SAFETY DATA SHEETS

This SDS packet was issued with item:

075534656

N/A

Versacryl Acrylic Polymer MSDS 1014005,6 09-08-11.pdf
Versacryl HC Hardening Liq MSDS 1014002 12-11.pdf
Versacryl Premix Heat Cure Monomer 12-11.pdf

Versacryl Thermo-Soft Adjustable Reline Heat Cure

This unique product has been developed to create thermo-adjustable relines. Imagine having the luxury to simply heat a denture and re-adjust the fit in seconds and if it's not satisfactory the procedure can be repeated anytime by the dentist, the technician or even the patient themselves.

The Versacryl Reline is not a regular "soft reline" material. It is a heat sensitive liner that softens in warm water between 120F - 205F. At body temperature the Versacryl has an extremely comfortable cushiony effect that yields to pressure and actually creates better suction than conventional soft liners.

Versacryl is a cross-linked acrylic denture material guaranteed to create a chemical bond with all other denture acrylics. Versacryl is available in Heat Cure or Self Cure and no special equipment is needed to process.

Material Safety Data Sheet VERSACRYL ACRYLIC POLYMER

Section I - Product and Company Identification

Product Name: VERSACRYL ACRYLIC POLYMER
Chemical Name: N/A

MSDS Initial Approval Date:	07/31/2003
MSDS Prepared by:	BSQ

Family: Acrylic Polymer

Product Use: Dental Polymer

Product #: 1014005, 1014006, 1014020, 1014021, 1014022, 1014023

Manufacturer: KEYSTONE INDUSTRIES
616 Hollywood Av, Cherry Hill, NJ 08002
Emergency Phone Numbers: (800) 535-5053
Information Contacts: (856) 663-4700

Section II - Composition/Information on Ingredients

Chemical Identity	CAS Numbers	EINECS#	INCI Name	Exposure Limits OSHA TWA/STEL	Exposure Limits ACGIH TWA/STEL	Carcinogen IARC/NTP/OSHA	%
Dibenzoyl Peroxide	94-36-0	202-327-6	Benzoyl Peroxide	5 mg/m3	5 mg/m3	3/no/no	<0.2
Rayon Fiber	61788-77-0	N/E	Rayon	N/DA	N/DA	N/DA	0-1

N/E - None Established
N/R - Not Reviewed
N/DA - No Data Available
N/A - Not Applicable

Hazard Symbols: Xi
Risk Phrases: R36/37/38
Safety Phrases: S18, S22, S24/25, S38

This product is not considered hazardous by OSHA Hazard Communication Standard.

Section III - Hazards Identification

EMERGENCY OVERVIEW

This information is based on findings from related or similar materials.

- May cause allergic skin reaction.
- May cause eye irritation.
- Dust may cause irritation of the nose, throat, and lungs.
- This product may contain particulates, not otherwise classified (Nuisance Dust)

Potential Health Effects, Signs and Symptoms of Exposure:

Primary Route of Entry	Eyes or skin (No absorption); inhalation of dust.
Eye	Higher concentration can irritate eyes. May cause eye irritation or damage.
Skin	Repeated or prolonged exposure may cause allergic skin rashes.
Ingestion	Higher concentration can irritate respiratory system.
Inhalation	Possible temporary discomfort due to inhalation of dust concentration above the permissible exposure limit. Dust may cause irritation of the nose, throat, and lungs.
Sub-Chronic Effects	Effects of Acute and Chronic Over Exposure: It is not known to cause significant health problems. It is considered an inert or nuisance dust. Avoid inhalation of dust. Keep dust out of eyes to prevent possible irritation.

NOTE: Refer to Section 11, Toxicological Information for Details

Section IV - First Aid Measures

First Aid for Eye	Flush with plenty of water for 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid if symptoms persist.
First Aid for Skin	Wash throughly with soap and water. Obtain medical aid if discomfort persists.
First Aid for Inhalation	In case of exposure to a high concentration of polymer dust, remove person to fresh air. If breathing has stopped, administer artificial respiration and seek medical attention.
First Aid for Ingestion	Never give anything by mouth to an unconscious person. Get medial aid. Do NOT induce vomiting. If

conscious and alert, rinse mouth and drink 2 to 4 cupfuls of milk or water.

Section V - Fire Fighting Measures

Flash Point (°F/°C)	Flammable Limit (vol%)	Auto-ignition Temperature (vol%)
572ºF/304ºC (Tag Closed Cup)	LEL: 20 g/m^3 (dust cloud) UEL: N.A.	N/E

Method:

Extinguishing Media:	Water spray, water foam, carbon dioxide, dry chemical.
Fire Fighting Instructions:	Avoid extinguishing methods that generate dust clouds. Water streams can disperse dust into air, producing a fire hazard and possible explosion hazard. Fire-fighters should wear self - contained breathing apparatus.
Unusual Hazards:	Polymer dust is combustible but not easily ignited. The explosive limits of the polymer particles suspended in air are approximately those of coal dust.

Section VI - Accidental Release Measures

Spill or Release Procedures	Sweep up to avoid slipping hazard. Keep airborne particulates at a minimum when cleaning up spills.

Section VII - Handling and Storage

Handling	Observe precautions found on the label. Wash face and hands thoroughly with soap and water after handling and before eating, drinking or smoking. Avoid prolonged or repeated contact with skin. Avoid contamination. Use only with adequate ventilation.
Storage	Store in cool, dry place away from heat, sparks, flame and direct sunlight. Close container after each use. Ground all metal containers when transferring. Use explosion-proof equipment Store away from combustibles and incompatible materials.
Explosion Hazard	Polymer dust is combustible, explosive limits of the polymer particles suspended in air are approximately those of coal dust.

Section VIII - Exposure Controls / Personal Protective Equipment

Engineering Controls	Use good local exhaust at processing equipment, including buffers, sanders, grinders and polishers . High temperature processing equipment should be well ventilated. Use explosion-proof equipment.Provide ventilation if necessary to control exposure levels below airborne exposure limits.

Personal Protective Equipment

General	Dust collectors are recommended for handling powder in bulk. To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132), or European Standard EN166 be conducted before using this product. Provide eye wash stations and safety showers.
Eye/ Face Protection	Use safety glasses and have eye flushing equipment immediately available.
Skin Protection	Minimize contamination by following good industrial practice. Although waering gloves is an option, wearing nitrile, neoprene, pvc, latex or other impermeable gloves is recommended.
Respiratory Protection	A NIOSH/MSHA approved air purifying respirator with a minimum rating of N95 may be permissible under certain limited circumstances where airborne concentrations are expected to exceed exsposure limits. Protection provided by air purifying respirators is limited. Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepeice airline respirator in the positive pressure mode with emergency escape provisions. Follow OSHA repsirator regulations found in 29 CFR 1910.134 or

Eurpean Standard EN 149.

Section IX - Physical and Chemical Properties

Appearance	Odor & Odor Threshold	pH	Specific Gravity	Viscosity	% Volatile
Fine, white/pink powder w/ possibility of fine red fibers	Faint odor in bulk.	N/A	N/A	N/A	0.0

Boiling Point/ Freezing Point	Decomposition Temperature	Octanol/Water Partitioning Coefficient Log Po/w	Vapor Pressure:	Vapor Density	Evaporation Rate	Ignition	Solubility In Water (20°C)
N/A	392ºF/200ºC	N/A	N/A	N/A	N/A	N/A	insoluble

Flash Point (°F/°C)	Flammable Limit (vol%)	Auto-ignition Temperature (vol%)
580ºF/304ºC (Tag Closed Cup)	LEL: 20 g/m^3 (dust cloud) UEL: N.A.	N/E

Section X - Stability and Reactivity

Stability:
Stable
Hazardous Decomposition Products:
Methyl methacrylate monomers and Carbon Dioxide
Conditions to Avoid:
Heating above 200ºC/392ºF

Incompatibility (Materials to Avoid):
Strong oxidizing agents
Hazardous Polymerization:
will not occur

Section XI - Toxicological Information

Acute Oral Toxicity	Acute Dermal Toxicity	Acute Inhalation Toxicity	Irritation - skin	Irritation - Eye
N/DA	N/DA	N/DA	mild	mild

Sensitization	Mutagenicity	Sub-chronic Toxicity
N/DA	None	None

Section XII - Ecological Information

Ecotoxicological Information

Acute Toxicity to Fish	Acute Toxicity to Invertebrates	Acute Toxicity to Algae	Bioconcentration	Toxicity to Sewage Bacteria
N/DA	N/DA	N/DA	N/DA	N/DA

Chemical Fate Information

Biodegradability	N/DA
Chemical Oxygen Demand	N/DA

Section XIII - Disposal Considerations

May be disposed of in a landfill or incinerated. Follow Federal, State and Local regulations for disposal.

Section XIV - Transport Information

DOT (49 CFR 172)	
Proper Shipping Name:	Non-Regulated Material

Identification Number:	N/A
Marine Pollutant:	No
Special Provisions:	N/A
Emergency Response Guidebook (ERG) #:	**N/A**
IATA (DGR):	
Proper Shipping Name:	Non-Regulated Material
Class or Division:	N/A
UN or ID Number:	N/A
Packaging Instructions:	
Emergency Response Guidance (ICAO)#:	
IMO (IMDG):	
Proper Shipping Name:	Non-Regulated Material
Class or Division:	N/A
UN or ID Number:	N/A
Special Provisions & Stowage/Segregation:	None
Emergency Schedule (EmS)#:	
Other Information:	**Flash point > 100°C**

Section XV - Regulatory Information

US Federal Regulations

Clean Air Act: HAP/ODS	This product contains the following hazardous air pollutants (HAP's) or ozone dipleting substances (ODS's), as defined by the U. S. Clean Air Act: • NONE
Clean Water Act: Priority Pollutant	This product contains the following chemicals listed under the U.S. Clean Water Act Priority Pollutant List: • NONE
FDA: Food Packaging Status	This product has not been cleared by the FDA for use in food packaging and/ or other applications as an indirect food additive.
Occupational Safety and Health Act	This product is not considered a hazardous chemical under the OSHA Hazard Communication Standard.
RCRA	This product contains no chemicals considered to be hazardous waste under RCRA (40 CFR 261).
SARA Title III: Section 302	This product contains no chemicals regulated under Sec. 302 as extremely hazardous substances.
SARA Title III: Section 304	This product contains no chemicals regulated under Sec. 304 as extremely hazardous chemicals for emergency release notification ("CERCLA" List).
SARA Title III: Section 311-312:	This product does not contain hazardous substances under the OSHA Hazard Communication Standard, and is not regulated under Section 311-312 (40 CFR 370).
SARA Title III: Section 313:	This product contains the following chemicals outlined in SARA Title III: Section 313: • Benzoyl Peroxide CAS #94-36-0.
TSCA Section 8(b): Inventory:	This product contains chemicals listed on the TSCA inventory or otherwise complies with TSCA premanufacture notification requirements.

State Regulations

CA Right-to-Know Law:	Benzoyl Peroxide CAS #94-36-0
MA Right-to-Know Law:	Benzoyl Peroxide CAS #94-36-0
NJ Right-to-Know Law:	Benzoyl Peroxide CAS #94-36-0
PA Right-to-Know Law:	Benzoyl Peroxide CAS #94-36-0

FL Right-to-Know Law:	Benzoyl Peroxide CAS #94-36-0
MN Right-to-Know Law:	Benzoyl Peroxide CAS #94-36-0

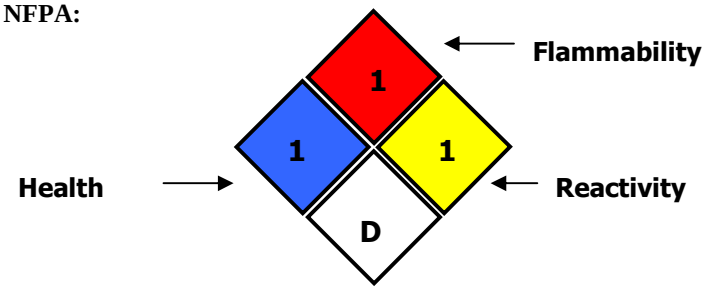
International Regulations

CDSL: Canadian Inventory (on Canadian Transitional List)	Benzoyl Peroxide CAS #94-36-0 is on the DSL list. WHMIS = C, D2B, B4
EINECS: European Inventory: 	**Versacryl Acrylic Polymer:** • HAZARD SYMBOLS: **Xi:** *Irritant* • RISK PHRASES: **R36/37/38:** *Irritating to eyes, respiratory system and skin* • SAFETY PHRASES: **S18:** *Handle and open container with care*, **S22:** *do not breath dust*, **S24/25:** *avoid contact with skin and eyes*, **S38:** *in case of insufficient ventilation, wear suitable respiratory equipment.*

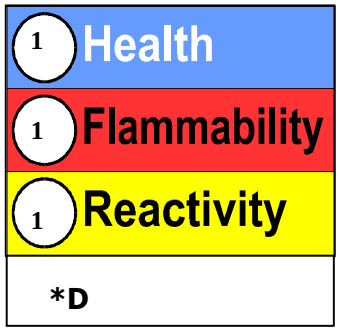
Section XVI - Other Information

Hazard Rating System (Pictograms)

NFPA:



HMIS:



* - Respiratory protection may be necessary depending on conditions of use. Refer to Section VIII of this MSDS for respiratory protection guidelines.

OSHA PEL for nuisance dust: 15 mg/m^3 (total dust)
5 mg/m^3 (respirable dust)
ACGIH PEL for nuisance dust: 10 mg/m^3

Revised Sections since Last Version:	07/31/2003 Initial Issue
	11/02/2006 Added part numbers.
	02/05/2008 Added part numbers
	09/08/2011 Added Rayon Fibers to Section II. Appearance in Section IX to include possibility of fine red fibers.

The information presented herein was obtained from sources considered to be reliable. However, this information is provided without any warranty, expressed or implied, regarding its correctness or suitability for consumers intended use and/or application. For this and other reasons, we assume no responsibility and expressly disclaim liability for loss, damage or expense arising out of any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared expressly for this product. Use the materials only as directed. If the product is used as a component of another product, the information contained within the MSDS may not be applicable. If one could have any concerns with or problems understanding this MSDS form, please direct all questions to INFOTRAC, Chemical Emergency Resources System at 1(800) 535-5053.

Material Safety Data Sheet VERSACRYL

HEAT CURE HARDENING LIQUID

Section I - Product and Company Identification

Product Name: VERSACRYL HEAT CURE HARDENING LIQUID
MSDS#: KIM121505-VHC
Chemical Name: Methacrylate monomer
MSDS Approval Date: 12/15/05 MSDS Prepared by: JRR

Family: Acrylic Monomers

Product Use: Organic Process Chemical

Product Number – 1014002, 1014012, 1014017

Manufacturer: **KEYSTONE INDUSTRIES**
616 Hollywood Ave, Cherry Hill, NJ 08002
Emergency Phone Numbers: (800) 535-5053
Information Contacts: (856) 663-4700

Section II – Composition/Information on Ingredients

Chemical Identity	CAS Numbers	EINECS#	INCI Name	Exposure Limits OSHA TWA/STEL	ACGIH TWA/STEL	Carcinogen IARC/NTP/OSHA	%
Methyl Methacrylate	80-62-6	201-297-1	N/DA	100 ppm	50 ppm/100 ppm	Group 3/no/no	>85
Ethylene Glycol Dimethacrylate	97-90-5	202-617-2	N/DA	N/E	N/E	Not Listed	<15

N/E - None Established
N/R - Not Reviewed
N/DA - No Data Available
N/A - Not Applicable

Hazard Symbols: Xi F **Risk Phrases:** R11, R36/37/38, R43 **Safety Phrases:** S9, S16, S29, S33, S36/37/39, S45

Section III - Hazards Identification

EMERGENCY OVERVIEW

This information is based on findings from related or similar materials.

- **Danger! Flammable liquid and vapor.**
- Known Sensitizer.
- May cause eye irritation.
- May cause respiratory tract irritation.

- May cause allergic skin reaction.
- Light and Air sensitive.
- Target Organs: Kidneys, central nervous system, liver.
-

Potential Health Effects, Signs and Symptoms of Exposure:

Primary Route of Entry	Inhalation , skin , eyes
Eye	Vapor concentrations may cause irritation of eyes. Liquid contact with eyes can cause irritation and possible corneal damage.
Skin	Liquid concentration may cause severe skin irritation. Repeated or prolonged contact may cause allergic skin rashes, itching and swelling which becomes evident on re-exposure to this product.
Ingestion	May cause central nervous system depression, kidney damage, and liver damage. May cause irritation, a burning sensation of the mouth, throat, respiratory tract, and abdominal pain.
Inhalation	High vapor concentrations may irritate the respiratory system. Prolonged exposure can lead to headaches, nausea, drowsiness, unconsciousness, and coma.
Sub-Chronic Effects	Prolonged or repated skin contact may cause sensitization dermatitis and possible destruction and/or ulceration. May cause reproductive and fetal effects. Repeated exposure may cause tingling in the extremitites and other nervous system abnormalities.

NOTE: Refer to Section 11, Toxicological Information for Details

Section IV - First Aid Measures

First Aid for Eye	If symptoms develop, move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 min. while holding eyelids apart. If symptoms persist or there is any visual difficulty, seek medical attention.
First Aid for Skin	Wash thoroughly with soap and water. Remove contaminated clothing. Get medical help if discomfort persists.Wash clothing before use.
First Aid for Inhalation	Remove to fresh air. If having breathing difficulty, give oxygen. If breathing has stopped, give artificial respiration. Get medical help if discomfort persists.
First Aid for Ingestion	Never give anything by mouth to an unconscious person. Get medial aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2 to 4 cupfuls of milk or water.

Section V - Fire Fighting Measures

Flash Point (°F/°C)	Flammable Limit (vol%)	Auto-ignition Temperature (vol%)
Tag Closed Cup: 51°F/10ºC	LEL: 2.12% UEL: 12.5%	815ºF/435ºC

Method:

Extinguishing Media:	Foam, Carbon Dioxide, Dry Chemical.
Fire Fighting Instructions:	Wear self-contained breathing apparatus and full protective gear. Water may be ineffective unless used as a fine spray or fog. Use water spray to cool the exposed containers of methacrylate monomer.
Unusual Hazards:	Vapors may travel to source of ignition and flash back. Avoid ignition sources or excessive temperatures .Heat can induce polymerization with rapid release of energy. Closed containers may rupture explosively. Spontaneous polymerization may occur on prolonged aging.

Section VI - Accidental Release Measures

Spill or Release Procedures	Eliminate all sources of heat and ignition. Use absorbent material for spills and dike it, wash spill material into retaining containers. Place containers in a well ventilated area. Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as sawdust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802. If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures.

Section VII - Handling and Storage

Handling	Keep away from heat, sparks, flames and other sources of ignition. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use with adequate ventilation. Ground all metal containers when transferring and use explosion-proof equipment. Follow all MSDS/label precautions even after the container is emptied because it may retain product residues. Wash thoroughly after handling.

Storage	Store in a cool, dry area. Keep container closed when not in use. Store at ambient temperatures out of direct sunlight. Store in a well ventilated place. Store in accordance with National Fire Protection Association recommendations. Maintain air space inside storage containers. Inhibitor requires air (oxygen) contact to function. Check inhibitor levels after 3 months and return to original level.
Explosion Hazard	Avoid ignition sources or excessive temperatures. Heat can induce polymerization with rapid release of energy. Closed containers may rupture explosively. Spontaneous polymerization may occur on prolonged aging.

Section VIII - Exposure Controls / Personal Protective Equipment

Engineering Controls	Facilities storing or ultilizing this material should be equipped with an eye facility and safety shower. Use process enclosures local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment. **Methyl methacrylate: IDLH = 1000 ppm via NIOSH standards.**

Personal Protective Equipment

General	To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132), or European Standard EN166 be conducted before using this product . Provide eye wash stations and safety showers. Wear impervious clothing to prevent ANY contact with this product, such as gloves, apron, boots, or whole body suit. Nitrile rubber is better than PVC.
Eye/ Face Protection	Wear safety glasses. Wear coverall chemical splash goggles and face shield when possibility exists for eye and face contact due to splashing or spraying material.
Skin Protection	Use impermeable clothing to prevent ANY contact with this product, such as gloves, apron, boots, or whole body suit. Nitrile rubber is better than PVC.
Respiratory Protection	A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain limited circumstances where airborne concentrations are expected to exceed exsposure limits. Protection provided by air purifying respirators is limited. Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepeice airline respirator in the positive pressure mode with emergency escape provisions. Follow OSHA repsirator regulations found in 29 CFR 1910.134 or Eurpean Standard EN 149.

Section IX - Physical and Chemical Properties

Appearance	Odor & Odor Threshold	pH	Specific Gravity	Viscosity	% Volatile
Clear, pale blue liquid	Acrid, fruity OT = N/D	N/D	(H20=1): 0.94	N/DA, mPas @ 20ºC	W/W %: 99+

Boiling Point/ Freezing Point	Decomposition Temperature	Octanol/Water Partitioning Coefficient Log Po/w	Vapor Pressure:	Vapor Density	Evaporation Rate	Ignition	Solubility In Water (20°C)
214ºF/101ºC N/DA	N/A	N/DA	mm Hg : 29 @ 20ºC	(Air =1): 3.5	(Butyl Acetate= 1): 3.0	N/DA	Moderate, 1.6gm/100gm @20ºC

Flash Point (°F/°C)	Flammable Limit (vol%)	Auto-ignition Temperature (vol%)
Tag Closed Cup: 68°F/20ºC	LEL: 2.0% UEL: 12.5%	790ºF/421ºC

Section X - Stability and Reactivity

Stability:
Stable

Incompatibility (Materials to Avoid):
Reducing and oxidizing agents and UV light.

Hazardous Decomposition Products:
Oxides of carbon when burned.

Hazardous Polymerization:
May occur

Conditions to Avoid:
Temperatures above 40ºC, oxidizing or reducing agents, peroxides and amines, storage in absence of inhibitor, and inadvertent addition of catalyst. Avoid aging and contamination.

Section XI - Toxicological Information

Acute Oral Toxicity	Acute Dermal Toxicity	Acute Inhalation Toxicity	Irritation - skin	Irritation - Eye
Oral(Rat) LD50: 7872 mg/kg	Dermal (Rabbit) LD50: 9400mg/kg	Inhalation (Rat) LC50 3750ppm	N/DA	N/DA

Sensitization	Mutagenicity	Sub-chronic Toxicity
N/DA	N/DA	N/DA

Section XII - Ecological Information

Ecotoxicological Information

Acute Toxicity to Fish	Acute Toxicity to Invertebrates	Acute Toxicity to Algae	Bioconcentration	Toxicity to Sewage Bacteria
96 hour LC50: fathead minnows: 150 ppm bluegill sunfish; 232 ppm	N/DA	N/DA	N/DA	N/DA

Chemical Fate Information

Biodegradability	N/DA
Chemical Oxygen Demand	N/DA

Section XIII - Disposal Considerations

Dispose of diking materials and absorbent in compliance with State, Local, and Federal regulations. Residual vapors may explode on ignition; do not cut, drill, or weld on or near the container. Mix with compatible chemical which is less flammable and incinerate.

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section XIV - Transport Information

DOT (49 CFR 172)	
Proper Shipping Name:	Flammable liquids, n.o.s., (methyl methacrylate, ethylene glycol dimethacrylate), 3, UN1993, PGII
Identification Number:	UN1993
Marine Pollutant:	No
Special Provisions:	T8, T31
Emergency Response Guidebook (ERG) #:	**128**
IATA (DGR):	
Proper Shipping Name:	Flammable liquids, n.o.s., (methyl methacrylate, ethylene glycol dimethacrylate), 3, UN1993, PGII

Class or Division:	3
UN or ID Number:	UN1993
Packaging Instructions:	
Emergency Response Guidance (ICAO)#:	**3L**
IMO (IMDG):	
Proper Shipping Name:	Flammable liquids, n.o.s., (methyl methacrylate, ethylene glycol dimethacrylate), 3, UN1993, PGII
Class or Division:	3.2
UN or ID Number:	UN1993
Special Provisions & Stowage/Segregation:	None
Emergency Schedule (EmS)#:	
Other Information:	**Flash point = 20°C**

Section XV - Regulatory Information

US Federal Regulations

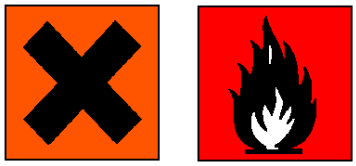
Clean Air Act: HAP/ODS	This product contains the following hazardous air pollutants (HAP) as defined by the U.S. Clean Air Act: • Methyl methacrylate, CAS# 80-62-6 This product contains no Class 1 or Class 2 ODS.
Clean Water Act: Priority Pollutant/Hazardous Substance	This product contains the following Hazardous Substances as defined by the CWA: • Methyl methacrylate, CAS# 80-62-6 This product does not contain any substances that are a Priority Pollutant or Toxic Pollutant under the CWA.
FDA: Food Packaging Status	This product has not been cleared by the FDA for use in food packaging and/or other applications as an indirect food additive.
Occupational Safety and Health Act	This product is considered to be a hazardous chemical under the OSHA Hazard Communication Standard. Its hazards are: • Immediate (acute) health hazard • Fire hazard • Reactive hazard
RCRA	This product contains chemicals considered to be hazardous waste under RCRA (40 CFR 261): • Methyl methacrylate CAS# 80-62-6, RCRA Code U162 • Characteristic of Ignitablility: RCRA Code: D001
SARA Title III: Section 302 (TPQ)	This product contains no chemicals regulated under Sec. 302 as extremely hazardous substances that carry a TPQ.
SARA Title III: Section 302 (RQ)	This product contains chemicals regulated under Section 302 as extremely hazardous chemicals for emergency release notification ("CERCLA" List): • Methyl methacrylate CAS# 80-62-6, RQ(Lbs): 1000
SARA Title III: Section 311-312:	This product is considered hazardous under the OSHA Hazard Communication Standard and is regulated under Section 311-312 (40 CFR 370). Its hazards are: • Immediate (acute) health • Fire hazard • Delayed (chronic) health • Reactive hazard

SARA Title III: Section 313:	This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372: • Methyl methacrylate, CAS# 80-62-6
TSCA Section 8(b): Inventory:	This product contains chemicals that are on the TSCA list.

State Regulations

CA Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6 California No Significant Risk Level: None of the chemicals in this product are listed.
MA Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6
NJ Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6
PA Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6
FL Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6
MN Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6

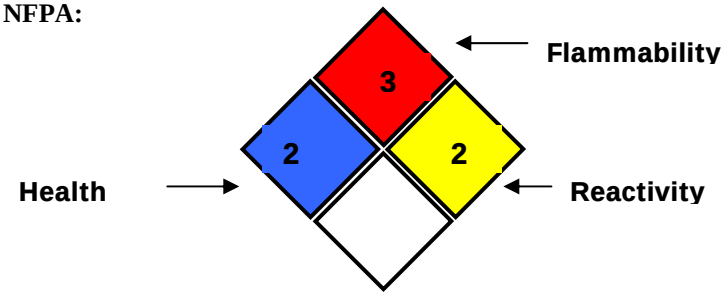
International Regulations

CDSL: Canadian Inventory (on Canadian Transitional List)	Methyl methacrylate, CAS# 80-62-6 is on the DSL List. WHMIS = B2, D2B. Ethylene glycol dimethacrylate, CAS# 97-90-5 is on the DSL List. WHMIS = n/da
EINECS: European Inventory: 	**Versacryl Liquid 'B' Heat Cure Monomer:** • HAZARD SYMBOLS: **Xi, F:** *Irritant, Highly Flammable* • RISK PHRASES: **R11:** *highly flammable*, **R36/37/38:** *Irritating to eyes, respiratory system and skin*, **R43:** *May cause sensitization by skin contact* • SAFETY PHRASES: **S9:** *keep container in a well ventilated place*, **S16:** *keep away from sources of ignition- no smoking*, **S29:** *do not empty into drains*, **S33:** *take precautionary measures against static discharges*, **S36/37/39:** *wear suitable protective clothing, gloves and eye/face protection*, **S45:** *In case of accident or if you feel unwell, seek medical advise immediately (show the label where possible)*

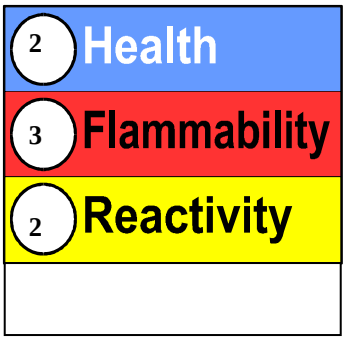
Section XVI - Other Information

Hazard Rating System (Pictograms)

NFPA:



HMIS:



Material Safety Data Sheet VERSACRYL

HEAT CURE HARDENING LIQUID

Revision Date:	Feb 5, 2008
Revised Sections since Last Version:	Heading, MSDS name changed from Liquid B to Hardening Liquid, Product Numbers added.
12/19/11 Review date	No content changes made

The information presented herein was obtained from sources considered to be reliable. However, this information is provided without any warranty, expressed or implied, regarding its correctness or suitability for consumers intended use and/or application. For this and other reasons, we assume no responsibility and expressly disclaim liability for loss, damage or expense arising out of any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared expressly for this product. Use the materials only as directed. If the product is used as a component of another product, the information contained within the MSDS may not be applicable. If one could have any concerns with or problems understanding this MSDS form, please direct all questions to INFOTRAC, Chemical Emergency Resources System at 1(800) 535-5053.

Material Safety Data Sheet VERSACRYL PREMIX

HEAT CURE MONOMER

Section I - Product and Company Identification

Product Name: VERSACRYL PREMIX HEAT CURE MONOMER
MSDS#: KIM071103-VRH
Chemical Name: Plasticized methacrylate monomer

MSDS Approval Date: 2/4/2004
MSDS Prepared by: BSQ

Family: Acrylic Monomers

Product Use: Organic Process Chemical

Product #: 1014004, 1014014, 1014019

Manufacturer: KEYSTONE INDUSTRIES
616 Hollywood Ave, Cherry Hill, NJ 08002
Emergency Phone Numbers: (800) 535-5053
Information Contacts: (856) 663-4700

Section II – Composition/Information on Ingredients

Chemical Identity	CAS Numbers	EINECS#	INCI Name	Exposure Limits OSHA TWA/STEL	Exposure Limits ACGIH TWA/STEL	Carcinogen IARC/NTP/OSHA	%
Methyl Methacrylate	80-62-6	201-297-1	N/DA	100 ppm	50 ppm/100 ppm	Group 3/no/no	<40
Dibutyl Phthalate	84-74-2	201-557-4	Dibutyl phthalate	5 mg/m^3	N/E	Not Listed	<30
Dioctyl Phthalate	117-81-7	204-211-0	Diethylhexyl phthalate	5 mg/m^3	5 mg/m^3	Group 3/Suspect/ Possible Select	<25
n-Butyl Methacrylate	97-88-1	202-615-1	Butyl Methacrylate	N/E	N/E	Not listed	<5
Ethylene Glycol Dimethacrylate	97-90-5	202-617-2	N/DA	N/E	N/E	Not Listed	<5

N/E - None Established
N/R - Not Reviewed
N/DA - No Data Available
N/A - Not Applicable

Hazard Symbols: Xn F
Risk Phrases: R11, R36/37/38, R40, R43
Safety Phrases: S2, S9, S16, S24/25, S29, S36/37/39, S45

Section III - Hazards Identification

EMERGENCY OVERVIEW

This information is based on findings from related or similar materials.

- **Danger! Flammable liquid and vapor.**
- Known Sensitizer.
- May cause eye irritation.
- May cause respiratory tract irritation.

- May cause allergic skin reaction.
- Light and Air sensitive.
- Target Organs: Kidneys, central nervous system, liver.
- Possible cancer hazard, read MSDS for further details.

Potential Health Effects, Signs and Symptoms of Exposure:

Primary Route of Entry	Inhalation , skin , eyes
Eye	Vapor concentrations may cause irritation of eyes. Liquid contact with eyes can cause irritation and possible corneal damage.
Skin	Liquid concentration may cause severe skin irritation. Repeated or prolonged contact may cause allergic skin rashes, itching and swelling which becomes evident on re-exposure to this product.
Ingestion	May cause central nervous system depression, kidney damage, and liver damage. May cause irritation, a burning sensation of the mouth, throat, respiratory tract, and abdominal pain.
Inhalation	High vapor concentrations may irritate the respiratory system. Prolonged exposure can lead to headaches, nausea, drowsiness, unconsciousness, and coma.
Sub-Chronic Effects (mixture)	Prolonged or repated skin contact may cause sensitization dermatitis and possible destruction and/or ulceration. May cause reproductive and fetal effects. Repeated exposure may cause tingling in the extremitites and other nervous system abnormalities.
Chronic Effects, Dioctyl Phthalate (DEHP)	DEHP toxicity appears to be a high-dose phenomenon readily demonstrable in some, but not all rodent species and strains. Liver toxicity, so characteristic of rodent responses to DEHP, appears to be irrelevant to humans. The carcinogenic response of DEHP has been demonstrated only in one strain of rat and mouse and does not appear to be a feature of toxicity in higher order mammals, especially humans. Reproductive and developmental toxicity, likewise, appears to be limited to high-dose effects seen in rodent testing. The relevance to human testing has not been established.

NOTE: Refer to Section 11, Toxicological Information for Details

Section IV - First Aid Measures

First Aid for Eye	If symptoms develop, move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 min. while holding eyelids apart. If symptoms persist or there is any visual difficulty, seek medical attention.
First Aid for Skin	Wash thoroughly with soap and water. Remove contaminated clothing. Get medical help if discomfort persists.Wash clothing before use.
First Aid for Inhalation	Remove to fresh air. If having breathing difficulty, give oxygen. If breathing has stopped, give artificial respiration. Get medical help if discomfort persists.
First Aid for Ingestion	Never give anything by mouth to an unconscious person. Get medial aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2 to 4 cupfuls of milk or water.

Section V - Fire Fighting Measures

Flash Point (°F/°C)	Flammable Limit (vol%)	Auto-ignition Temperature (vol%)
Tag Closed Cup: 51°F/10ºC	LEL: 2.12% UEL: 12.5%	815ºF/435ºC

Method:

Extinguishing Media:	Foam, Carbon Dioxide, Dry Chemical.
Fire Fighting Instructions:	Wear self-contained breathing apparatus and full protective gear. Water may be ineffective unless used as a fine spray or fog. Use water spray to cool the exposed containers of methacrylate monomer.
Unusual Hazards:	Vapors may travel to source of ignition and flash back. Avoid ignition sources or excessive temperatures .Heat can induce polymerization with rapid release of energy. Closed containers may rupture explosively. Spontaneous polymerization may occur on prolonged aging.

Section VI - Accidental Release Measures

Spill or Release Procedures	Eliminate all sources of heat and ignition. Use absorbent material for spills and dike it, wash spill material into retaining containers. Place containers in a well ventilated area. Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as sawdust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802. If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures.

Section VII - Handling and Storage

Handling	Keep away from heat, sparks, flames and other sources of ignition. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use with adequate ventilation. Ground all metal containers when transferring and use explosion-proof equipment. Follow all MSDS/label precautions even after the container is emptied because it may retain product residues. Wash thoroughly after handling.
Storage	Store in a cool, dry area. Keep container closed when not in use. Store at ambient temperatures out of direct sunlight. Store in a well ventilated place. Store in accordance with National Fire Protection Association recommendations. Maintain air space inside storage containers. Inhibitor requires air (oxygen) contact to function. Check inhibitor levels after 3 months and return to original level.
Explosion Hazard	Avoid ignition sources or excessive temperatures. Heat can induce polymerization with rapid release of energy. Closed containers may rupture explosively. Spontaneous polymerization may occur on prolonged aging.

Section VIII - Exposure Controls / Personal Protective Equipment

Engineering Controls: Facilities storing or ultilizing this material should be equipped with an eye facility and safety shower. Use process enclosures local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment.
Methyl methacrylate: IDLH = 1000 ppm via NIOSH standards.
Dibutyl Phthalate: IDLH = 4000 mg/m^3 via NIOSH standards.

Personal Protective Equipment

General: To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132), or European Standard EN166 be conducted before using this product . Provide eye wash stations and safety showers. Wear impervious clothing to prevent ANY contact with this product, such as gloves, apron, boots, or whole body suit. Nitrile rubber is better than PVC.

Eye/ Face Protection: Wear safety glasses. Wear coverall chemical splash goggles and face shield when possibility exists for eye and face contact due to splashing or spraying material.

Skin Protection: Use impermeable clothing to prevent ANY contact with this product, such as gloves, apron, boots, or whole body suit. Nitrile rubber is better than PVC.

Respiratory Protection: A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain limited circumstances where airborne concentrations are expected to exceed exsposure limits. Protection provided by air purifying respirators is limited. Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepeice airline respirator in the positive pressure mode with emergency escape provisions. Follow OSHA repsirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

Section IX - Physical and Chemical Properties

Appearance	Odor & Odor Threshold	pH	Specific Gravity	Viscosity	% Volatile
Clear, pale blue liquid	Acrid, fruity OT = N/D	N/D	(H20=1): 0.94	Like water	W/W %: 99+

Boiling Point/ Freezing Point	Decomposition Temperature	Octanol/Water Partitioning Coefficient Log Po/w	Vapor Pressure:	Vapor Density	Evaporation Rate	Ignition	Solubility In Water (20°C)
214ºF/101ºC N/DA	N/A	N/DA	mm Hg : 29 @ 20ºC	(Air =1): 3.5	(Butyl Acetate= 1): 3.0	N/DA	Moderate, 1.6gm/100gm @20ºC

Flash Point (°F/°C)	Flammable Limit (vol%)	Auto-ignition Temperature (vol%)
Tag Closed Cup: 68°F/20ºC	LEL: 2.0% UEL: 12.5%	790ºF/421ºC

Section X - Stability and Reactivity

Stability:
Stable

Incompatibility (Materials to Avoid):
Reducing and oxidizing agents and UV light.

Hazardous Decomposition Products:
Oxides of carbon when burned.

Hazardous Polymerization:
May occur

Conditions to Avoid:
Temperatures above 40ºC, oxidizing or reducing agents, peroxides and amines, storage in absence of inhibitor, and inadvertent addition of catalyst. Avoid aging and contamination.

Section XI - Toxicological Information

Acute Oral Toxicity	Acute Dermal Toxicity	Acute Inhalation Toxicity	Irritation - skin	Irritation - Eye
Oral(Rat) LD50: 2297gm/kg (mixture)	Dermal (rabbit) LD50: 8125mg/kg (mixture)	Inhalation (Rat) LC50 >12,500 to 16,500ppm for 0.5 hours (MMA)	N/DA	Slight

Sensitization	Mutagenicity	Sub-chronic Toxicity
N/DA	Hamster, ovary, fibroblast, oral(cytogenetic analysis): 887 mg/l (mixture)	N/DA

Section XII - Ecological Information

Ecotoxicological Information

Acute Toxicity to Fish	Acute Toxicity to Invertebrates	Acute Toxicity to Algae	Bioconcentration	Toxicity to Sewage Bacteria
96 hour LC50 (mixture): fathead minnows:100-1000 ppm goldfish: 58 ppm	N/DA	N/DA	N/DA	N/DA

Chemical Fate Information

Biodegradability	N/DA
Chemical Oxygen Demand	N/DA

Section XIII - Disposal Considerations

Dispose of diking materials and absorbent in compliance with State, Local, and Federal regulations. Residual vapors may explode on ignition; do not cut, drill, or weld on or near the container. Mix with compatible chemical which is less flammable and incinerate.

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section XIV - Transport Information

DOT (49 CFR 172)	
Proper Shipping Name:	Flammable liquids, n.o.s., (methyl methacrylate, dibutyl phthalate), 3, UN1993, PGII
Identification Number:	UN1993
Marine Pollutant:	No
Special Provisions:	T8, T31
Emergency Response Guidebook (ERG) #:	**128**
IATA (DGR):	
Proper Shipping Name:	Flammable liquids, n.o.s., (methyl methacrylate, dibutyl phthalate), 3, UN1993, PGII
Class or Division:	3
UN or ID Number:	UN1993
Packaging Instructions:	
Emergency Response Guidance (ICAO)#:	**3L**
IMO (IMDG):	
Proper Shipping Name:	Flammable liquids, n.o.s., (methyl methacrylate, dibutyl phthalate), 3, UN1993, PGII
Class or Division:	3.2
UN or ID Number:	UN1993
Special Provisions & Stowage/Segregation:	None

Emergency Schedule (EmS)#:	
Other Information:	**Flash point = 10°C**

Section XV - Regulatory Information

US Federal Regulations

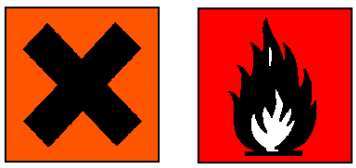
Clean Air Act: HAP/ODS	This product contains the following hazardous air pollutants (HAP) as defined by the U.S. Clean Air Act: • Methyl methacrylate, CAS# 80-62-6 • Dibutyl phthalate, CAS# 84-74-2 • Dioctyl phthalate, CAS# 117-81-7 This product contains no Class 1 or Class 2 ODS.
Clean Water Act: Priority Pollutant/Hazardous Substance	This product contains the following Hazardous Substances as defined by the CWA: • Methyl methacrylate, CAS# 80-62-6 • Dibutyl phthalate, CAS# 84-74-2 This product contains the following substances that are a Priority Pollutant: • Dioctyl phthalate, CAS# 117-81-7. This product does not contain any substances that are a Toxic Pollutant under the CWA.
FDA: Food Packaging Status	This product has not been cleared by the FDA for use in food packaging and/or other applications as an indirect food additive.
Occupational Safety and Health Act	This product is considered to be a hazardous chemical under the OSHA Hazard Communication Standard. Its hazards are: • Immediate (acute) health hazard • Fire hazard • Chronic (delayed) health hazard
RCRA	This product contains chemicals considered to be hazardous waste under RCRA (40 CFR 261): • Methyl methacrylate CAS# 80-62-6, RCRA Code U162 • Dibutyl phthalate, CAS# 84-74-2, RCRA Code U069 • Dioctyl phthalate, CAS# 117-81-7, RCRA Code U028 • Characteristic of Ignitablility: RCRA Code: D001
SARA Title III: Section 302 (TPQ)	This product contains no chemicals regulated under Sec. 302 as extremely hazardous substances that carry a TPQ.
SARA Title III: Section 302 (RQ)	This product contains chemicals regulated under Section 302 as extremely hazardous chemicals for emergency release notification ("CERCLA" List): • Methyl methacrylate CAS# 80-62-6, RQ(Lbs): 1000 • Dibutyl phthalate, CAS# 84-74-2, RQ(Lbs): 10 • Dioctyl phthalate, CAS# 117-81-7, RQ(Lbs): 100
SARA Title III: Section 311-312:	This product is considered hazardous under the OSHA Hazard Communication Standard and is regulated under Section 311-312 (40 CFR 370). Its hazards are: • Immediate (acute) health • Fire hazard • Delayed (chronic) health hazard
SARA Title III: Section 313:	This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372: • Methyl methacrylate, CAS# 80-62-6 • Dibutyl phthalate, CAS# 84-74-2 • Dioctyl phthalate, CAS# 117-81-7

TSCA Section 8(b): Inventory: TSCA Significant New Use Rule:	This product contains chemicals that are on the TSCA list. None of the chemicals in this material have a SNUR under TSCA.

State Regulations

CA Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6, Dibutyl phthalate, CAS# 84-74-2, Dioctyl phthalate, CAS# 117-81-7 California No Significant Risk Level: Dioctyl phthalate, CAS# 117-81-7 = 80 µg/day California Safe Drinking Water Act: **The following statement(s) is(are) made in order to comply with the CSWDA:** WARNING: This product contains Dioctyl Phthalate, a chemical known to the state of California to cause cancer.
MA Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6, Dibutyl phthalate, CAS# 84-74-2, Dioctyl phthalate, CAS# 117-81-7, Butyl methacrylate, CAS# 97-88-1
NJ Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6, Dibutyl phthalate, CAS# 84-74-2, Dioctyl phthalate, CAS# 117-81-7, Butyl methacrylate, CAS# 97-88-1
PA Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6, Dibutyl phthalate, CAS# 84-74-2, Dioctyl phthalate, CAS# 117-81-7, Butyl methacrylate, CAS# 97-88-1
FL Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6, Dibutyl phthalate, CAS# 84-74-2, Dioctyl phthalate, CAS# 117-81-7, Butyl methacrylate, CAS# 97-88-1
MN Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6, Dibutyl phthalate, CAS# 84-74-2, Dioctyl phthalate, CAS# 117-81-7

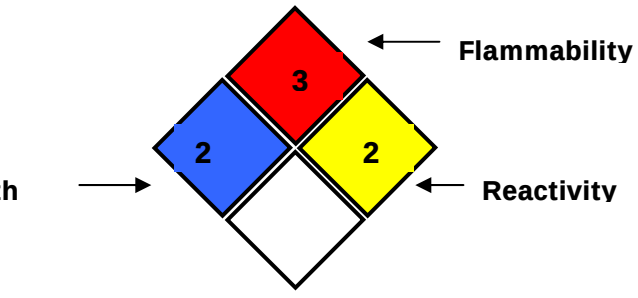
International Regulations

CDSL: Canadian Inventory (on Canadian Transitional List)	Methyl methacrylate, CAS# 80-62-6 is on the DSL List. WHMIS = B2, D2B. Dibutyl phthalate, CAS# 84-74-2 is on the DSL List. WHMIS = D2B Dioctyl phthalate, CAS# 117-81-7 is on the DSL List. WHMIS = D2A Butyl Methacrylate, CAS# 97-88-1 is on the DSL List. WHMIS = B2, D2A, F Ethylene glycol dimethacrylate, CAS# 97-90-5 is on the DSL List. WHMIS = n/da
EINECS: European Inventory: 	**Versacryl Reline Heat Cure Monomer:** • HAZARD SYMBOLS: **Xn, F:** *Harmful, Highly Flammable* • RISK PHRASES: **R11:** *highly flammable,* **R36/37/38:** *Irritating to eyes, respiratory system and skin,* **R40:** *Possible risks of irreversible effects,* **R43:** *May cause sensitization by skin contact* • SAFETY PHRASES: **S2:** *Keep out of the reach of children,* **S9:** *keep container in a well ventilated place,* **S16:** *keep away from sources of ignition- no smoking,* **S24/25:** *Avoid contact with skin & eyes,* **29:** *do not empty into drains,* **S36/37/39:** *wear suitable protective clothing, gloves and eye/face protection,* **S45:** *In case of accident or if you feel unwell, seek medical advise immediately (show the label where possible)*

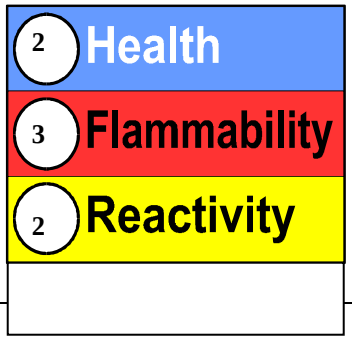
Section XVI - Other Information

Hazard Rating System (Pictograms)

NFPA:



HMIS:



*- Gloves and Safety Glasses or Chemical Splash Goggles

Revised Sections since Last Version:	Heading, MSDS name changed from Reline to Premix. Product numbers added.
12/14/11 Review Date	No content changes made

The information presented herein was obtained from sources considered to be reliable. However, this information is provided without any warranty, expressed or implied, regarding its correctness or suitability for consumers intended use and/or application. For this and other reasons, we assume no responsibility and expressly disclaim liability for loss, damage or expense arising out of any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared expressly for this product. Use the materials only as directed. If the product is used as a component of another product, the information contained within the MSDS may not be applicable. If one could have any concerns with or problems understanding this MSDS form, please direct all questions to INFOTRAC, Chemical Emergency Resources System at 1(800) 535-5053.

SAFETY DATA SHEET

Versacryl Hardener Heat Cure

Section 1. Identification

GHS product identifier : Versacryl Hardener Heat Cure

Other means of identification : Not available.

Product code : 1014012, 1014017, 1014002

Product type : Liquid.

Product use : Dental Products

Relevant identified uses of the substance or mixture and uses advised against

Not applicable.

Supplier's details : Keystone Industries
52 West King Street
Myerstown, PA 17067
(856) 663-4700

Emergency telephone number (with hours of operation) : (800) 535-5053

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
SKIN IRRITATION - Category 2
SKIN SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Highly flammable liquid and vapor.
Causes skin irritation.
May cause an allergic skin reaction.
May cause respiratory irritation.

Precautionary statements

Prevention : Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Section 2. Hazards identification

Response : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.

May contain one or more of the following components in quantities considered hazardous:

Ingredient name	CAS number	EC number	%
methyl methacrylate	80-62-6	201-297-1	≥90
Ethylene glycol dimethacrylate	97-90-5	202-617-2	≤10

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person.

Section 4. First aid measures

If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : May cause respiratory irritation.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
redness
irritation

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Section 5. Fire-fighting measures

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
methyl methacrylate	**ACGIH TLV (United States, 3/2016). Skin sensitizer.** TWA: 50 ppm 8 hours. STEL: 100 ppm 15 minutes. **OSHA PEL 1989 (United States, 3/1989).** TWA: 100 ppm 8 hours. TWA: 410 mg/m³ 8 hours. **NIOSH REL (United States, 10/2013).** TWA: 100 ppm 10 hours. TWA: 410 mg/m³ 10 hours. **OSHA PEL (United States, 2/2013).** TWA: 100 ppm 8 hours. TWA: 410 mg/m³ 8 hours.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Section 8. Exposure controls/personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Clear, pale blue

Odor : Acrid, fruity

pH : Not available.

Melting point : Not available.

Boiling point : 101.11°C (214°F)

Flash point : Closed cup: 10°C (50°F) [Tagliabue.]

Evaporation rate : 3 (butyl acetate = 1)

Flammability (solid, gas) : Highly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat and shocks and mechanical impacts.

Lower and upper explosive (flammable) limits : Lower: 2%
Upper: 12.5%

Vapor pressure : 3.9 kPa (29 mm Hg) [room temperature]

Vapor density : 3.5 [Air = 1]

Relative density : 0.94

Solubility : Partially soluble in the following materials: cold water and hot water.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : 421.11°C (790°F)

Viscosity : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Hazardous reactions or instability may occur under certain conditions of storage or use.

Section 10. Stability and reactivity

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

Incompatible materials : Reactive or incompatible with the following materials:
oxidizing materials

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
methyl methacrylate	LC50 Inhalation Vapor	Rat	78000 mg/m³	4 hours
	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	7872 mg/kg	-
Ethylene glycol dimethacrylate	LD50 Oral	Rat	3300 mg/kg	-

Classification

Product/ingredient name	OSHA	IARC	NTP
methyl methacrylate	-	3	-

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
methyl methacrylate	Category 3	Not applicable.	Respiratory tract irritation
Ethylene glycol dimethacrylate	Category 3	Not applicable.	Respiratory tract irritation

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : May cause respiratory irritation.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
redness
irritation

Section 11. Toxicological information

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	65281.9 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
methyl methacrylate	Acute LC50 130000 µg/l Fresh water	Fish - Pimephales promelas - Adult	96 hours

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
methyl methacrylate	1.38	-	low
Ethylene glycol dimethacrylate	1.87	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Methyl methacrylate (I,T); 2-Propenoic acid, 2-methyl-, methyl ester (I,T)	80-62-6	Listed	U162

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	UN1993	UN1993	UN1993	UN1993	UN1993	UN1993
UN proper shipping name	FLAMMABLE LIQUID, N.O.S. (methyl methacrylate)	FLAMMABLE LIQUID, N.O.S. (methyl methacrylate)	FLAMMABLE LIQUID, N.O.S. (methyl methacrylate)	FLAMMABLE LIQUID, N.O.S. (methyl methacrylate)	FLAMMABLE LIQUID, N.O.S. (methyl methacrylate)	FLAMMABLE LIQUID, N.O.S. (methyl methacrylate)
Transport hazard class(es)	3 	3 	3 	3 	3 	3 
Packing group	II	II	II	II	II	II
Environmental hazards	No.	No.	No.	No.	No.	No.
Additional information	**Reportable quantity** 1053.6 lbs / 478.33 kg [134.43 gal / 508.86 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity)	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3).	-	**Special provisions** 640 (C) **Tunnel code** (D/E)	-	-

Section 14. Transport information

	transportation requirements.					

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) PAIR**: MEHQ

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

United States inventory (TSCA 8b): All components are listed or exempted.

Clean Water Act (CWA) 311: methyl methacrylate

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
methyl methacrylate	≥90	Yes.	No.	No.	Yes.	No.
Ethylene glycol dimethacrylate	≤10	No.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	methyl methacrylate	80-62-6	≥90
Supplier notification	methyl methacrylate	80-62-6	≥90

Section 15. Regulatory information

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: METHYL METHACRYLATE

New York : The following components are listed: Methyl methacrylate; 2-Propenoic acid, 2-methyl-, methyl ester

New Jersey : The following components are listed: METHYL METHACRYLATE; 2-PROPENOIC ACID, 2-METHYL-, METHYL ESTER

Pennsylvania : The following components are listed: 2-PROPENOIC ACID, 2-METHYL-, METHYL ESTER

Canada inventory : All components are listed or exempted.

International regulations

International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory (ENCS): All components are listed or exempted.
Japan inventory (ISHL): Not determined.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan Chemical Substances Inventory (TCSI): All components are listed or exempted.
Turkey inventory: All components are listed or exempted.

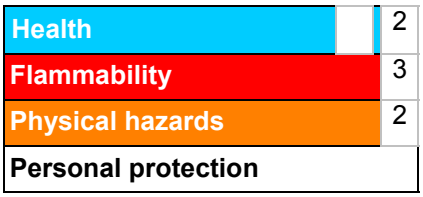
Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

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

Section 16. Other information

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

History

Date of printing : 9/8/2016

Date of issue/Date of revision : 9/8/2016

Date of previous issue : No previous validation

Version : 1

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Information contained within this SDS is only to be distributed as required by law.