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

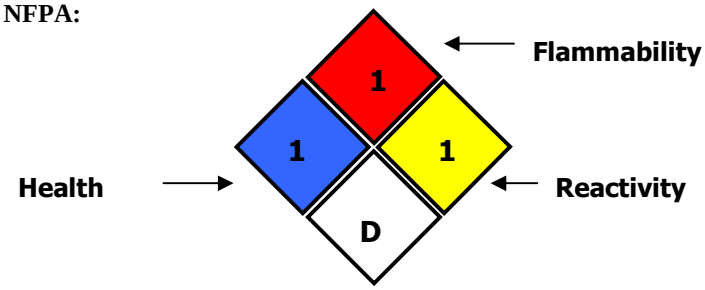
International Regulations

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.*

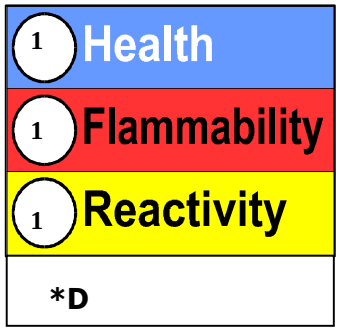
Section XVI - Other Information

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.

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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/DA - No Data Available
N/R - Not Reviewed
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

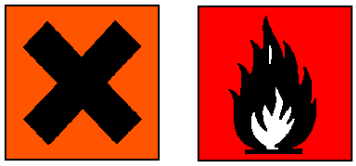
Clean Air Act: HAP/ODS	This product contains the following hazardous air pollutants (HAP) as defined by the U.S. Clean Air Act: • Methyl methacrylate, CAS# 80-62-6 This product contains no Class 1 or Class 2 ODS.
Clean Water Act: Priority Pollutant/Hazardous Substance	This product contains the following 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

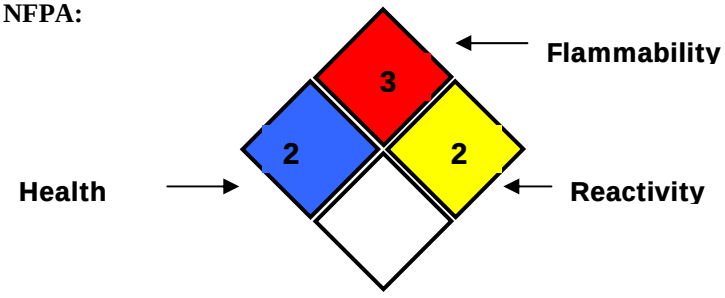
International Regulations

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)*

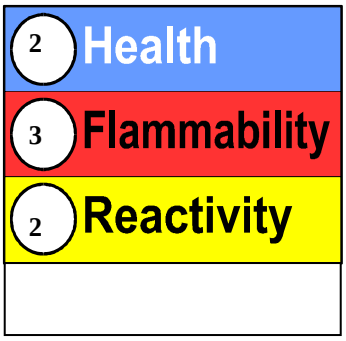
Section XVI - Other Information

Hazard Rating System (Pictograms)

NFPA:



HMIS:



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

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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/DA - No Data Available
N/R - Not Reviewed
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 = 10ºC**

Section XV - Regulatory Information

US Federal Regulations

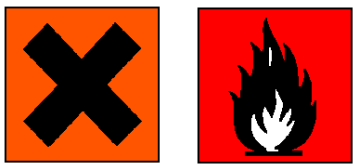
Clean Air Act: HAP/ODS	This product contains the following hazardous air pollutants (HAP) as defined by the U.S. Clean Air Act: • Methyl methacrylate, CAS# 80-62-6 • Dibutyl phthalate, CAS# 84-74-2 • Dioctyl phthalate, CAS# 117-81-7 This product contains no Class 1 or Class 2 ODS.
Clean Water Act: Priority 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

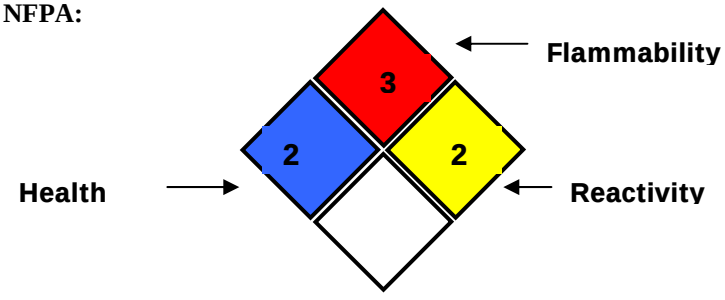
International Regulations

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)*

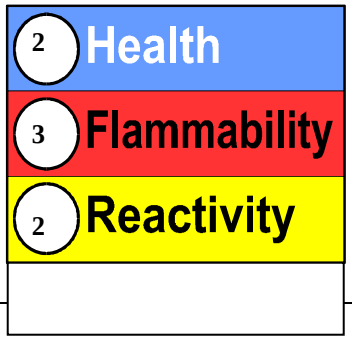
Section XVI - Other Information

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

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