin.  
 R41- Risk of serious damage to eyes.

**International Lists**

Australia (NICNAS): Toluene; Buthyl Benzyl Phthalate; 2,6-Di-tert-butyl-4-methylphenol  
 China: Buthyl Benzyl Phthalate  
 Germany water class: Buthyl Benzyl Phthalate; 2,6-Di-tert-butyl-4-methylphenol  
 Japan (MITI): Toluene; Buthyl Benzyl Phthalate; 2,6-Di-tert-butyl-4-methylphenol  
 Korea (TCCL): Toluene; Buthyl Benzyl Phthalate; 2,6-Di-tert-butyl-4-methylphenol  
 Philippines (RA6969): Toluene; Buthyl Benzyl Phthalate; 2,6-Di-tert-butyl-4-methylphenol  
 China: Buthyl Benzyl Phthalate

**State Regulations**

Pennsylvania RTK: Toluene: (environmental hazard, generic environmental hazard); Buthyl Benzyl Phthalate: (environmental hazard, generic environmental hazard);  
 2,6-Di-tert-butyl-4-methylphenol: (generic environmental hazard)  
 Massachusetts RTK: Toluene; Buthyl Benzyl Phthalate; 2,6-Di-tert-butyl-4-methylphenol  
 New Jersey: Krystalon ^TM  
 California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Toluene  
 California prop. 65 (acceptable daily intake level): Toluene: 7000 mg/day (value), 13000 mg/day (inhalation)  
 California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Toluene



**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.*