1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Matheson Tri-Gas, Inc.

The telephone numbers listed below are emergency numbers, please contact your local branch for routine inquiries.

USA
959 Route 46 East
Parsippany, New Jersey 07054-0624 USA
Phone: 973-257-1100

CANADA
530 Watson Street
Whitby, Ontario L1N 5R9 Canada
Phone: 905-668-3570

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24 Hour EMERGENCY CONTACT
U.S - CHEMTREC 1-800-424-9300
CANADA - CANUTEC 613-996-6666
SUBSTANCE: METHYL METHACRYLATE, INHIBITED

SYMBOL: C₄H₆O₂

TRADE NAMES/SYNONYMS:
METHYL 2-METHYL-2-PROPENOATE; METHYL METHYLACRYLATE; MME; DIAKON;
METHYL METHACRYLATE MONOMER; METHYL ALPHA-METHYLACRYLATE; ‘MONOCITE’
METHACRYLATE MONOMER; METHACRYLIC ACID, METHYL ESTER; 2-METHYL
PROPENOIC ACID; ALPHA-METHYLACRYLIC ACID; U162; UN 1247; O-3629; MAT14630;
RTECS QZ5075000

CHEMICAL FAMILY: esters, carboxylic, aliphatic

CREATION DATE: Jan 24 1989
REVISION DATE: Mar 16 1999

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: METHYL METHACRYLATE, INHIBITED

CAS NUMBER: 80-62-6

EC NUMBER (EINECS): 201-297-1

EC INDEX NUMBER: 607-035-00-6

PERCENTAGE: 100.0

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2  FIRE=3  REACTIVITY=2

EC CLASSIFICATION (ASSIGNED):
F Highly Flammable
Xi Irritant
Sensitizing
R 11-36/37/38-43

EC Classification may be inconsistent with independently-researched data.

EMERGENCY OVERVIEW:
**Color:** colorless

**Physical Form:** volatile liquid

**Odor:** sweet odor

**Major Health Hazards:** respiratory tract irritation, skin irritation, eye irritation, central nervous system depression, allergic reactions

**Physical Hazards:** Flammable liquid and vapor. Vapor may cause flash fire. May polymerize. Containers may rupture or explode. May form peroxides during prolonged storage.

**POTENTIAL HEALTH EFFECTS:**

**INHALATION:**
- **Short Term Exposure:** irritation, vomiting, headache, drowsiness, symptoms of drunkenness, lung congestion, kidney damage, liver damage
- **Long Term Exposure:** difficulty breathing, liver damage

**SKIN CONTACT:**
- **Short Term Exposure:** irritation (possibly severe), allergic reactions, rash
- **Long Term Exposure:** same as effects reported in short term exposure

**EYE CONTACT:**
- **Short Term Exposure:** irritation (possibly severe), tearing, eye damage
- **Long Term Exposure:** no information on significant adverse effects

**INGESTION:**
- **Short Term Exposure:** allergic reactions, nausea, vomiting, drowsiness, symptoms of drunkenness, coma
- **Long Term Exposure:** no information on significant adverse effects

**CARCINOGEN STATUS:**
- **OSHA:** N
- **NTP:** N
- **IARC:** N

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**4. FIRST AID MEASURES**

**INHALATION:**
Remove from exposure immediately. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Get medical attention.

**SKIN CONTACT:**
Remove contaminated clothing, jewelry, and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical attention, if needed.

**EYE CONTACT:**
Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately.
INGESTION:
Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

NOTE TO PHYSICIAN:
For ingestion, consider gastric lavage and activated charcoal slurry.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS:
Severe fire hazard. Moderate explosion hazard. Vapor/air mixtures are explosive above flash point. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Containers may rupture or explode if exposed to heat.

EXTINGUISHING MEDIA:
alcohol resistant foam, carbon dioxide, regular dry chemical, water

Large fires: Use alcohol-resistant foam or flood with fine water spray.

FIRE FIGHTING:
Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Evacuation radius: 800 meters (1/2 mile). Water may be ineffective.

FLASH POINT:
50 F (10 C) (OC)

LOWER FLAMMABLE LIMIT:
1.7%

UPPER FLAMMABLE LIMIT:
8.2%

AUTOIGNITION:
790 F (421 C)

FLAMMABILITY CLASS (OSHA):
IB

6. ACCIDENTAL RELEASE MEASURES

AIR RELEASE:
Reduce vapors with water spray. Stay upwind and keep out of low areas.

SOIL RELEASE:
Dig holding area such as lagoon, pond or pit for containment. Dike for later disposal. Absorb with sand or other non-combustible material. Collect with absorbent into suitable container.
WATER RELEASE:
Cover with absorbent sheets, spill-control pads or pillows. Neutralize. Collect with absorbent into suitable container. Absorb with activated carbon. Remove trapped material with suction hoses. Collect spilled material using mechanical equipment.

OCCUPATIONAL RELEASE:
Avoid heat, flames, sparks and other sources of ignition. Remove sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Reportable Quantity (RQ): Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

7. HANDLING AND STORAGE
Store and handle in accordance with all current regulations and standards. Protect from physical damage. Store outside or in a detached building. Store with flammable liquids. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

METHYL METHACRYLATE, INHIBITED:
METHYL METHACRYLATE:
100 ppm (410 mg/m³) OSHA TWA
100 ppm (410 mg/m³) ACGIH TWA
100 ppm (410 mg/m³) NIOSH recommended TWA

VENTILATION: Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.
1000 ppm
Any supplied-air respirator.
Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
Any air-purifying respirator with a full facepiece and an organic vapor canister.
Any powered, air-purifying respirator with organic vapor cartridge(s).
Any self-contained breathing apparatus with a full facepiece.
Any supplied-air respirator with a full facepiece.
Escape -
Any air-purifying respirator with a full facepiece and an organic vapor canister.
Any appropriate escape-type, self-contained breathing apparatus.
For Unknown Concentrations or Immediately Dangerous to Life or Health -
Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
Any self-contained breathing apparatus with a full facepiece.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: liquid
COLOR: colorless
PHYSICAL FORM: volatile liquid
ODOR: sweet odor
MOLECULAR WEIGHT: 100.13
MOLECULAR FORMULA: C5-H8-O2
BOILING POINT: 212 F (100 C)
FREEZING POINT: -54 F (-48 C)
VAPOR PRESSURE: 28 mmHg @ 20 C
VAPOR DENSITY (air=1): 3.6
SPECIFIC GRAVITY (water=1): 0.9
WATER SOLUBILITY: slightly soluble
PH: Not available
VOLATILITY: Not available
ODOR THRESHOLD: 0.05 ppm
EVAPORATION RATE: 3.1 (butyl acetate=1)
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available
SOLVENT SOLUBILITY:
Soluble: ethanol, ether, acetone, methyl ethyl ketone, esters, aromatic & chlorinated solvents, tetrahydrofuran, organic solvents

10. STABILITY AND REACTIVITY

REACTIVITY:
May polymerize. Avoid contact with air, light or storage and use above room temperature.

CONDITIONS TO AVOID:
Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

INCOMPATIBILITIES:
acids, bases, peroxides, metals, oxidizing materials, combustible materials

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: oxides of carbon

POLYMERIZATION:
May polymerize. Avoid contact with heat, air, light, initiators or curing agents. Closed containers may rupture violently.

11. TOXICOLOGICAL INFORMATION
METHYL METHACRYLATE, INHIBITED:

IRRITATION DATA:
10 gm/kg open skin-rabbit; 150 mg eyes-rabbit

TOXICITY DATA:
78000 mg/m3/4 hour(s) inhalation-rat LC50; >5 gm/kg skin-rabbit LD50; 7872 mg/kg oral-rat LD50

CARCINOGEN STATUS: IARC: Human No Adequate Data, Animal Inadequate Evidence, Group 3; ACGIH: A4 -Not Classifiable as a Human Carcinogen

LOCAL EFFECTS:
Irritant: inhalation, skin, eye

ACUTE TOXICITY LEVEL:
Slightly Toxic: inhalation, ingestion

TARGET ORGANS
immune system (sensitizer), central nervous system

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
kidney disorders, liver disorders, respiratory disorders, skin disorders and allergies

TUMORIGENIC DATA:
Available.

MUTAGENIC DATA:
Available.

REPRODUCTIVE EFFECTS DATA:
Available.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

FISH TOXICITY: 191000 ug/L 96 hour(s) LC50 (Mortality) Bluegill (Lepomis macrochirus)

INVERTEBRATE TOXICITY: 1042 mg/L 24 hour(s) EC100 (Abundance) Water flea (Daphnia magna)

ALGAL TOXICITY: 37000 ug/L NR year(s) (Population Growth) Green algae (Scenedesmus quadricauda)

13. DISPOSAL CONSIDERATIONS

Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): U162. Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION
U.S. DOT 49 CFR 172.101. SHIPPING NAME-UN NUMBER; HAZARD CLASS;
PACKING GROUP; LABEL:
Methyl methacrylate monomer, inhibited-UN1247; 3; II; Flammable liquid

15. REGULATORY INFORMATION

U.S. REGULATIONS:
TSCA INVENTORY STATUS: Y

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CERCLA SECTION 103 (40CFR302.4): Y
Methyl Methacrylate: 1000 LBS RQ

SARA SECTION 302 (40CFR355.30): N

SARA SECTION 304 (40CFR355.40): N

SARA SECTION 313 (40CFR372.65): Y
Methyl Methacrylate

SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40CFR370.21):
ACUTE: Y
CHRONIC: Y
FIRE: Y
REACTIVE: Y
SUDDEN RELEASE: N


STATE REGULATIONS:
California Proposition 65: N

EUROPEAN REGULATIONS:

EC NUMBER (EINECS): 201-297-1

EC RISK AND SAFETY PHRASES:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>R 11</td>
<td>Highly flammable.</td>
</tr>
<tr>
<td>R 36/37/38</td>
<td>Irritating to eyes, respiratory system and skin.</td>
</tr>
<tr>
<td>R 43</td>
<td>May cause sensitization by skin contact.</td>
</tr>
<tr>
<td>S 2</td>
<td>Keep out of reach of children.</td>
</tr>
<tr>
<td>S 9</td>
<td>Keep container in a well-ventilated place.</td>
</tr>
<tr>
<td>S 16</td>
<td>Keep away from sources of ignition - No smoking.</td>
</tr>
<tr>
<td>S 29</td>
<td>Do not empty into drains.</td>
</tr>
<tr>
<td>S 33</td>
<td>Take precautionary measures against static discharges.</td>
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</tbody>
</table>

CONCENTRATION LIMITS:
C>=20% Xi R 36/37/38-43
1%<=C<20% Xi R 43
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