Material Safety Data Sheet
VERSACRYL
SELF CURE HARDENING LIQUID

Section I - Product and Company Identification

Product Name: VERSACRYL SELF CURE HARDENING LIQUID
Chemical Name: Methacrylate monomer

Family: Acrylic Monomers
Product Use: Organic Process Chemical
Product #: 1014001, 1014011, 1014016

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

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>CAS Numbers</th>
<th>EINECS#</th>
<th>INCI Name</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate</td>
<td>80-62-6</td>
<td>201-297-1</td>
<td>N/DA</td>
<td>TWA/STEL 100 ppm, STEL 50 ppm</td>
</tr>
<tr>
<td>Ethylene Glycol Dimethacrylate</td>
<td>97-90-5</td>
<td>202-617-2</td>
<td>N/DA</td>
<td>OSHA N/E, ACGIH STEL N/E, TWA N/E</td>
</tr>
<tr>
<td>N,N-Dimethyl-P-Toluidine</td>
<td>99-97-8</td>
<td>202-805-4</td>
<td>Dimethyltolylamine</td>
<td>N/E</td>
</tr>
</tbody>
</table>

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 repeated 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 extremities and other nervous system abnormalities.

NOTE: Refer to Section 11, Toxicological Information for Details

Reviewed Date: 12/14/11 | Replaces Date: 2/5/08
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 medical 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

<table>
<thead>
<tr>
<th>Flash Point (°F/°C)</th>
<th>Flammable Limit (vol%)</th>
<th>Auto-ignition Temperature (vol%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tag Closed Cup: 51°F/10°C</td>
<td>LEL: 2.12% UEL: 12.5%</td>
<td>815°F/435°C</td>
</tr>
</tbody>
</table>

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.
- 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.
Material Safety Data Sheet  VERSACRYL
SELF CURE HARDENING LIQUID  Page 3 of 7

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 utilizing 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 exposure limits. Protection provided by air purifying respirators is limited. Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions. Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

Section IX - Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Odor &amp; Odor Threshold</th>
<th>pH</th>
<th>Specific Gravity (H2O=1): 0.94</th>
<th>Viscosity N/DA, mPas @ 20°C</th>
<th>% Volatile W/W %: 99+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear, pale blue liquid</td>
<td>Acrid, fruity</td>
<td>N/D</td>
<td>@ 20°C</td>
<td>3.5</td>
<td>Moderate, 1.6gm/100gm @20°C</td>
</tr>
<tr>
<td>Boiling Point/ Decomposition Temperature</td>
<td>Octanol/Water Partitioning Coefficient</td>
<td>Log Po/w</td>
<td>Vapor Pressure:</td>
<td>Vapor Density</td>
<td>Evaporation Rate</td>
</tr>
<tr>
<td>214°F/101°C N/DA</td>
<td>N/A</td>
<td>mm Hg : 29 @ 20°C</td>
<td>(Air =1): 3.5</td>
<td>(Butyl Acetate= 1): 3.0</td>
<td>N/DA</td>
</tr>
<tr>
<td>Flash Point (°F/°C)</td>
<td>Flammable Limit (vol%)</td>
<td>Auto-ignition Temperature (vol%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tag Closed Cup: 68°F/20°C</td>
<td>LEL: 2.0%</td>
<td>UEL: 12.5%</td>
<td>790°F/421°C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reviewed Date: 12/14/11 | Replaces Date: 2/5/08
Section X - Stability and Reactivity

**Stability:**
Stable

**Hazardous Decomposition Products:**
Oxides of carbon when burned.

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

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

**Hazardous Polymerization:**
May occur

Section XI - Toxicological Information

<table>
<thead>
<tr>
<th>Acute Oral Toxicity</th>
<th>Acute Dermal Toxicity</th>
<th>Acute Inhalation Toxicity</th>
<th>Irritation - skin</th>
<th>Irritation - Eye</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral(Rat) LD50: 7872 mg/kg</td>
<td>Dermal (Rabbit) LD50: 9400mg/kg</td>
<td>Inhalation (Rat) LC50 3750ppm</td>
<td>N/DA</td>
<td>N/DA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sensitization</th>
<th>Mutagenicity</th>
<th>Sub-chronic Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/DA</td>
<td>N/DA</td>
<td>N/DA</td>
</tr>
</tbody>
</table>

Section XII - Ecological Information

**Ecotoxicological Information**

<table>
<thead>
<tr>
<th>Acute Toxicity to Fish</th>
<th>Acute Toxicity to Invertebrates</th>
<th>Acute Toxicity to Algae</th>
<th>Bioconcentration</th>
<th>Toxicity to Sewage Bacteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>96 hour LC50:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>fathead minnows: 150 ppm</td>
<td>N/DA</td>
<td>N/DA</td>
<td>N/DA</td>
<td>N/DA</td>
</tr>
<tr>
<td>bluegill sunfish: 232 ppm</td>
<td>N/DA</td>
<td>N/DA</td>
<td>N/DA</td>
<td>N/DA</td>
</tr>
</tbody>
</table>

**Chemical Fate Information**

<table>
<thead>
<tr>
<th>Biodegradability</th>
<th>Chemical Oxygen Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/DA</td>
<td>N/DA</td>
</tr>
</tbody>
</table>

Section XIII - Disposable 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)**

<table>
<thead>
<tr>
<th>Proper Shipping Name:</th>
<th>Flammable liquids, n.o.s., (methyl methacrylate, ethylene glycol dimethacrylate), 3, UN1993, PGII</th>
</tr>
</thead>
</table>

**Identification Number:**
UN1993

**Marine Pollutant:**
No

**Special Provisions:**
T8, T31

**Emergency Response Guidebook (ERG) #:**
128

**IATA (DGR):**

<table>
<thead>
<tr>
<th>Proper Shipping Name:</th>
<th>Flammable liquids, n.o.s., (methyl methacrylate, ethylene glycol dimethacrylate), 3, UN1993, PGII</th>
</tr>
</thead>
</table>
## Class or Division:

| Class or Division: | 3 |
| Class or Division: | 3.2 |

## UN or ID Number:

| UN or ID Number: | UN1993 |
| UN or ID Number: | UN1993 |

## Packaging Instructions:

| Proper Shipping Name: | Flammable liquids, n.o.s., (methyl methacrylate, ethylene glycol dimethacrylate), 3, UN1993, PGII |
| Special Provisions & Stowage/Segregation: | None |

## Emergency Response Guidance (ICAO)

| IMO (IMDG): | 3L |

## 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
Material Safety Data Sheet

VERSACRYL

SELF CURE HARDENING LIQUID

Page 6 of 7

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 N,N-dimethyl-p-toluidine, CAS# 99-97-8 is on the DSL List.WHMIS : none

EINECS: European Inventory: Versacryl Liquid ‘B’ Self 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)

<table>
<thead>
<tr>
<th>NFPA</th>
<th>HMIS</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="2" alt="Flammability" /> <img src="2" alt="Reactivity" /></td>
<td><img src="2" alt="Health" /> <img src="3" alt="Flammability" /> <img src="2" alt="Reactivity" /></td>
</tr>
</tbody>
</table>

Reviewed Date: 12/14/11 | Replaces Date: 2/5/08
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<table>
<thead>
<tr>
<th>Revised Sections since Last Version</th>
<th>Heading, MSDS name changed from Liquid B to Hardening Liquid. Product numbers added.</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/14/11 Review Date</td>
<td>No content changes made</td>
</tr>
</tbody>
</table>