SAFETY DATA SHEET

1. Identification

Product identifier: Methyl Methacrylate

Other means of identification
Product No.: Q690

Recommended restrictions
Recommended use: For Laboratory, Research or Manufacturing Use.
Restrictions on use: Not determined.

Details of the supplier of the safety data sheet

Company Name: Avantor Performance Materials, LLC
Address: 100 Matsonford Rd, Suite 200
Radnor, PA 19087

Telephone: Customer Service: 855-282-6867
Contact Person: Product Information Compliance
E-mail: info@avantormaterials.com

Emergency telephone number:
CHEMTREC: 1-800-424-9300 within US and Canada (24 hrs/day, 7 days/week)

2. Hazard(s) identification

Hazard Classification

Physical Hazards
- Flammable liquids Category 2

Health Hazards
- Skin Corrosion/Irritation Category 2
- Serious Eye Damage/Eye Irritation Category 2A
- Skin sensitizer Category 1
- Specific Target Organ Toxicity - Single Exposure

Target Organs
1. Respiratory tract irritation.

Label Elements

Hazard Symbol:
Signal Word: Danger

Hazard Statement: Highly flammable liquid and vapor. Causes skin irritation. May cause respiratory irritation. May cause an allergic skin reaction. Causes serious eye irritation.

Precautionary Statements


Response: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. 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. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

Storage: Store in a well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC): Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>CAS number</th>
<th>Content in percent (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>80-62-6</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Rinse mouth. Get medical attention if symptoms occur.

Inhalation: Move to fresh air. Get medical attention if symptoms persist.
Skin Contact: Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation persists after washing.

Most important symptoms/effects, acute and delayed

Symptoms: Irritating to eyes, respiratory system and skin.

Hazards: None known.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: Flammable liquid and vapor.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Dry chemical. Alcohol foam. Carbon dioxide

Unsuitable extinguishing media: Water may be ineffective in fighting the fire.

Specific hazards arising from the chemical: Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Fire or excessive heat may result in rupture of container due to bulk polymerization. Prevent buildup of vapors or gases to explosive concentrations. Heat may cause the containers to explode.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Keep upwind. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. See Section 8 of the SDS for Personal Protective Equipment.

Methods and material for containment and cleaning up: In case of leakage, eliminate all ignition sources. Take precautionary measures against static discharges. Stop leak if possible without any risk. Use non-sparking tools. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.
Notification Procedures: Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

Environmental Precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

### 7. Handling and storage

#### Precautions for safe handling:
DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting] equipment. Use non-sparking tools. Wear protective gloves/protective clothing/eye protection/face protection. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash hands thoroughly after handling.

#### Conditions for safe storage, including any incompatibilities:
Keep away from food, drink and animal feeding stuffs. Store below 30°C. Keep container tightly closed in a cool, well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

### 8. Exposure controls/personal protection

#### Control Parameters

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Type</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>TWA</td>
<td>50 ppm</td>
<td>US. ACGIH Threshold Limit Values (2011)</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>100 ppm</td>
<td>US. ACGIH Threshold Limit Values (2011)</td>
</tr>
<tr>
<td></td>
<td>REL</td>
<td>100 ppm 410 mg/m3</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards (2010)</td>
</tr>
<tr>
<td></td>
<td>PEL</td>
<td>100 ppm 410 mg/m3</td>
<td>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>100 ppm 410 mg/m3</td>
<td>US. OSHA Table Z-T-A (29 CFR 1910.1000) (1989)</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>100 ppm 410 mg/m3</td>
<td>US. Tennessee, OELs. Occupational Exposure Limits, Table Z1A (06 2008)</td>
</tr>
<tr>
<td>AN ESL</td>
<td>Health</td>
<td>50 ppb</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)</td>
</tr>
<tr>
<td>ST ESL</td>
<td>Screening levels that have the odor designations represent the levels of constituents in the air at which the odor would be a nuisance.</td>
<td>210 ppb</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)</td>
</tr>
<tr>
<td>AN ESL</td>
<td>Health</td>
<td>210 µg/m3</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)</td>
</tr>
<tr>
<td>ST ESL</td>
<td>Screening levels that have the odor designations represent the levels of constituents in the air at which the odor would be a nuisance.</td>
<td>860 µg/m3</td>
<td>US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)</td>
</tr>
</tbody>
</table>

#### Appropriate Engineering Controls: No data available.
Individual protection measures, such as personal protective equipment

**General information:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

**Eye/face protection:** Wear safety glasses with side shields (or goggles).

**Skin Protection**

**Hand Protection:** Chemical resistant gloves

**Other:** Wear suitable protective clothing.

**Respiratory Protection:** In case of inadequate ventilation use suitable respirator.

**Hygiene measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower.

### 9. Physical and chemical properties

**Appearance**

- **Physical state:** Liquid
- **Form:** Liquid
- **Color:** Colorless
- **Odor:** Sweet, Sharp, Fruity
- **Odor threshold:** No data available.
- **pH:** No data available.
- **Melting point/freezing point:** -50 - -48 °C
- **Initial boiling point and boiling range:** 100.3 - 101 °C
- **Flash Point:** 10 - 11 °C (Closed Cup)
- **Evaporation rate:** 3.1 (butyl acetate=1)
- **Flammability (solid, gas):** Class IB Flammable Liquid
- **Vapor pressure:** 5.133 kPa (25 °C) 37 - 42 hPa (20 °C)
- **Vapor density:** 3.45 (Air=1)
- **Density:** 0.94 g/ml (20 °C)
- **Relative density:** 0.9440 (20 °C)
- **Solubility(ies)**
  - **Solubility in water:** 15.7 g/l (20 °C)
  - **Solubility (other):** chloroform: Soluble methyl ethyl ketone: Soluble tetrahydrofuran: Soluble

**Partition coefficient (n-octanol/water):** 1.38

**Auto-ignition temperature:** 435 °C
Decomposition temperature: No data available.
Viscosity: No data available.

Other information
Molecular weight: 100.12 g/mol (C5H8O2)

10. Stability and reactivity

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical Stability: Material is stable under normal conditions.

Possibility of hazardous reactions: Stable at room temperature for a limited storage period. Vapors are uninhibited and may form polymers in vents, causing stoppage. Violent eruption of closed containers may occur when polymerization occurs. Polymerization may be caused by elevated temperature, oxidizers, peroxides, or sunlight.

Conditions to avoid: Moisture. Heat, sparks, flames. Contact with incompatible materials.


Hazardous Decomposition Products: Thermal decomposition may release oxides of carbon.

11. Toxicological information

Information on likely routes of exposure
Inhalation: May cause irritation to the respiratory system.
Skin Contact: Causes skin irritation.
Eye contact: Causes serious eye irritation.
Ingestion: May cause irritation of the gastrointestinal tract.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: LD 50 (Rat): 7,800 - 9,400 mg/kg

Dermal
Product: LD 50 (Rabbit) > 5,000 mg/kg

Inhalation
Product: LC 50 (Rat, 4 h) 29.8 mg/l

Repeated dose toxicity
Product: No data available.

Skin Corrosion/Irritation
Product: Causes skin irritation.

Serious Eye Damage/Eye Irritation
Product: Causes serious eye irritation.
Respiratory or Skin Sensitization
Product: May cause allergic skin reaction.

Carcinogenicity
Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

No carcinogenic components identified

Germ Cell Mutagenicity
In vitro
Product: No mutagenic components identified
In vivo
Product: No mutagenic components identified

Reproductive toxicity
Product: No components toxic to reproduction

Specific Target Organ Toxicity - Single Exposure
Product: Respiratory tract irritation.

Specific Target Organ Toxicity - Repeated Exposure
Product: No data available.

Target Organs
Specific Target Organ Toxicity - Single Exposure: Respiratory tract irritation.

Aspiration Hazard
Product: Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish
Product: No data available.

Specified substance(s):
Methyl methacrylate
LC 50 (Guppy (Poecilia reticulata), 96 h): 326.4 - 426.9 mg/l
LC 50 (Fathead minnow (Pimephales promelas), 96 h): 125.5 - 460 mg/l
LC 50 (Bluegill (Lepomis macrochirus), 96 h): 153.9 - 341.8 mg/l
LC 50 (Goldfish (Carassius auratus), 96 h): 237.9 - 313.5 mg/l

Aquatic Invertebrates
Product: No data available.
**Specified substance(s):**
- Methyl methacrylate
  - NOAEL (Daphnia magna, 48 h): 48 mg/l
  - EC 50 (Daphnia magna, 48 h): 69 mg/l
  - EC 50 (Acartia tonsa, 48 h): 210 mg/l

**Chronic hazards to the aquatic environment:**

**Fish**
- **Product:** No data available.

**Specified substance(s):**
- Methyl methacrylate
  - NOAEL (Danio rerio, 35 d): 9.4 mg/l
  - LOAEL (Danio rerio, 35 d): 18.8 mg/l
  - LC 50 (Danio rerio, 35 d): 33.7 mg/l

**Aquatic Invertebrates**
- **Product:** No data available.

**Specified substance(s):**
- Methyl methacrylate
  - EC 50 (Daphnia magna, 21 d): 49 mg/l
  - LOAEL (Daphnia magna, 21 d): 68 mg/l
  - NOAEL (Daphnia magna, 21 d): 37 mg/l

**Toxicity to Aquatic Plants**
- **Product:** No data available.

**Persistence and Degradability**

**Biodegradation**
- **Product:** There are no data on the degradability of this product.

**BOD/COD Ratio**
- **Product:** No data available.

**Bioaccumulative potential**

**Bioconcentration Factor (BCF)**
- **Product:** No data available on bioaccumulation.

**Partition Coefficient n-octanol / water (log Kow)**
- **Product:** Log Kow: 1.38 20 °C

**Mobility in soil:**
- **Product:** No data available.

**Other adverse effects:**
- The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

### 13. Disposal considerations

**Disposal instructions:**
- Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Contaminated Packaging:**
- Since emptied containers retain product residue, follow label warnings even after container is emptied.
14. Transport information

DOT
UN Number: UN 1247
UN Proper Shipping Name: Methyl methacrylate monomer, stabilized
Transport Hazard Class(es)
  Class: 3
  Label(s): 3
Packing Group: II
Marine Pollutant: No
Special precautions for user: Not determined.

IMDG
UN Number: UN 1247
UN Proper Shipping Name: METHYL METHACRYLATE MONOMER, STABILIZED
Transport Hazard Class(es)
  Class: 3
  Label(s): 3
EmS No.: F-E, S-D
Pack Group: II
Marine Pollutant: No
Special precautions for user: Not determined.

IATA
UN Number: UN 1247
Proper Shipping Name: Methyl methacrylate monomer, stabilized
Transport Hazard Class(es):
  Class: 3
  Label(s): 3
Pack Group: II
Marine Pollutant: No
Special precautions for user: Not determined.

15. Regulatory information

US Federal Regulations
  TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
  None present or none present in regulated quantities.

  US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
  None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>1000 lbs.</td>
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</table>

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
  Flammable (gases, aerosols, liquids, or solids)
  Skin Corrosion or Irritation
  Serious Eye Damage/Eye Irritation
  Respiratory or Skin Sensitization
  Specific target organ toxicity (single or repeated exposure)
  Hazards Not Otherwise Classified (HNOC)

SARA 302 Extremely Hazardous Substance
  None present or none present in regulated quantities.
SARA 304 Emergency Release Notification
None present or none present in regulated quantities.

SARA 311/312 Hazardous Chemical
<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>10000 lbs.</td>
</tr>
</tbody>
</table>

SARA 313 (TRI Reporting)

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reporting threshold for other users</th>
<th>Reporting threshold for manufacturing and processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
<td>10000 lbs.</td>
<td>25000 lbs.</td>
</tr>
</tbody>
</table>

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3):

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</table>

US State Regulations

US. California Proposition 65
No ingredient requiring a warning under CA Prop 65.

US. New Jersey Worker and Community Right-to-Know Act

<table>
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US. Massachusetts RTK - Substance List

<table>
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<tr>
<th>Chemical Identity</th>
</tr>
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<tbody>
<tr>
<td>Methyl methacrylate</td>
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US. Pennsylvania RTK - Hazardous Substances

<table>
<thead>
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<th>Chemical Identity</th>
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<tbody>
<tr>
<td>Methyl methacrylate</td>
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</table>

US. Rhode Island RTK

<table>
<thead>
<tr>
<th>Chemical Identity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl methacrylate</td>
</tr>
</tbody>
</table>

International regulations

Montreal protocol
Not applicable

Stockholm convention
Not applicable

Rotterdam convention
Not applicable

Kyoto protocol
Not applicable
Inventory Status:
- Australia AICS: On or in compliance with the inventory
- Canada DSL Inventory List: On or in compliance with the inventory
- China Inv. Existing Chemical Substances: On or in compliance with the inventory
- Japan (ENCS) List: On or in compliance with the inventory
- Japan ISHL Listing: On or in compliance with the inventory
- Korea Existing Chemicals Inv. (KECI): On or in compliance with the inventory
- Mexico INSQ: On or in compliance with the inventory
- New Zealand Inventory of Chemicals: On or in compliance with the inventory
- Philippines PICCS: On or in compliance with the inventory
- Taiwan Chemical Substance Inventory: On or in compliance with the inventory
- US TSCA Inventory: On or in compliance with the inventory
- EINECS, ELINCS or NLP: On or in compliance with the inventory

16. Other information, including date of preparation or last revision

NFPA Hazard ID

**Hazard rating:**
- 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

**Issue Date:** 12-28-2019
**Revision Information:** Not relevant.
**Version #:** 1.1

**Source of information:** Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, information from the Toxicology Data Network (TOXNET), European Chemical Agency (ECHA) substance dossiers, IARC Monographs, US National Toxicology Program data, the Agency for Toxic Substances and Disease Registry, other manufacturer’s SDSs and other sources, as appropriate.

**Further Information:** No data available.
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