

MATERIAL SAFETY DATA SHEET

This form is regarded to be in compliance with 29 CFR Part 1910.1200

1. IDENTIFICATION

PRODUCT NAME: LIQUID EMA, 300 series.

Manufacturer's Name: **CALI CHEM, Inc.,**
Address : **14271 Corporate Dr Suite # B**
City, State, Zip code **Garden Grove, CA 92843**
Business Telephone : **(714) 265-3740**
Emergency Telephone #: **(800) 535 – 5053**

DATE: 4/03/2011

2. COMPOSITION / INFORMATION ON INGREDIENTS

ITEM	CHEMICAL NAME	CAS NUMBER:	WT/WT %
01	Ethyl Methacrylate Monomer	97-63-2	60.0-100.0
02	Ethylene Glycol Dimethacrylat	97-90-5	0.0-10.0
03	Triethylene Glycol Trimethacrylate	109-16-0	0.0-10.0
04	Hydroxy propyl methacrylate	27813-02-1	0.0-15.0
05	N,N-Dimethyl-p-Toluidine	99-97-8	0.0-10.0
06	Trade Secret	NA	0.0-1.0

ITEM	ACGIH		OSHA		Company	SKIN
	TLV-TWA	TLV-STEL	PEL TWA	PEL CEILING	Recommendation	
01	NE	NE	NE	NE	100 ppm	NE
02	NE	NE	NE	NE	100 ppm	NE
03	NE	NE	NE	NE	100 ppm	NE
04	NE	NE	NE	NE	NE	NE
05	NE	NE	NE	NE	NE	NE
06	NE	NE	NE	NE	NE	NE

3. HAZARDS IDENTIFICATION

Unstable/Reactive upon depletion of inhibitor. Check inhibitor levels periodically.

Ingestion: Causes irritation, a burning sensation of the mouth, throat and respiratory tract and abdominal pain.

Eyes: Eye contact may cause irritation with discomfort, tearing, or blurring of vision.

Inhalation: High concentrations irritant to the respiratory tract and may cause dizziness, headache and anesthetic effects.

Skin: May cause skin irritation and can cause skin sensitization. Extensive/prolonged or repeated exposure to this material may result in a more severe skin response. Symptoms may be delayed.

CARCINOGENICITY:

Triethylene Glycol Dimethacrylate may contain trace quantities of substances known to the state of California to cause cancer and/or reproductive toxicity. All carcinogen studies for all types of cancers were negative. None of the other components of this material are listed by IARC, NTP, OSHA, or ACGIH as carcinogens.

4. 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. Do NOT allow victim to rub or keep eyes closed.
First Aid for Skin	Remove contaminated clothing and wash contact area with soap and water for 15 minutes. Get medical aid if systems persist. Wash clothing before reuse.
First Aid for Inhalation	In case of exposure to a high concentration of vapor or mist, 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 medical aid. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2 to 4 cupfuls of milk or water.

5. FIRE FIGHTING MEASURES

FLASH POINT:	19 °C, 67°F
FLAMMABLE LIMIT	AIR VOL% LOWER: 1.8 UPPER: Saturation concentration.
AUTOIGNITION TEMPERATURE:	411 °C, 771 °F
EXTINGUISHER METHOD:	Chemical foam, carbon dioxide, dry chemical, water spray.
FIRE AND EXPLOSION HAZARDS:	High temperatures, inhibitor depletion, accidental impurities, or exposure to radiation or oxidizers may cause spontaneous polymerizing reaction generating heat/pressure. Closed containers may rupture or explode during a runaway polymerization. Use a water spray or fog to reduce or direct vapors. Water may not be effective in actually extinguishing a fire involving this product.
SPECIAL FIRE FIGHTING PROCEDURES:	This product is a flammable liquid. When involved in a fire, this product may ignite readily and decompose to produce carbon oxides. Vapors of this product are heavier than air and may travel to a source of ignition and flash back to a leaking or open container. Do not enter fire area without proper protection. Fight fire from a safe location. Heat/impurities may cause pressure to build and/or rupture closed containers, spreading fire, increasing risk of burns/injuries. Structural firefighters must wear SCBAs and full protective equipment.
SENSITIVE TO MECHANICAL IMPACT:	No.
SENSITIVE TO STATIC DISCHARGE:	Yes.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES

Before cleaning any spill or leak, individuals involved must wear appropriate Personal Protective Equipment (e.g., goggles, gloves). Deny entry to all unprotected individuals. Dike and contain spill with inert material (e.g. sand or earth). Use ONLY non-sparking tools for recovery and cleanup. Maximize ventilation (open doors and windows) and secure all sources of ignition. Place into appropriate closed container(s) for disposal in accordance with local, state and federal regulations. Wash all affected areas with plenty of warm water and soap. Remove any contaminated clothing and wash thoroughly before reuse. Keep spills and cleaning runoffs out of municipal sewers and open bodies of water.

7. HANDLING & STORAGE

PRECAUTIONS FOR HANDLING:

Use local explosion-proof ventilation with a minimum capture velocity of 100 ft/min (30 m/min) at point of material release. Refer to Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Hygienist. Observe precautions found on label.

PRECAUTIONS FOR STORAGE:

Store containers in a cool, dry location, away from direct sunlight, heat, sparks, flame, other light sources, or sources of intense heat. Keep container closed after each use. Ground and bond all containers when transferring. **Check inhibitor levels periodically**, add to the bulk material if needed. Maintain at a minimum, the original 2-inch headspace in the product container. Do not blanket or mix with oxygen-free gas as it renders the inhibitor ineffective.

INDUSTRIAL HYGIENE PRACTICES: Avoid contact with skin, eyes, clothing, and prolonged contact with the product. Use good personal hygiene and housekeeping. After use, wash hands and exposed skin with soap and water. Do not eat, drink or smoke while handling product.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

VENTILATION:

Refer to Section 7 regarding the ventilation requirements for working with this product. Use explosion-proof local exhaust at processing equipment, including buffers, sanders, grinders and polishers. High temperature processing equipment should be well ventilated.

RESPIRATORY PROTECTION:

A respirator should be worn whenever workplace conditions warrant a respirators use. None required if airborne concentrations are maintained below the exposure limit listed in Section 2. If necessary, use only respiratory protection authorized per U.S. OSHA's requirement in 29 CFR §1910.134 or other appropriate governing standard.

EYE PROTECTION:

Depending on the use of this product, splash or safety glasses may be worn. If necessary, refer to U.S. OSHA 29 CFR §1910.133, or other appropriate governing standard. Ensure that an eyewash station, sink or washbasin is available in case of exposure to eyes.

PROTECTIVE GLOVES:

If anticipated that prolonged & repeated skin contact will occur during use of this product, wear chemical resistant gloves for routine industrial use. If necessary, refer to U.S. OSHA 29 CFR §1910.138, or other appropriate governing standards.

OTHER PROTECTIVE EQUIPMENT: No special body protection is required under typical circumstances of use and handling. If necessary, refer to appropriate governing

standards. An eyewash station and a safety shower are recommended.

9. PHYSICAL & CHEMICAL PROPERTIES

For Ethyl Methacrylate Monomer:

APPEARANCE	Clear, tinted liquid.
ODOR	Acrid, ester-like.
pH:	ND
ODOR THRESHOLD:	ND
BOILING POINT:	118 °C, 246 °F
FREEZING POINT:	< -50 °C
VISCOSITY:	NE
SPECIFIC GRAVITY (H ₂ O=1):	NE
VAPOR PRESSURE:	20 mm/Hg @ 20 °C, 68 °F
PERCENT VOLATILE W/W%:	NE
VAPOR DENSITY (AIR=1):	3.94
EVAPORATION RATE (BuAc =1):	NE
SOLUBILITY IN WATER:	0.5% @ 20 °C, 68 °F
COEFFICIENT OF WATER/OIL DISTRIBUTION:	NE

10. STABILITY & REACTIVITY

CONDITIONS TO AVOID: Temperatures above 21°C, 70°F, localized heat sources (example drum or band heaters) oxidizing conditions, freezing conditions, direct sunlight, ultraviolet radiation, inert gas blanketing.

INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers, strong reducers, free radical initiators, inert gases, oxygen scavengers. Material has strong solvent properties and can soften paint and rubber.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of Carbon when burned.

HAZARDOUS POLYMERIZATION: MAY OCCUR: X WILL NOT OCCUR:

STABILITY: Unstable/Reactive upon depletion of inhibitor.

11. TOXICOLOGICAL INFORMATION

TARGET ORGANS:

For Ethyl Methacrylate Monomer:	None Listed.
For Mono Methacrylate:	None listed.
For Trade Secret:	None Listed.
For Alkyl Dimethacrylate:	None Listed.
For N,N-Dimethyl-p-Toluidine:	Liver, Central Nervous System, Blood and Skin.

REPRODUCTIVE:

For Ethyl Methacrylate Monomer: No information available.

TOXICITY DATA:

This product has NOT been tested on animals to obtain toxicology data. There is toxicology data for the components of the product, which is found in scientific literature. Some of this data is presented below.

For Ethyl Methacrylate Monomer:

Dermal Rabbit	LD ₅₀ :	>10,000 mg/kg.
Inhalation Rat	LC ₅₀ :	8300 ppm/4H.
Intraperitoneal Mouse	LD ₅₀ :	1369 mg/kg.
Intraperitoneal Rat	LD ₅₀ :	1223 mg/kg.
Oral Rat	LD ₅₀ :	13468 mg/kg.

For Triethylene Glycol Dimethacrylate:

Oral Mouse	LD ₅₀ :	10750 mg/kg.
Oral Rat	LD ₅₀ :	10837 mg/kg.

For N,N-Dimethyl-p-Toluidine:

Inhalation Rat	LC ₅₀ :	254 ppm/4H.
Acute Dermal Rat	LD ₅₀ :	>2000 mg/kg.
Ingestion Rat	LD ₅₀ :	1650 mg/kg.

12. ECOLOGICAL INFORMATION**AQUATIC TOXICITY:**

For Monomer: There is no specific data available for this product; however, very large releases of this product may be harmful or fatal to overexposed aquatic life. There is ecological data for the components of the product, which is found in scientific literature. Some of this data is presented below.

For Ethyl Methacrylate Monomer:

Daphnia Magna	EC ₅₀ :	> 66 mg/L/48H.
Rainbow Trout	LC ₅₀ :	100 mg/l/96H.
Algae	EC ₅₀ :	>0.70 mg/L/72H.

ENVIRONMENTAL FATE:

For Ethyl Methacrylate Monomer:

Biodegradation: Inherently biodegradable 79% in 28 days.

13. DISPOSAL CONSIDERATIONS

Non-contaminated, properly inhibited product is not a RCRA hazardous waste. It is the generators responsibility to determine what is classified as a hazardous waste. Comply with all federal, state, and local regulations.

Dispose of 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.

14. TRANSPORT INFORMATION

DOT/UN SHIPPING NAME:	ETHYL METHACRYLATE, STABILIZED
DOT/UN CLASS:	3
NA/UN NUMBER:	UN 2277
PACKING GROUP:	II
LABEL:	Flammable Liquid

IMDG CLASS:
CERCLA RQ:

3
For Ethyl Methacrylate Monomer: 1000 lb.

15. REGULATORY INFORMATION

SARA Reporting Requirements: Yes
SARA Threshold Planning Quantity: There are specific Threshold Planning Quantities for the components of this product.
TSCA Inventory Status: The components of this product are listed on the TSCA Inventory.
CERCLA Reportable Quantity (RQ): Yes
Other Federal Requirements: This product complies with the appropriate sections of the Food and Drug Administration's 21 CFR.
Other Canadian Regulations: This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR. The components of this product are listed on the DSL/NDL. None of the components of this product are listed on the Priorities Substances List.
State Regulatory Information: This product may contain components that are covered under specific state criteria.

RISK STATEMENTS: R11 – Highly Flammable
R36/37/38 – Irritating to eyes, respiratory system and skin.
R43 – May cause sensitization by skin contact

SAFETY STATEMENTS: S3 – Keep in a cool place.
S7 – Keep container tightly closed.
S9 – Keep container in a well ventilated place.
S16 – Keep away from sources of ignition – No Smoking.
S20 – When using do not eat or drink.
S29 – Do not empty into drains.
S33 – Take precautionary measures against static discharges.
S37/39 – Wear suitable gloves and eye/face protection.

16. OTHER INFORMATION

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM (HMIS) RATING:

HEALTH: 2
FLAMMABILITY: 3
REACTIVITY: 2
PERSONAL PROTECTIVE EQUIPMENT: Gloves and Safety Glasses or Chemical Splash Goggles.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) HAZARD IDENTIFICATION RATING:

HEALTH: 2
FLAMMABILITY: 3
REACTIVITY: 2

ABBREVIATIONS:

NA Not Applicable

ND Not Determined

NE Not Established

ppm parts per million
mg Milligram
gm Gram
kg Kilogram
mm Millimeter
Pa Pascals

G Gallon
L Liter
mol Mole
μ Micro
p Pico
c cento

LC Lethal Concentration
TC Toxic Concentration
BOD Biological Oxygen Demand
Lo Lowest
TLm Threshold Limit
DOC Dissolved Organic Carbon

LD Lethal Dose
TD Toxic Dose
COD Chemical Oxygen Demand
ThOD Theoretical Oxygen Demand
IC Inhibitory Concentration

H Hours
D Days
W Weeks

M Months
Y Years

ABBREVIATIONS:

ACGIH American Conference of Governmental Industrial Hygienist
CPR Controlled Product's Regulation
DSL Canadian Domestic Substances List
NDSL Canadian Non-domestic Substance List
IARC International Agency for Research for Cancer
NOEL No Observed Effect Level
NOAEL No Observed Adverse Effect Level
OSHA Occupational Safety and Health Administration
PEL Permissible Exposure Limit
TLV Threshold Limit Value