

# SAFETY DATA SHEET

## 1. Identification

**Product identifier:** METHYL ETHYL KETONE

**Other means of identification**

**Product No.:** 9214, 6206, 6240, 5385, 9414, 9319

**Recommended use and restriction on use**

**Recommended use:** Not available.

**Restrictions on use:** Not known.

**Manufacturer/Importer/Supplier/Distributor Information**

**Manufacturer**

**Company Name:** Avantor Performance Materials, Inc.  
**Address:** 3477 Corporate Parkway, Suite 200  
Center Valley, PA 18034

**Telephone:** Customer Service: 855-282-6867

**Fax:**  
**Contact Person:** Environmental Health & Safety  
**e-mail:** info@avantormaterials.com

**Emergency telephone number:**

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

## 2. Hazard(s) identification

**Hazard Classification**

**Physical Hazards**

Flammable liquids Category 2

**Health Hazards**

Acute toxicity (Oral) Category 4  
Serious Eye Damage/Eye Irritation Category 2A  
Specific Target Organ Toxicity -  
Single Exposure Category 3

**Label Elements**

**Hazard Symbol:**



**Signal Word:** Danger

**Hazard Statement:** Highly flammable liquid and vapor.  
Harmful if swallowed.  
Causes serious eye irritation.

**Precautionary**

**Statement**

**Prevention:** Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

**Response:** IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**Other hazards which do not result in GHS classification:** 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**

**Substances**

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
METHYL ETHYL KETONE		78-93-3	99 - 100%

\* 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:** Get medical attention if symptoms occur. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

**Inhalation:** Move to fresh air. Get medical attention if symptoms persist. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen.

**Skin Contact:** Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

**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.

**Indication of immediate medical attention and special treatment needed**

**Treatment:** Treat symptomatically. Symptoms may be delayed.

## 5. Fire-fighting measures

**General Fire Hazards:** Highly flammable liquid and vapour. In case of fire and/or explosion do not breathe fumes.

### Suitable (and unsuitable) extinguishing media

**Suitable extinguishing media:** Water spray, foam, dry powder or carbon dioxide.

**Unsuitable extinguishing media:** Avoid water in straight hose stream; will scatter and spread 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. 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:** Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment. Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

**Methods and material for containment and cleaning up:** Eliminate all ignition sources if safe to do so. 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. Use only non-sparking tools. All equipment used when handling the product must be grounded.

**Notification Procedures:** Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. 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. Avoid discharge into drains, water courses or onto the ground.

## 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. Use personal protective equipment as required. Avoid breathing mists or vapors. Do not taste or swallow. Use only with adequate ventilation. Wash hands thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment. Ground/bond container and receiving equipment. Avoid contact with eyes. Avoid contact with skin. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection. Wash contaminated clothing before reuse.

**Conditions for safe storage, including any incompatibilities:** Keep away from food, drink and animal feeding stuffs. Keep containers tightly closed. Keep 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

#### Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
METHYL ETHYL KETONE	TWA	200 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	300 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	300 ppm 885 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	200 ppm 590 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	200 ppm 590 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	200 ppm 590 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	300 ppm 885 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

#### Biological Limit Values

Chemical Identity	Exposure Limit Values	Source
METHYL ETHYL KETONE (MEK: Sampling time: End of shift.)	2 mg/l (Urine)	ACGIH BEL (03 2013)

**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

<b>Hand Protection:</b>	Chemical resistant gloves
<b>Other:</b>	Wear suitable protective clothing.
<b>Respiratory Protection:</b>	In case of inadequate ventilation use suitable respirator. Chemical respirator with organic vapor cartridge and full facepiece.
<b>Hygiene measures:</b>	Provide eyewash station and safety shower. Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Do not eat, drink or smoke when using the product. Wash contaminated clothing before reuse. Avoid contact with eyes, skin, and clothing.

## 9. Physical and chemical properties

### Appearance

<b>Physical state:</b>	Liquid
<b>Form:</b>	Liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Fresh minty odor
<b>Odor threshold:</b>	No data available.
<b>pH:</b>	No data available.
<b>Melting point/freezing point:</b>	-86.6 °C
<b>Initial boiling point and boiling range:</b>	80 °C
<b>Flash Point:</b>	-9 °C (Closed Cup)
<b>Evaporation rate:</b>	2.7 ether=1
<b>Flammability (solid, gas):</b>	No data available.
<b>Upper/lower limit on flammability or explosive limits</b>	
<b>Flammability limit - upper (%):</b>	10 %(V)
<b>Flammability limit - lower (%):</b>	1.8 %(V)
<b>Explosive limit - upper (%):</b>	No data available.
<b>Explosive limit - lower (%):</b>	No data available.
<b>Vapor pressure:</b>	12.1 kPa (25 °C)
<b>Vapor density:</b>	2.41 AIR=1
<b>Relative density:</b>	0.81 (20 °C)
<b>Solubility(ies)</b>	
<b>Solubility in water:</b>	280 g/l
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	0.29
<b>Auto-ignition temperature:</b>	404 °C
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.

### Other information

<b>Molecular weight:</b>	72.11 g/mol (C <sub>4</sub> H <sub>8</sub> O)
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## 10. Stability and reactivity

<b>Reactivity:</b>	No dangerous reaction known under conditions of normal use.
<b>Chemical Stability:</b>	Material is stable under normal conditions.
<b>Possibility of Hazardous Reactions:</b>	Hazardous polymerization does not occur.

<b>Conditions to Avoid:</b>	Heat, sparks, flames. Contact with incompatible materials.
<b>Incompatible Materials:</b>	Strong oxidizing agents. Strong bases. Caustics. Amines.
<b>Hazardous Decomposition Products:</b>	Oxides of Carbon.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion:</b>	Harmful if swallowed.
<b>Inhalation:</b>	Harmful if inhaled.
<b>Skin Contact:</b>	May cause irritation.
<b>Eye contact:</b>	Causes serious eye irritation.

### Information on toxicological effects

#### Acute toxicity (list all possible routes of exposure)

##### Oral

<b>Product:</b>	LD 50 (Mouse): 670 mg/kg LD 50 (Rat): 2,300 - 3,500 mg/kg
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##### Dermal

<b>Product:</b>	LD 50 (Rabbit): > 8,000 mg/kg
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##### Inhalation

<b>Product:</b>	LC 50 (Rat, 4 h): 11700 ppm
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##### Repeated Dose Toxicity

<b>Product:</b>	No data available.
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##### Skin Corrosion/Irritation

<b>Product:</b>	May cause skin irritation.
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##### Serious Eye Damage/Eye Irritation

<b>Product:</b>	Causes serious eye irritation.
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##### Respiratory or Skin Sensitization

<b>Product:</b>	Not a skin nor a respiratory sensitizer.
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##### Carcinogenicity

<b>Product:</b>	This substance has no evidence of carcinogenic properties.
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#### 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

#### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

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:** May cause respiratory irritation. May cause drowsiness or dizziness.

### Specific Target Organ Toxicity - Repeated Exposure

**Product:** No data available.

### Aspiration Hazard

**Product:** May be harmful if swallowed and enters airways.

**Other Effects:** No data available.

## 12. Ecological information

### Ecotoxicity:

#### Acute hazards to the aquatic environment:

##### Fish

**Product:** No data available.

##### Specified substance(s):

METHYL ETHYL  
KETONE  
LC 50 (Bluegill (*Lepomis macrochirus*), 48 h): 5,640 mg/l Mortality  
LC 50 (Fathead minnow (*Pimephales promelas*), 96 h): 3,130 - 3,320 mg/l Mortality  
LC 50 (Western mosquitofish (*Gambusia affinis*), 96 h): 5,600 mg/l Mortality  
LC 50 (Carp (*Leuciscus idus melanotus*), 48 h): 4,600 mg/l Mortality

##### Aquatic Invertebrates

**Product:** No data available.

##### Specified substance(s):

METHYL ETHYL  
KETONE  
LC 50 (Brine shrimp (*Artemia salina*), 24 h): 1,950 mg/l Mortality  
LC 50 (Water flea (*Daphnia magna*), 24 h): 8,890 mg/l Mortality  
EC 50 (Water flea (*Daphnia magna*), 48 h): 4,025 - 6,440 mg/l Intoxication

#### Chronic hazards to the aquatic environment:

##### Fish

**Product:** No data available.

##### Aquatic Invertebrates

**Product:** No data available.

##### Toxicity to Aquatic Plants

**Product:** No data available.

### Persistence and Degradability

#### Biodegradation

**Product:** Expected to be readily biodegradable.

#### 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: 0.29

**Mobility in Soil:** The product is water soluble and may spread in water systems.

**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 1193
UN Proper Shipping Name:	Ethyl methyl ketone
Transport Hazard Class(es)	
Class(es):	3
Label(s):	3
Packing Group:	II
Marine Pollutant:	No

### IMDG

UN Number:	UN 1193
UN Proper Shipping Name:	ETHYL METHYL KETONE
Transport Hazard Class(es)	
Class(es):	3
Label(s):	3
EmS No.:	F-E, S-D
Packing Group:	II
Marine Pollutant:	No

### IATA

UN Number:	UN 1193
Proper Shipping Name:	Ethyl methyl ketone
Transport Hazard Class(es):	
Class(es):	3
Label(s):	3
Marine Pollutant:	No
Packing Group:	II

## 15. Regulatory information

### US Federal Regulations

#### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)



**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):**

METHYL ETHYL KETONE Reportable quantity: 5000 lbs.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**

Acute (Immediate)  Chronic (Delayed)  Fire  Reactive  Pressure Generating

**SARA 302 Extremely Hazardous Substance**

None present or none present in regulated quantities.

**SARA 304 Emergency Release Notification**

Chemical Identity	RQ
METHYL ETHYL KETONE	5000 lbs.

**SARA 311/312 Hazardous Chemical**

Chemical Identity	Threshold Planning Quantity
METHYL ETHYL KETONE	500 lbs

**SARA 313 (TRI Reporting)**

None present or none present in regulated quantities.

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

None present or none present in regulated quantities.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**

None present or none present in regulated quantities.

**US State Regulations**

**US. California Proposition 65**

No ingredient regulated by CA Prop 65 present.

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

METHYL ETHYL KETONE Listed

**US. Massachusetts RTK - Substance List**

METHYL ETHYL KETONE Listed

**US. Pennsylvania RTK - Hazardous Substances**

METHYL ETHYL KETONE Listed

**US. Rhode Island RTK**

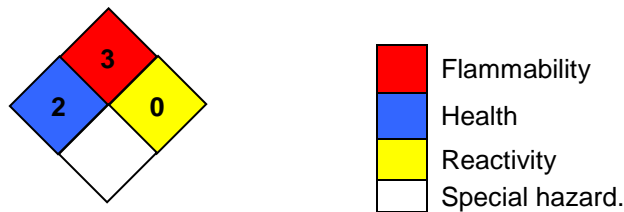
METHYL ETHYL KETONE Listed

**Inventory Status:**

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Japan Pharmacopoeia Listing:	Not 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

<b>Issue Date:</b>	10-20-2014
<b>Revision Date:</b>	No data available.
<b>Version #:</b>	1.0
<b>Further Information:</b>	No data available.

**Disclaimer:**

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