



# THIRD VENT MONOMER

Material Safety Data Sheet

Arkema Inc.

10079747

## 1 PRODUCT AND COMPANY IDENTIFICATION

### Altuglas International

Arkema Inc.  
2000 Market Street  
Philadelphia, PA 19103

### EMERGENCY PHONE NUMBERS:

Chemtrec: (800) 424-9300 (24hrs) or (703) 527-3887  
Medical: Rocky Mountain Poison Control Center  
(866) 767-5089 (24Hrs)

Information Telephone Numbers	Phone Number	Available Hrs
Altuglas International Customer Service	(800) 523-1532	8:00 am - 6:00pm EST

Product Name           THIRD VENT MONOMER  
Product Synonym(s)

Chemical Family       Methyl Methacrylate  
Chemical Formula       N/A  
Chemical Name         Methyl Methacrylate Solution  
EPA Reg Num  
Product Use            Recovered monomer

## 2 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	CAS RegistryNumber	Typical %	OSHA
Ethyl acrylate	140-88-5	10 max	Y
High Boiling Compounds	11199500000-5014P	10	Y
Methyl methacrylate	80-62-6	80 MIN	Y

The substance(s) marked with a "Y" in the OSHA column, are identified as hazardous chemicals according to the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200)

This material is classified as hazardous under Federal OSHA regulation.

The components of this product are all on the TSCA Inventory list.

## 3 HAZARDS IDENTIFICATION

### Emergency Overview

Clear colorless liquid with a fruity odor

**WARNING!**

CAUSES SEVERE EYE AND SKIN IRRITATION.

CAN CAUSE RESPIRATORY TRACT IRRITATION

PROLONGED CONTACT MAY CAUSE SHORT-TERM LOSS OF FEELING IN THE FINGERS CONTAINS MATERIAL WHICH IS LISTED AS A CARCINOGEN BY THE NATIONAL TOXICOLOGY PROGRAM

### Potential Health Effects

Inhalation and skin contact are expected to be the primary routes of occupational exposure to this material. Based on its composition, it is anticipated to be severely irritating to the eyes, skin and respiratory tract. Repeated contact can cause an allergic skin reaction. Overexposure to vapor or mist may trigger asthma attacks in susceptible individuals and may also result in mild, reversible central nervous system effects such as headache, nausea, dizziness, impaired coordination, memory effects, and drowsiness. Respiratory effects have included changes in lung function and respiratory difficulty. Long-term repeated handling of a component has been reported to produce short-term loss of feeling (sensory paresthesia) of the fingers. A component of this material is listed as a substance that may reasonably be anticipated to be a carcinogen by the National Toxicology Program and is classified as possibly carcinogenic to



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humans (2B) by the International Agency for Research on Cancer. Medical conditions which may be aggravated by exposure to this material include lung disease or limited respiratory capacity.

## 4 FIRST AID MEASURES

IN CASE OF CONTACT, immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

IF SWALLOWED, induce vomiting immediately as directed by medical personnel. Get medical attention. Call a Poison Control Center. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

IF INHALED, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

## 5 FIRE FIGHTING MEASURES

### Fire and Explosive Properties

Auto-Ignition Temperature	435 C/815 F (MMA)		
Flash Point	9 C/48 F (MMA)	Flash Point Method	Seta CC
Flammable Limits- Upper	12.5% (MMA)		
Lower	2.1% (MMA)		

### Extinguishing Media

Use water spray, carbon dioxide, foam or dry chemical.

### Fire Fighting Instructions

Use water spray to dilute vapors and wash them from air. Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand NIOSH approved or equivalent). Fire fighting equipment should be thoroughly decontaminated after use.

### Fire and Explosion Hazards

Vapors can travel to a source of ignition and flash back. A large amount of heat can be generated when monomers are exposed to a fire. Heated sealed containers can explode.

## 6 ACCIDENTAL RELEASE MEASURES

### In Case of Spill or Leak

Extinguish or turn off all ignition sources. Ventilate the space involved. Wear appropriate personal protection equipment as indicated in Section 8 of this MSDS. Contain spill with inert materials. Construct a dike to prevent spreading. Collect with non-sparking tools to a suitable container. Prevent waterway contamination. Absorb liquid onto inert absorbent and place in DOT approved drums for disposal. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

## 7 HANDLING AND STORAGE

### Handling

Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Keep container closed. Use only with adequate ventilation. CONTAINER HAZARDOUS WHEN EMPTY. Emptied container retains vapor and product residue. Follow labeled warnings even after container is emptied. RESIDUAL VAPORS MAY



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## 7 HANDLING AND STORAGE

EXPLODE ON IGNITION. DO NOT CUT, DRILL GRIND OR WELD ON OR NEAR THIS CONTAINER. Improper disposal or reuse of this container may be dangerous and/or illegal.

### Storage

Do NOT expose to UV light.

Store in well ventilated area away from heat and sources of ignition such as flame, sparks and static electricity. Ensure that all storage and handling equipment is properly rated, grounded and installed to satisfy electrical classification requirements. Static electricity may accumulate and create a fire hazard. All storage containers, including containers such as drums, cylinders and IBC's, must be bonded and grounded during filling and emptying operations. Store away from oxidizers and reactive materials. Keep container tightly closed. Observe all federal, state and local regulations and National Fire Protection Association (NFPA) Codes which pertain to the specific local conditions of storage and use, including OSHA 29 CFR 1910.106 and NFPA 30, 70, 77, and 497.

Use within 90 days maximum.

## 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Engineering Controls

Investigate engineering techniques to reduce exposures below airborne exposure limits. Provide ventilation if necessary to control exposure levels below airborne exposure limits (see below). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

### Eye / Face Protection

Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment immediately available.

### Skin Protection

Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Wear chemical goggles, a face shield, and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing promptly and wash before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash skin thoroughly after handling.

### Respiratory Protection

Avoid breathing vapor or mist. Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. If exposures cannot be kept at a minimum with engineering controls, consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

### Airborne Exposure Guidelines for Ingredients

Exposure Limit		Value
<b>Ethyl acrylate</b>		
ACGIH STEL	-	15 ppm; 61 mg/m3
ACGIH TWA	-	5 ppm 20 mg/m3
OSHA Skin designator	-	Y
OSHA TWA PEL	-	25 ppm 100 mg/m3

### Methyl methacrylate



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## Methyl methacrylate

ACGIH Sensitizer Designator	-	Y
ACGIH STEL	-	100 ppm (410 mg/m <sup>3</sup> )
ACGIH TWA	-	50 ppm (205 mg/m <sup>3</sup> )
OSHA TWA PEL	-	100 ppm (410 mg/m <sup>3</sup> )

-Only those components with exposure limits are printed in this section.

-Skin contact limits designated with a "Y" above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required.

-ACGIH Sensitizer designator with a value of "Y" above means that exposure to this material may cause allergic reactions.

-WEEL-AIHA Sensitizer designator with a value of "Y" above means that exposure to this material may cause allergic skin reactions.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Odor	Clear colorless liquid with a fruity odor
pH	NE
Specific Gravity	0.94 Estimate
Vapor Pressure	29 mm Hg @ 20 C/68 F (MA)
Vapor Density	3.5 (MMA)
Melting Point	-48 C/-54 F (MMA)
Freezing Point	NA
Boiling Point	101 C/214 F (MMA)
Solubility In Water	1.5% moderately soluble
Evaporation Rate	>1
Percent Volatile	100

## 10 STABILITY AND REACTIVITY

### Stability

This material is chemically stable under normal and anticipated storage and handling conditions. However, this material can undergo hazardous polymerization. See Hazardous Polymerization below for conditions to avoid.

### Hazardous Polymerization

Ultraviolet light (sunlight) may cause polymerization. Oxygen-free atmosphere may cause polymerization.

### Incompatibility

Avoid contact with the following: acids, bases, oxidizing agents, reducing agents, UV light.

### Hazardous Decomposition Products

There are no known hazardous decomposition products for this material.

## 11 TOXICOLOGICAL INFORMATION

### Toxicological Information

Data on this material and/or its components are summarized below.

#### Methyl Methacrylate

Single exposure (acute) studies indicate that this material is practically non-toxic if swallowed (rat LD50 7,900-9,400 mg/kg), absorbed through skin (rabbit LD50 >5,000 mg/kg) or inhaled (rat 4-hr LC50 16.6-66.6 mg/l; 2-hr LC50 70.7 mg/l) and slightly irritating to rabbit eyes and skin.

**11 TOXICOLOGICAL INFORMATION**

Skin allergy was observed in guinea pigs and humans following repeated exposure. Long-term repeated handling has been reported to produce short-term loss of feeling (sensory paresthesia) of the fingers. Acute effects in animals following inhalation exposure include respiratory tract irritation, labored breathing and anaesthesia. Repeated inhalation exposure resulted in nasal, respiratory tract, liver, kidney and bone marrow damage, behavioral, central and peripheral nervous system effects, and deaths at high concentrations in rats and mice. Repeated oral dosing produced behavioral/nervous system effects such as decreased locomotor activity and learning ability, increased shock-induced aggressive behavior, and changes in brain neurotransmitters in rats, while no effects on motor behavior were reported in another study conducted at higher doses for a longer period. Liver, kidney and stomach damage were also reported in rats following repeated oral exposure. Following repeated application to the skin, irritation was the primary effect observed in rats and rabbits. In long-term inhalation studies with rats and mice conducted by the National Toxicology Program (NTP), reduced survival, degenerative and inflammatory changes in olfactory epithelium and lung fibrosis were reported. Similar dose-related effects on olfactory epithelium were reported in other long-term inhalation studies with rats and hamsters. A long-term drinking water study with rats produced reduced food and water consumption and increased kidney to body weight ratio. This material produced no increased incidence of tumors in any of these studies or in a long-term feeding study in dogs. No skin tumors were observed in rats following repeated skin application. Birth defects were observed in the offspring of rats exposed by inhalation during pregnancy, but at a level that produced adverse effects on the mothers. No birth defects were noted in numerous other inhalation studies with rats and mice. Slight developmental effects were noted in the offspring of mice (slight decrease in fetal weight) and rats (delayed ossification) at concentrations producing adverse effects in the mothers. No effects were seen on the ability of male or female mice to reproduce when exposed by inhalation. No genetic changes were observed in tests using bacteria. Both positive and negative responses have been reported in tests using animals or animal cells. This material is rapidly absorbed and metabolized after oral administration. Some skin absorption may occur, in that dental technicians using this material had measurable levels in their urine.

**Ethyl Acrylate**

Single exposure (acute) studies indicate that this material is slightly toxic if swallowed (rat LD50 500-5,000 mg/kg) or absorbed through skin (rabbit LD50 1,800-5,000 mg/kg, occlusive), practically non-toxic if inhaled (rat 4-hr LC50 >6.15-8.9 mg/l; mice 5-min RD50 315 ppm) and severely irritating to rabbit eyes and skin.

**High Boiling Compound**

Single exposure (acute) studies indicate that this material is slightly toxic to practically non-toxic if swallowed (rat LD50 1,960 - >5,000 mg/kg) or inhaled (rat 4-hr LC50 >8-9 ppm; no deaths following exposure to saturated vapor), no more than slightly toxic if absorbed through skin (rat LD0 >2,000 mg/kg), corrosive to rabbit eyes and severely irritating to rabbit skin (24-hr exposure, PII 8.0/8.0)

**12 ECOLOGICAL INFORMATION****Ecotoxicological Information****Methyl Methacrylate**

This material is practically non-toxic to *Daphnia magna* (24-hr LC50 1,760 mg/l), fathead minnow (24-96 hr LC50 159-499 mg/l), bluegill sunfish (24-96 hr LC50 232-368 mg/l), guppies (24-96 hr LC50 368 mg/l), goldfish (24-96 hr LC50 277-423 mg/l) and green algae (96-hr LC50 170 mg/l). It is slightly toxic to *Daphnia magna* (48-hr EC50 69 mg/l) and no more than slightly toxic to rainbow trout (96-hr LC50 >79 mg/l). The inhibition of cell multiplication for blue green algae is 120 mg/l.

**Ethyl Acrylate**

This material is moderately toxic to *Oncorhynchus mykiss* (96-hr LC50 4.6 mg/l), *Pimephales promelas* (96-hr LC50 2.50 mg/l), *Selanastrum capricornutum* (96-hr EC50 7.9-11 mg/l), sheepshead minnow (96-hr LC50 2.0 mg/l), *Daphnia magna* (48-hr EC(I)50 4.4-7.9 mg/l). It is slightly toxic to brine shrimp (24-hr LC50 12 mg/l), algae (72-hr IC50 48 mg/l) and bacteria (17-hr EC50 1,500 mg/l).

**Chemical Fate Information****Methyl Methacrylate**

This material has a very high mobility rating in soils. Using activated sludge bacteria, 88% of the material was biodegraded after 28 days in the closed bottle test. A calculated log BCF of 0.55 would indicate that little



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## 12 ECOLOGICAL INFORMATION

bioconcentration would be expected to occur in aquatic organisms.

Ethyl Acrylate

The BOD5/COD was 0.74. Degradation of 52% required 14 days. The log Pow is 1.18-1.33. The theoretical ThOD was 1.92. The log Koc was 1.32. This material is highly mobile through soil (slight adsorption) and the evaporation was (t %life 0.23 d (river) -24 d (pond).

## 13 DISPOSAL CONSIDERATIONS

### Waste Disposal

Incineration is the recommended method for disposal observing all local, state and federal regulations.

## 14 TRANSPORT INFORMATION

DOT Name	FLAMMABLE LIQUIDS, NOS
DOT Technical Name	Methyl methacrylate, Ethyl acrylate
DOT Hazard Class	3
UN Number	UN1993
DOT Packing Group	PG II
RQ	1000 lbs. for Methyl methacrylate, 1000 lbs. for Ethyl acrylate

## 15 REGULATORY INFORMATION

### Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370)

Immediate (Acute) Health	Y	Fire	Y
Delayed (Chronic) Health	Y	Reactive	Y
		Sudden Release of Pressure	N

The components of this product are all on the TSCA Inventory list.

### Ingredient Related Regulatory Information:

SARA Reportable Quantities	CERCLA RQ	SARA TPQ
Ethyl acrylate	1000 LBS	NE
Methyl methacrylate	1000 LBS	
High Boiling Compounds	NE	NE

### SARA Title III, Section 313

This product does contain chemical(s) which are defined as toxic chemicals under and 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. See Section 2

Ethyl acrylate

Methyl methacrylate

### California Prop 65 - Carcinogen

This product does contain the following chemical(s), as indicated below, currently on the California list of Known Carcinogens.

Ethyl acrylate

### Massachusetts Right to Know

This product does contain the following chemical(s), as indicated below, currently on the Massachusetts Right to Know Substance



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## Massachusetts Right to Know

This product does contain the following chemical(s), as indicated below, currently on the Massachusetts Right to Know Substance List.

- Ethyl acrylate
- Methyl methacrylate

## New Jersey Right to Know

This product does contain the following chemical(s), as indicated below, currently on the New Jersey Right-to-Know Substances List.

- Ethyl acrylate
- Methyl methacrylate

## Pennsylvania Environmental Hazard

This product does contain the following chemical(s), as indicated below, currently on the Pennsylvania Environmental Hazard List.

- Ethyl acrylate
- Methyl methacrylate

## Pennsylvania Right to Know

This product does contain the following chemical(s), as indicated below, currently on the Pennsylvania Hazardous Substance List.

- Ethyl acrylate
- Methyl methacrylate

## Pennsylvania Special Hazard

This product does contain the following chemical(s), as indicated below, currently on the Pennsylvania Special Hazard List.

- Ethyl acrylate

## 16 OTHER INFORMATION

### Revision Information

Revision Date                      19 JUL 2007                      Revision Number 2  
Supercedes Revision Dated    17-OCT-2006

### Revision Summary

#### Key

NE= Not Established    NA= Not Applicable    (R) = Registered Trademark

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