Material Safety Data Sheet DIAMOND D SELF CURE MONOMER

Section I - Product and Company Identification

Product Name: DIAMOND D SELF CURE MONOMER

MSDS#: NKM090803-DDM

Chemical Name: NA

MSDS Approval Date: 9/10/2003 MSDS Prepared by: BSQ

Family: Acrylic Monomers

Product Use: Dental Monomer

Formula: Proprietary Formulation

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	Methyl methacrylate	100 ppm	50 ppm/100 ppm	Group 3/no/no	>90
Ethylene Glycol Dimethacrylate	97-90-5	202-617-2	N/DA	N/E	N/E	Not Listed	<10
Inhibitor (MEHQ)	150-76-5	205-769-8	p-Hydroxyanisole	N/E	5 mg/m^3	Not Listed	<1

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	Immediately flush eyes with water for 15 minutes, occasionally lifting the upper and lower eyelids. Get medical help if discomfort persists.

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: 68°F/20ºC	LEL: 2.0% UEL: 12.5%	790ºF/421ºC

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, colorless liquid	Characteristic strong, acrid odor	N/A	(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 @ 25ºC	(Air =1): 3.45	(Butyl Acetate = 1): 1.45	N/DA	Slightly soluble

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
Hazardous Decomposition Products:
Oxides of carbon when burned.
Incompatibility (Materials to Avoid):
Reducing and oxidizing agents and UV light.
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 - 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)	
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

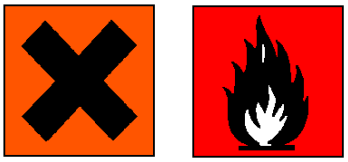
Clean Air Act: HAP/ODS	This product contains the following hazardous air pollutants (HAP) as defined by the U.S. Clean Air Act: • Methyl methacrylate, CAS# 80-62-6 This product contains no Class 1 or Class 2 ODS (Ozone Depleting Substance).
Clean Water Act: Priority Pollutant/Hazardous Substance	This 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, 4-Methoxyphenol, CAS# 150-76-5 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, 4-Methoxyphenol, CAS# 150-76-5
NJ Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6, 4-Methoxyphenol, CAS# 150-76-5
PA Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6, 4-Methoxyphenol, CAS# 150-76-5
FL Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6, 4-Methoxyphenol, CAS# 150-76-5
MN Right-to-Know Law:	Methyl methacrylate, CAS# 80-62-6, 4-Methoxyphenol, CAS# 150-76-5

International Regulations

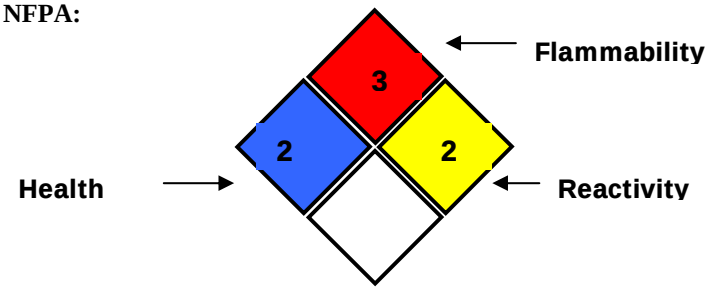
CDSL: Canadian Inventory (on Canadian Transitional List)	Methyl methacrylate, CAS# 80-62-6 is on the DSL List. WHMIS = B2, D2B. Ethylene glycol dimethacrylate, CAS# 97-90-5 is on the DSL List. WHMIS = n/da 4-Methoxyphenol, CAS# 150-76-5 is on the DSL List. WHMIS = n/da
EINECS: European Inventory: 	**Diamond D 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)

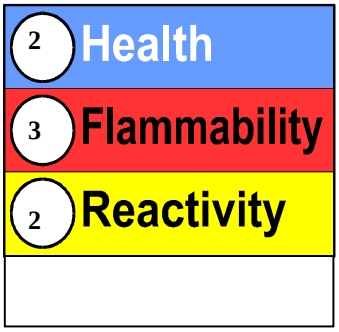
Section XVI - Other Information

Hazard Rating System (Pictograms)

NFPA:



HMIS:



Approval Date: 9/8/2003
Supersedes Date: Initial Issue
Review Date: 2/15/06 no changes made

Product Number -	
Revised Sections since Last Version:	Initial Issue
	1/25/10 reviewed. No changes made

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