

Prepared to OSHA, ACC, ANSI, NOHSC, WHMIS & 2001/58 EC Standards

MSDS Revision: 1.0

MSDS Revision Date: 08/01/2007

1. PRODUCT IDENTIFICATION

1.1	Product Name: ABSOLUTE PRECISION LIQUID MONOMER
1.2	Chemical Name: METHACRYLATE SOLUTION
1.3	Synonyms: NA
1.4	Trade Names: AB402, AB408, AB406, AB407, AB409
1.5	Product Use: PROFESSIONAL USE ONLY
1.6	Manufacturer's Name: OPI PRODUCTS, INC.
1.7	Manufacturer's Address: 13034 SATICOY STREET, NO. HOLLYWOOD, CA 91605 USA
1.8	Emergency Phone: CHEMTREC: +1 (703) 527-3887 / +1 (800) 424-9300
1.9	Business Phone: +1 (818) 759-2400 / +1 (800)-341-9999

2. HAZARD IDENTIFICATION

2.1	Hazard Identification: Flammable liquid. This product is classified as a hazardous substance and as dangerous goods according to the classification criteria of NOHSC and ADG Code (Australia).						
2.2	Routes of Entry:	Inhalation:	YES	Absorption:	YES	Ingestion:	YES
2.3	Effects of Exposure: INGESTION: If product is swallowed, may cause nausea, vomiting and/or diarrhea and central nervous system depression. SKIN & EYES: Moderately irritating to the eyes. Symptoms of overexposure may include redness, itching, irritation and watering. May be irritating to skin, especially after prolonged contact. The product can cause allergic skin reactions (e.g., rashes, welts, dermatitis) upon prolonged or repeated exposure. INHALATION: Vapors of this product may be moderately irritating to the nose, throat and other tissues of the respiratory system. Symptoms of overexposure can include coughing, wheezing, nasal congestion, and difficulty breathing. Inhalation of concentrated vapors can cause central nervous system depression (e.g., drowsiness, dizziness, headaches, nausea).						
2.4	Symptoms of Overexposure: Symptoms of skin overexposure may include redness, itching, and irritation of affected areas. Overexposure in eyes may cause redness, itching and watering. The product can cause allergic skin reactions (e.g., rashes, welts, dermatitis) upon prolonged or repeated exposure.						
2.5	Acute Health Effects: Moderate irritation to eyes and skin near affected areas. Additionally, high concentrations of vapors can cause drowsiness, dizziness, headaches and nausea.						
2.6	Chronic Health Effects: None known						
2.7	Target Organs: Eyes, skin & respiratory system.						

NA = Not Available; ND = Not Determined; NE = Not Established; C = Ceiling Limit; See Section 16 for Additional Definitions of Terms Used

NOTE: all WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-2004 format.

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3. COMPOSITION & INGREDIENT INFORMATION

CHEMICAL NAME(S)	CAS No.	RTECS No.	EINECS No.	%	EXPOSURE LIMITS IN AIR (mg/m ³)					
					ACGIH - ppm		OSHA - ppm			OTHER
					TLV	STEL	PEL	STEL	IDLH	
ETHYL METHACRYLATE	97-63-2	OZ4550000	202-597-5	≤ 90.0	(15)	NE	(10)	NE	NE	
GLYCOL HEMA-METHACRYLATE	97-90-5	OZ4400000	202-617-2	≤ 10.0	NA	NA	NA	NA	NA	
HEMA	868-77-9	OZ4725000	212-782-2	≤ 5.0	NA	NA	NA	NA	NA	
BENZOPHENONE	119-61-9	DI9950000	204-337-6	≤ 2.0	NA	NA	NA	NA	NA	
DIMETHYLTOLYLAMINE	99-97-8	XU5803000	202-805-4	≤ 1.0	NE	NE	NE	NE	NE	
CI 60725 (VIOLET 2)	81-48-1	CB7700000	201-353-5	≤ 1.0	NE	NE	NE	NE	NE	

4. FIRST AID MEASURES

4.1	First Aid: INGESTION: If ingested, do not induce vomiting! If product has been swallowed, drink plenty of water or milk IMMEDIATELY. If the patient is vomiting, continue to offer water or milk. Never give water or milk to an unconscious person. Contact the nearest Poison Control Center or local emergency number. Provide an estimate of the time at which the material was ingested and the amount of the substance that was swallowed. EYES: If product gets in the eyes, flush with copious amounts of lukewarm water for at least 15 minutes. Open and close eyelid(s) to ensure thorough irrigation. If problem persists, seek immediate medical attention. SKIN: If irritation occurs & product is on the skin, rinse thoroughly with lukewarm water, followed by a thorough washing of the affected area with plenty of soap and water. Do not wear contaminated clothing until after it has been properly cleaned. If irritation, redness or swelling persists, consult a physician immediately. INHALATION: Remove victim to fresh air at once. If breathing stops, perform artificial respiration at once. Seek immediate medical attention.								
4.2	Medical Conditions Aggravated by Exposure: Pre-existing dermatitis, other skin conditions, and disorders of the target organs (eyes, skin, respiratory system).	HEALTH	2	FLAMMABILITY	3	REACTIVITY	2	PROTECTIVE EQUIPMENT	B
		EYES		SKIN					

5. FIREFIGHTING MEASURES

5.1	Flashpoint & Method: 20°C (68°F)							
5.2	Autoignition Temperature: ND							
5.3	Flammability Limits:	Lower Explosive Limit (LEL):	ND	Upper Explosive Limit (UEL):	ND			
5.4	Fire & Explosion Hazards: This product is a flammable liquid. When involved in a fire, this product may ignite and decompose to form toxic gases (e.g., CO, CO₂, NO_x).							
5.5	Extinguishing Methods: HazChem Code: 3YE Hazard Identification Number: 33 Water, Foam, CO₂, Dry Chemical							
5.6	Firefighting Procedures: First responders should wear eye protection. Structural fire fighters must wear full protective equipment and MSHA/NIOSH-approved self-contained breathing apparatus. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas. If necessary, rinse contaminated equipment with soapy water before returning to service.							



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6. ACCIDENTAL RELEASE MEASURES

6.1	<p>Spills:</p> <p>Before cleaning any spill or leak, individuals involved in spill cleanup must wear appropriate Personal Protective Equipment.</p> <p>For small spills (e.g., <1 gallon) wear appropriate personal protective equipment (e.g., goggles, gloves). Maximize ventilation (open doors and windows) and secure all sources of ignition. Remove spilled material with absorbent material and place into appropriate closed container(s) for disposal. Dispose of properly in accordance with local, state and federal regulations. Wash all affected areas and outside of container with plenty of warm water and soap. Remove any contaminated clothing and wash thoroughly before reuse.</p> <p>For spills \geq 1 gallon, deny entry to all unprotected individuals. Dike and contain spill with inert material (e.g., sand or earth). Use ONLY non-sparking tools for recovery and cleanup. Transfer liquid to containers for recovery or disposal and solid diking material to separate containers for proper disposal. Remove contaminated clothing promptly and wash affected skin areas with soap and water. Keep spills and cleaning runoffs out of municipal sewers and open bodies of water.</p>
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7. HANDLING & STORAGE INFORMATION

7.1	<p>Work & Hygiene Practices:</p> <p>Avoid prolonged contact with this material. Avoid breathing the vapors generated by this product. Use in a well-ventilated location (e.g., local exhaust ventilation, fans). Wash exposed skin thoroughly with plenty of soap & water after using this product. If necessary, use a moisturizer after washing. Do not eat, drink, or smoke while handling this product.</p>
7.2	<p>Storage & Handling:</p> <p>Use and store in a cool, dry, well-ventilated location (e.g., local exhaust ventilation, fans). Keep away from excessive heat, open flames, sparks, and other possible sources of ignition. Keep away from incompatible materials listed in Section 10. Do not store in damaged or unmarked containers or storage devices. Keep containers securely closed when not in use. Open slowly on a level, stable surface. Empty containers may contain residual amounts of this product; therefore, empty containers should be handled with care. As a precaution against exposure to the eyes, nose, throat and face, this product should not be stored higher than waist level. Keep away from children at all times!</p>
7.3	<p>Special Precautions:</p> <p>NA</p>

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

8.1	<p>Ventilation & Engineering Controls:</p> <p>Use with adequate ventilation (e.g., open doors and windows, local exhaust ventilation). Ensure appropriate decontamination equipment is available (e.g., sink, safety shower, eye-wash station).</p>
8.2	<p>Respiratory Protection:</p> <p>No special respiratory protection is required under typical circumstances of use or handling. In instances where vapors or sprays of this product are generated, and respiratory protection is needed, use only protection authorized by 29 CFR §1910.134, applicable U.S. State regulations, or the Canadian CAS Standard Z94.4-93 and applicable standards of Canadian Provinces, EC member States, or Australia.</p>
8.3	<p>Eye Protection:</p> <p>Wear protective eyewear (e.g., safety glasses with side-shield) at all times when handling this product. Always use protective eyewear when cleaning spills or leaks.</p>
8.4	<p>Hand Protection:</p> <p>None required under normal conditions of use. However, may cause skin irritation in some sensitive individuals. When handling large quantities (e.g., \geq 1 gallon), wear rubber or impervious plastic gloves.</p>
8.5	<p>Body Protection:</p> <p>No apron required when handling small quantities.</p> <p>When handling large quantities (e.g., \geq 1 gallon), eye wash stations and deluge showers should be available. Upon completion of work activities involving large quantities of this product, wash any exposed areas thoroughly with soap and water.</p>

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9. PHYSICAL & CHEMICAL PROPERTIES

9.1	Density:	0.918
9.2	Boiling Point:	117 °C (243 °F)
9.3	Melting Point:	NE
9.4	Evaporation Rate:	NA
9.5	Vapor Pressure:	NA
9.6	Molecular Weight:	NE
9.7	Appearance & Color:	Blue liquid with a mild acrylic odor.
9.8	Odor Threshold:	NE
9.9	Solubility:	Slightly soluble.
9.10	pH	NA
9.11	Viscosity:	NE
9.12	Other Information:	Vapor density (air=1): > 1.0

10. STABILITY & REACTIVITY

10.1	Stability:	Relatively stable under ambient conditions when stored properly.
10.2	Hazardous Decomposition Products:	If exposed to <u>extremely high temperatures</u> , products of thermal decomposition may include irritating vapors and toxic gases (e.g., oxides of carbon & nitrogen).
10.3	Hazardous Polymerization:	May occur.
10.4	Conditions to Avoid:	Exposure or contact to extreme temperatures, incompatible chemicals, strong light sources, sparks, flame.
10.5	Incompatible Substances:	Strong oxidizers, peroxides, strong alkalis or acids.

11. TOXICOLOGICAL INFORMATION

11.1	Toxicity Data:	This product has not been tested on animals to obtain toxicological data. There are toxicology data for the components of this product, which are found in the scientific literature. These data have not been presented in this document.
11.2	Acute Toxicity:	See Section 2.5
11.3	Chronic Toxicity:	See Section 2.6
11.4	Suspected Carcinogen:	No
11.5	Reproductive Toxicity:	This product is not reported to produce reproductive toxicity in humans.
	Mutagenicity:	This product is not reported to produce mutagenic effects in humans. However, animal mutation data are available for the components of this product.
	Embryotoxicity:	This product is not reported to produce embryotoxic effects in humans.
	Teratogenicity:	This product is not reported to produce teratogenic effects in humans.
	Reproductive Toxicity:	This product is not reported to produce reproductive effects in humans.
11.6	Irritancy of Product:	See Section 2.3
11.7	Biological Exposure Indices:	NE
11.8	Physician Recommendations:	Treat symptomatically.

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12. ECOLOGICAL INFORMATION


12.1	Environmental Stability: This product will slowly volatile from soil. Components of this product will slowly decompose into organic compounds.
12.2	Effects on Plants & Animals: There is no specific data available for this product.
12.3	Effects on Aquatic Life: There is no specific data available for this product. Releases of large volumes may be harmful or fatal to overexposed aquatic life. Aquatic toxicity data for components of this product are available, but are not presented in this MSDS.

13. DISPOSAL CONSIDERATIONS

13.1	Waste Disposal: Dispose of in accordance with all Federal, state, and local regulations.
13.2	Special Considerations: U.S. EPA Characteristic Waste: D001 (flammable)

14. TRANSPORTATION INFORMATION

The basic description (ID Number, proper shipping name, hazard class & division, packing group) is shown for each mode of transportation. Additional descriptive information may be required by 49 CFR, IATA/ICAO, IMDG and the CTDGR.

14.1	49 CFR (GND): CONSUMER COMMODITY, ORM-D (x ≤ 1.0 L) UN2277, ETHYL METHACRYLATE, STABILIZED, 3, II (x > 1.0 L)	
14.2	IATA (AIR): CONSUMER COMMODITY, 9, ID8000 (x ≤ 0.5 L) UN2277, ETHYL METHACRYLATE, STABILIZED, 3, II (x > 0.5 L)	
14.3	IMDG (OCN): UN2277, ETHYL METHACRYLATE, STABILIZED, 3, II, LTD QTY (x ≤ 1.0 L) UN2277, ETHYL METHACRYLATE, STABILIZED, 3, II (x > 1.0 L)	
14.4	TDGR (Canadian GND): MARK PACKAGE "LIMITED QUANTITY" or "QUANTITÉ LIMITÉE" or "LTD QTY" or "QUANT LTÉE" (x ≤ 1.0 L) UN2277, ETHYL METHACRYLATE, STABILIZED, 3, II (x > 1.0 L)	
14.5	ADR/RID (EU): UN2277, ETHYL METHACRYLATE, STABILIZED, 3, II, ADR, LTD QTY (x ≤ 1.0 L)	
14.6	MEXICO (SCT): UN2277, ETIL METILACRILATO, STABILIZADA, 3, II, CANTIDAD LIMITADA (x ≤ 1.0 L)	

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15. REGULATORY INFORMATION

15.1 SARA Reporting Requirements:

SARA 304 (Ethyl Methacrylate) ; HEMA (CAS # 868-77-9): immediate, reactive.

15.2 SARA Threshold Planning Quantity:

NA

15.3 TSCA Inventory Status:

All components of this product are listed in the TSCA Inventory or are exempt.

15.4 CERCLA Reportable Quantity (RQ):

Ethyl Methacrylate: 1000 lbs

15.5 Other Federal Requirements:

This product complies with the appropriate sections of the Food and Drug Administration's 21 CFR Subchapter G, (Cosmetics).

15.6 Other Canadian Regulations

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDSL. None of the components of this product are listed on the Priorities Substances List (PSL). Class B2 Flammable Liquid.

15.7 State Regulatory Information:

Ingredients in this mixture on found on the following state criteria lists:**California OSHA Hazardous Substances List****Ethyl Methacrylate****Delaware Air Quality Management List****Ethyl Methacrylate****Massachusetts Hazardous Substances List****Ethyl Methacrylate****New York List of Hazardous Substances****Ethyl Methacrylate****Pennsylvania Hazardous Substances List****Ethyl Methacrylate**

15.8 67/548/EEC (European Union) Requirements:

The primary component of this product is not listed in Annex I of EU Directive 67/548/EEC:**Ethyl Methacrylate: Flammable, Irritant (F, Xi). R: 11-36/37/38-43 – Highly flammable. Irritating to eyes, respiratory system and skin. May cause sensitization by skin contact. S: 2-9-16-29-33 – Keep out the reach of children. Keep container in a well-ventilated place. Keep away from sources of ignition - No smoking. Do not empty into drains. Take precautionary measures against static discharges.**

16. OTHER INFORMATION

16.1 Other Information:

Precisely follow directions and MSDS (available through your supplier) for use. **Avoid all skin contact.** If redness or other signs of adverse reaction occur, discontinue use immediately. Use only in a well ventilated area. A ventilation system that expels vapors to the outdoors is recommended. Poisonous if swallowed! **Keep out of reach of children. FLAMMABLE!** Keep away from heat or flame. In case of emergency, contact your physician or local Poison Control Center immediately. FOR PROFESSIONAL USE ONLY.

16.2 Terms & Definitions:

See last page of this MSDS.

16.3 Disclaimer:

This Material Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR §1910.1200. Other government regulations must be reviewed for applicability to this product. To the best of ShipMate's & OPI Products' knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either expressed or implied, are provided. The information contained herein relates only to the specific product(s). If this product(s) is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

16.4 Prepared for:

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O·P·I

16.5 Prepared by:

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DEFINITION OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these that are commonly used include the following:

GENERAL INFORMATION:

CAS No.	Chemical Abstract Service Number
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EXPOSURE LIMITS IN AIR:

ACGIH	American Conference on Governmental Industrial Hygienists
TLV	Threshold Limit Value
OSHA	U.S. Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
IDLH	Immediately Dangerous to Life and Health

FIRST AID MEASURES:

CPR	Cardiopulmonary resuscitation - method in which a person whose heart has stopped receives manual chest compressions and breathing to circulate blood and provide oxygen to the body.
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HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: HMIS

HEALTH, FLAMMABILITY & REACTIVITY RATINGS:

0	Minimal Hazard
1	Slight Hazard
2	Moderate Hazard
3	Severe Hazard
4	Extreme Hazard



PERSONAL PROTECTION RATINGS:

A		G	
B		H	
C		I	
D		J	
E		K	
F		X	Consult your supervisor or S.O.P. for special handling directions.

Note: the dotted circle indicates that this respiratory protective equipment is required for high concentrations or for large volume spills or releases of product.

OTHER STANDARD ABBREVIATIONS:

NA	Not Available
NR	No Results
NE	Not Established
ND	Not Determined
ML	Maximum Limit
SCBA	Self-Contained Breathing Apparatus

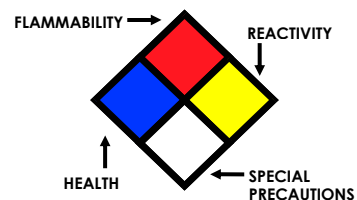
NATIONAL FIRE PROTECTION ASSOCIATION: NFPA

FLAMMABILITY LIMITS IN AIR:

Autoignition Temperature	Minimum temperature required to initiate combustion in air with no other source of ignition
LEL	Lower Explosive Limit - lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source
UEL	Upper Explosive Limit - highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source

HAZARD RATINGS:

0	Minimal Hazard
1	Slight Hazard
2	Moderate Hazard
3	Severe Hazard
4	Extreme Hazard
ACD	Acidic
ALK	Alkaline
COR	Corrosive
-W	Use No Water
OX	Oxidizer



TOXICOLOGICAL INFORMATION:

LD₅₀	Lethal Dose (solids & liquids) which kills 50% of the exposed animals
LC₅₀	Lethal concentration (gases) which kills 50% of the exposed animal
ppm	Concentration expressed in parts of material per million parts
TD₁₀	Lowest dose to cause a symptom
TCLo	Lowest concentration to cause a symptom
TD₁₀, LD₁₀, & LD₀ or TC, TC₀, LC₁₀, & LC₀	Lowest dose (or concentration) to cause lethal or toxic effects
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program
RTECS	Registry of Toxic Effects of Chemical Substances
BCF	Bioconcentration Factor
TL_m	Median threshold limit
log K_{ow} or log K_{oc}	Coefficient of Oil/Water Distribution

REGULATORY INFORMATION:

WHMIS	Canadian Workplace Hazardous Material Information System
DOT	U.S. Department of Transportation
TC	Transport Canada
EPA	U.S. Environmental Protection Agency
DSL	Canadian Domestic Substance List
NDSL	Canadian Non-Domestic Substance List
PSL	Canadian Priority Substances List
TSCA	U.S. Toxic Substance Control Act
EU	European Union (European Union Directive 67/548/EEC)

EC INFORMATION:

C	E	F	N	O	T+	Xi	Xn
Corrosive	Explosive	Flammable	Harmful	Oxidizing	Toxic	Irritant	Harmful