

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Name	Formula 1 Mounting Liquid FML-32,FML-128, FML-640, FXL-32, FXL-128 FXL-640
Product Description	This product contains iso-Butyl methacrylate and low levels of stabiliser.
Alternative names	Stabilised iso-Butyl methacrylate monomer; 2-propenoic acid, 2-Methyl-, 2-methyl propyl ester.
CAS No.	97-86-9
Identified use(s)	Comonomer(s) for production of polymers.
Uses advised against	Mixtures containing unreacted liquid monomer intended to come into contact with skin or nails.
Manufacturer	Mark V Lab 18 Kripes Rd. East Granby, CT 06026 markvmet@markvlab.com
Emergency Phone No.	1-800-424-9300 (Transport Emergency) 1-877-886-2143 (Medical Emergency)

2. HAZARDS IDENTIFICATION

Hazard classification	Flammable liquid Category 3. Skin corrosion / irritation Category 2. Skin sensitization Category 1. Serious eye damage / eye irritation Category 2A. STOT - single exposure Category 3 Hazardous to the aquatic environment - Acute hazard Category 1.
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Label elements



Symbol

Signal word

Hazard statement(s)

Warning

H226: Flammable liquid and vapor.

H315: Causes skin irritation.

H317: May cause an allergic skin reaction.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation. H400:

Very toxic to aquatic life.

Precautionary statement(s)

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233: Keep container tightly closed.

P240: Ground/bond container and receiving equipment.

P241: Use explosion-proof electrical/ventilating/lighting/equipment.

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

P261: Avoid breathing vapors.

P264: Wash thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area.

P272: Contaminated work clothing should not be allowed out of the workplace.

P273: Avoid release to the environment.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352: IF ON SKIN: Wash with plenty of water.

P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312: Call a POISON CENTER/doctor if you feel unwell.

P333+P313: If skin irritation or rash occurs: Get medical advice/attention.

P337+P313: If eye irritation persists: Get medical advice/attention.

P362: Take off contaminated clothing and wash it before reuse.

P370 + P378: In case of fire, use water spray, foam, dry powder or CO₂ for extinction.

P391: Collect spillage.

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P403+P235: Store in a well-ventilated place. Keep cool.

P405: Store locked up.

P501: Dispose of contents/container to hazardous waste in accordance with local, state or national legislation. Incinerate under approved controlled conditions, using incinerators suitable for the disposal of flammable organics.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical identity of the substance iso-Butyl methacrylate .

Common name(s), synonym(s) of the substance Stabilised iso-Butyl methacrylate monomer; 2-propenoic acid, 2-Methyl-, 2-methyl propyl ester.

CAS No. 97-86-9

Impurities and stabilizing additives Standard grades contain inhibitors from among the following: 1000 ppm Maximum p-Methoxyphenol (CAS No. 150-76-5)

Substances in the product which may present a health or environmental hazard, or which have been assigned occupational exposure limits, are detailed below.

Substance identity	%W/W	CAS No.
iso-Butyl methacrylate	>99	97-86-9
Ethyl Alcohol	<1	64-17-5
N,N-Dimethyl-P-Toluidine	<.5	99-97-8
Methyl Isobutyl Ketone	<.5	108-10-1

4. FIRST AID MEASURES

Description of first aid measures

Inhalation	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE or doctor if you feel unwell.
Skin Contact	IF ON SKIN (or hair): Wash with plenty of water. If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing and wash before re-use.
Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Obtain immediate medical attention.

Most important symptoms and effects, both acute and delayed

Causes serious eye irritation. Causes skin irritation. May cause respiratory irritation. May cause an allergic skin reaction.

Indication of any immediate medical attention and special treatment needed

None necessary.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	In case of fire, use water spray, foam, dry powder or CO ₂ for extinction. Keep containers cool by spraying with water if exposed to fire.
Unsuitable Extinguishing Media	Do not use water jet.
Special hazards arising from the substance or mixture	Flammable liquid and vapor. May polymerize on heating. Sealed containers may rupture explosively if hot.
Special protective equipment and precautions for fire fighters	A self contained breathing apparatus and suitable protective clothing should be worn in fire for conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Eliminate sources of ignition. Wear protective gloves and eye/face protection. Avoid breathing vapors. See Section: 8
Environmental precautions	Avoid release to the environment. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.
Methods and materials for containment and recovery	Collect spillage. Do not adsorb onto sawdust or other combustible materials. Transfer to a cleaning up container for disposal or recovery. Use only non-sparking tools.
Other advice	See Section: 8, 13

7. HANDLING AND STORAGE

HANDLING	Do not eat, drink or smoke at the work place. Wash thoroughly after handling. Avoid breathing vapors. Use only outdoors or in a well-ventilated area. The vapor is heavier than air; beware of pits and confined spaces. Ground container and receiving equipment. Use explosion proof electrical equipment. Use only non-sparking tools. Take precautionary measures against static discharge.
STORAGE	Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up. Keep away from heat, sparks, open flame, hot surfaces - No smoking. Protect from sunlight. IMPORTANT: Methacrylates stored in bulk must be kept in contact with air (oxygen). Monomer vapors are uninhibited and may form polymers in vent or flame arresters, resulting in blockage of vents. Check inhibitor levels every 6 months and return to original level.
Storage temperature (°C):	Store at temperatures not exceeding 77°F (25°C).
Incompatible materials:	Polymerization catalysts, such as peroxy or azo compounds, strong acids, alkalis and oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Substance	CAS No.	OSHA PEL TWA	ACGIH TWA	ACGIH STEL	Company Std. TWA	Company Std. STEL
iso-Butyl methacrylate	97-86-9	Not established	Not established	Not established	50 ppm	100 ppm

Appropriate engineering controls Do not eat, drink or smoke at the work place. Provide adequate ventilation, including appropriate local extraction, to ensure that the occupational exposure limit is not exceeded. Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required. **Individual protection measures, such as personal protective equipment (PPE)**

Eye/face protection



Wear eye/face protection. Safety spectacles/goggles/full face shield.

Skin protection



Wear protective gloves.

For splash protection: Butyl; EN 374.

For immersion protection: Butyl; 0.7 mm or greater; EN 374.

Suitability of gloves should be confirmed with glove manufacturer. Change gloves, if contamination occurs or duration of activity exceeds breakthrough time. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.

Respiratory protection



Wear respiratory protection.

Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely. A suitable mask with filter type A may be appropriate. In the event of formation of particularly high levels of vapor a self contained breathing apparatus may be appropriate.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Liquid.
Color.	Almost colorless to pale yellow.
Odor	Characteristic.
Odor Threshold (ppm)	0.016 - 0.069
pH (Value)	Not applicable.
Melting Point (°C)	-35
Boiling Point (°C)	155
Flash Point (°C)	42.5 - 45.5 [Closed cup]
Relative Evaporation Rate (Ether = 1)	Not available.
Flammability (solid, gas)	Not applicable.
Flammable Limits (Lower) (%v/v)	2
Flammable Limits (Upper) (%v/v)	8
Vapour pressure (Pascal)	210 at 68°F (20°C)
Vapor Density (Air=1)	4.91
Specific Gravity	0.896 at 60°F (15.5°C)
Solubility (Water)	0.47 g/l at 68°F (20°C)
Solubility (Other)	Miscible with most organic solvents.

Partition Coefficient (n-Octanol/water)	2.95
Auto Ignition Temperature (°C)	367
Decomposition Temperature (°C)	Not applicable.
Viscosity (mPa. s)	Not available.
Explosive Properties	Not applicable.
Oxidizing Properties	Not applicable.

10. STABILITY AND REACTIVITY

Reactivity	Will exothermically polymerise in the presence of initiators.
Chemical stability	Stable in the presence of inhibitor.
Hazardous Reactions	Susceptible to polymerisation initiated by prolonged storage or the presence of catalyst.
Conditions to avoid	Heat and direct sunlight.
Materials to avoid	Polymerization catalysts, such as peroxy or azo compounds, strong acids, alkalis and oxidizing agents.
Hazardous decomposition product(s)	Does not decompose up to auto-ignition temperature.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Ingestion	Low oral toxicity, but ingestion may cause irritation of the gastrointestinal tract.
Ingestion toxicity data	LD50 (oral) > 9590 mg/kg
Ingestion STOT-single exposure	Not applicable.
Inhalation	May cause respiratory irritation. May cause drowsiness and dizziness.
Inhalation toxicity data	LC50 (vapor) 5026 ppm (29.74 mg/l)(290 min)
Inhalation STOT-single exposure	Not applicable.
Respiratory sensitization data	Not a respiratory sensitizer.
Aspiration hazard data	Not an aspiration hazard.
Skin Contact	May cause an allergic skin reaction. Causes skin irritation. Repeated and/or prolonged contact may cause dermatitis.
Skin contact toxicity data	LD50 (dermal) > 17760 mg/kg
Skin contact STOT-single exposure	Not applicable.
Eye Contact	Causes serious eye irritation.
Eye contact toxicity data	Slight irritant to rabbit eyes.
Eye STOT-single exposure	Not applicable.
Germ cell mutagenicity data	Salmonella typhimurium (TA1535, 1537, 98, 100) negative (OECD 471)

Repeated exposure toxicity

Chronic exposure	Exposure to high concentrations may produce adverse effects on the nasal epithelium. Repeated exposure produces adverse effects on the spleen.
STOT - repeated exposure data	NOAEL (inhalation) (rat) (28 day) 310 ppm (OECD 412) LOAEL (inhalation) (rat) (28 day) 952 ppm (OECD 412) NOAEC (oral) (rat) 30 mg/kg/day

Reproductive toxicity data	Some evidence of developmental toxicity at 1000 mg/kg/day in screening study (OECD 422). Decreased number of neonates, decreases in parturition and live birth indices and total number of offspring. NOEL for developmental toxicity is considered 300 mg/kg/day.
Carcinogenicity data	It is unlikely to present a carcinogenic hazard to man.
Other information	Not applicable.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Very toxic to aquatic life. LC50 (rainbow trout) (96 hour) (flow through) 20 mg/l EC50 (Daphnia magna) (48 hour) > 29 mg/l EC50 (Selenastrum capricornutum) (72 hour) 16 mg/l EC50 (Selenastrum capricornutum) (72 hour) 44 mg/l The product is substantially removed in biological treatment processes.
Persistence and degradability	Readily biodegradable. 74% (28 days)
Bioaccumulative potential	The product has moderate potential for bioaccumulation.
Mobility	The product is predicted to have moderate mobility in soil.
Other adverse effects	None known.

13. DISPOSAL CONSIDERATIONS

Avoid release to the environment. Decontaminate empty drums before recycling.

Disposal methods	Dispose of contents/container to hazardous waste in accordance with local, state or national legislation. Incinerate under approved controlled conditions, using incinerators suitable for the disposal of flammable organics.
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14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)	US Label Information : Flammable liquid Domestic containers of less than 450 L. capacity are not regulated by DOT. International shipments must be labelled as Flammable and comply with UN2283 designation.
UN No.	1993
Proper Shipping Name	ISO-BUTYL METHACRYLATE, STABILIZED
Class	3
Packing group	III
Environmental hazards	Not classified as a Marine Pollutant.
Special precautions for user	No special requirements
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. REGULATORY INFORMATION

US Federal Regulations

SARA 302 - Extremely Hazardous Substances	Not listed
SARA 311/312 - Hazard Categories	
Acute	Yes
Chronic	No.
Fire	Yes

Reactivity Yes

Pressure No.

SARA 313 - Toxic Chemicals Not listed

US State Regulations

California Proposition 65 (California) Not listed

Canadian Regulations

WHMIS Classification

Class B, Division 3, Combustible Liquid

Class D, Division 2, Subdivision B, Toxic Material

Class F, Dangerously Reactive Material

NPCA-HMIS Rating

Health 2

Flammability 2

Reactivity 2

16. OTHER INFORMATION

The following sections contain revisions or new statements: 9

Date of preparation: 17 -March- 2015

Inventory Status

European Union All chemicals in this product comply with REACH regulations.

United States (TSCA) Listed in TSCA

Canada (DSL/NDSL) Listed in DSL

Japan (ENCS) Listed in ENCS

Philippines (PICCS) Listed in PICCS

Australia (AICS) Listed in AICS

South Korea (KECI) Listed in KECI

China (IECSC) Listed in IECSC

Compliance with other Regulatory Chemical Inventories cannot be assumed, please contact supplier for further information.

Import to the EU is regulated under REACH. Confirmation from Lucite International UK Ltd acting as Only Representative and registrant is required to confirm that the volume of material imported has been confirmed as within the Only Representative supply chain.

Methacrylate monomers are used safely in a wide variety of applications including some areas of personal hygiene. We are aware of some reports suggesting that use of methacrylate monomers in fingernail extension applications may result in loosening or shedding of the nails of the user as well as respiratory or other effects in those exposed to high levels of the vapors. Lucite International Inc. has performed no technical or clinical testing and has no data to support the use of methacrylate monomers in this application. Under no circumstances should methacrylate monomers be used in this or similar applications.

MEDICAL USE: CAUTION: DO NOT USE IN MEDICAL APPLICATIONS INVOLVING IMPLANTATION IN THE HUMAN BODY.

Lucite International Inc. has performed no clinical testing on the use of this product in any medical application. Lucite International Inc. has no data to support the use of this product in any medical application. This product was not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. Lucite International Inc. has neither sought, nor received, approval from any regulatory agency for the use of this product in implantation in the human body or in contact with internal body fluids or tissues.

For further information on the properties and uses, or storage and handling, of iso-Butyl Methacrylate refer to Product data sheet; i-Butyl Methacrylate (TS/C/2263/11), or the Methacrylate Esters Safe Handling Manual.

It is the responsibility of the end-product manufacturer to identify all market and use-specific regulations and to ensure compliance with these regulations.

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