

# SAFETY DATA SHEET

**1. Identification**

**Product identifier:** ISOPROPYL ETHER

**Other means of identification**

**Product No.:** 9243

**Recommended use and restriction on use**

**Recommended use:** Not determined.

**Restrictions on use:** Not determined.

**Details of the supplier of the safety data sheet**

	Avantor Performance Materials, LLC.
	3477 Corporate Parkway
	Center Valley, PA 18034
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	Customer Service: 855-282-6867
Fax:	610-573-2610
Contact Person:	Environmental Health & Safety
E-mail:	info@avantormaterials.com

**Emergency telephone number:**

CHEMTREC: 1-800-424-9300 within US and Canada

**2. Hazard(s) identification**

**Hazard Classification**

**Physical Hazards**

Flammable liquids	Category 2
Static-accumulating flammable liquid	Category 1

**Health Hazards**

Specific Target Organ Toxicity - Single Exposure	Category 3
Specific Target Organ Toxicity - Repeated Exposure	Category 3

**Unknown toxicity - Health**

Acute toxicity, dermal	100 %
Acute toxicity, inhalation, vapor	100 %
Acute toxicity, inhalation, dust or mist	100 %

**Unknown toxicity - Environment**

Acute hazards to the aquatic environment	100 %
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Chronic hazards to the aquatic environment 100 %

**Label Elements**

**Hazard Symbol:**



**Signal Word:** Danger

**Hazard Statement:** Highly flammable liquid and vapor.  
May cause respiratory irritation.  
May cause drowsiness or dizziness.

**Precautionary Statements**

**Prevention:** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting] equipment. Use non-sparking tools. Take action to prevent static discharges. Wear protective gloves/eye protection/face protection. Avoid breathing dust/mist/vapors. Use only outdoors or in a well-ventilated area.

**Response:** In case of fire: Use water spray, foam, dry powder or carbon dioxide for extinction. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

**Storage:** Store in a well-ventilated place. Keep cool. Keep container tightly closed. 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.

**Other hazards which do not result in GHS classification:** Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment.

**3. Composition/information on ingredients**

**Substances**

Chemical name	Common name and synonyms	CAS number	Content in percent (%)*
ISOPROPYL ETHER		108-20-3	99 - 100%

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

#### 4. First-aid measures

<b>General information:</b>	Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.
<b>Ingestion:</b>	Rinse mouth. Get medical attention if symptoms occur.
<b>Inhalation:</b>	Move to fresh air. Get medical attention if symptoms persist.
<b>Skin Contact:</b>	Wash skin thoroughly with soap and water. Get medical attention if symptoms occur. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse.
<b>Eye contact:</b>	Flush thoroughly with water. If irritation occurs, get medical assistance.

#### Most important symptoms/effects, acute and delayed

<b>Symptoms:</b>	May cause skin and eye irritation. In high concentrations, vapors and aerosol mists have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Gastrointestinal symptoms, including upset stomach.
<b>Hazards:</b>	None known.

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

<b>Treatment:</b>	Treat symptomatically.
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#### 5. Fire-fighting measures

<b>General Fire Hazards:</b>	Highly flammable liquid and vapor. Static charges generated by emptying package in or near flammable vapor may cause flash fire.
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#### Suitable (and unsuitable) extinguishing media

<b>Suitable extinguishing media:</b>	Water spray, fog, CO2, dry chemical, or regular foam.
<b>Unsuitable extinguishing media:</b>	Avoid water in straight hose stream; will scatter and spread fire.

<b>Specific hazards arising from the chemical:</b>	Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations. Static charges may be generated while material is being poured from drum.
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#### Special protective equipment and precautions for firefighters

<b>Special fire fighting procedures:</b>	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. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out. In case of fire and/or explosion do not breathe fumes.
<b>Special protective equipment for fire-fighters:</b>	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

<b>Personal precautions, protective equipment and emergency procedures:</b>	Ventilate closed spaces before entering them. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep upwind. See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.
<b>Methods and material for containment and cleaning up:</b>	In case of leakage, eliminate all ignition sources. 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.
<b>Notification Procedures:</b>	Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.
<b>Environmental Precautions:</b>	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer.

<b>7. Handling and storage</b>
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<b>Precautions for safe handling:</b>	Avoid contact with eyes. Wash hands thoroughly after handling. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Take precautionary measures against static discharges. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Avoid contact with skin. Use non-sparking tools and explosion-proof equipment. Use only with adequate ventilation.
<b>Conditions for safe storage, including any incompatibilities:</b>	Keep away from food, drink and animal feeding stuffs. Keep out of reach of children. Keep container tightly closed in a cool, well-ventilated place. Store away from heat and light. 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.

<b>8. Exposure controls/personal protection</b>
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**Control Parameters**

**Occupational Exposure Limits**

Chemical Identity	Type	Exposure Limit Values	Source
ISOPROPYL ETHER	STEL	310 ppm 1.300 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	250 ppm 1.040 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
ISOPROPYL ETHER	TWA	250 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	STEL	310 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
ISOPROPYL ETHER	TWA	250 ppm	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
	STEL	310 ppm	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
ISOPROPYL ETHER	STEL	310 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	TWA	250 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)

ISOPROPYL ETHER	8 HR ACL	250 ppm	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	310 ppm	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
ISOPROPYL ETHER	TWA	250 ppm 1.040 mg/m <sup>3</sup>	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
	STEL	310 ppm 1.300 mg/m <sup>3</sup>	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
ISOPROPYL ETHER	TWA	250 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	310 ppm	US. ACGIH Threshold Limit Values (2011)

**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:** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Chemical respirator with organic vapor cartridge.

**Hygiene measures:** Provide eyewash station and safety shower. 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.

## 9. Physical and chemical properties

### Appearance

<b>Physical state:</b>	Liquid
<b>Form:</b>	Volatile liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Ether-like odor
<b>Odor threshold:</b>	No data available.
<b>pH:</b>	No data available.
<b>Melting point/freezing point:</b>	-86,8 °C
<b>Initial boiling point and boiling range:</b>	68 °C
<b>Flash Point:</b>	-28 °C (Closed Cup)
<b>Evaporation rate:</b>	No data available.
<b>Flammability (solid, gas):</b>	Class IB Flammable Liquid

**Upper/lower limit on flammability or explosive limits**

<b>Flammability limit - upper (%):</b>	7,9 %(V) 7,9 %(V)
<b>Flammability limit - lower (%):</b>	1,4 %(V) 1,4 %(V)
<b>Explosive limit - upper (%):</b>	No data available.
<b>Explosive limit - lower (%):</b>	No data available.
<b>Vapor pressure:</b>	19,9 kPa (25 °C)
<b>Vapor density:</b>	3,5 (Air=1)
<b>Density:</b>	0,73 g/ml (20 °C) 0,7258 g/cm <sup>3</sup>
<b>Relative density:</b>	0,7258 (20 °C)
<b>Solubility(ies)</b>	
<b>Solubility in water:</b>	2 g/l
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	1,52
<b>Auto-ignition temperature:</b>	830 °F
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.
<b>Other information</b>	
<b>Molecular weight:</b>	102,18 g/mol (C <sub>6</sub> H <sub>14</sub> O)

**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>	Prolonged contact with air may cause formation of explosive peroxides. Heat, sparks, flames. Contact with incompatible materials.
<b>Incompatible Materials:</b>	Strong oxidizing agents. Acids.
<b>Hazardous Decomposition Products:</b>	Thermal decomposition may release oxides of carbon.

**11. Toxicological information**

**Information on likely routes of exposure**

<b>Inhalation:</b>	May cause irritation to the respiratory system. May cause drowsiness or dizziness.
<b>Skin Contact:</b>	Causes mild skin irritation.
<b>Eye contact:</b>	Causes serious eye irritation.
<b>Ingestion:</b>	Expected to be a low ingestion hazard.

**Information on toxicological effects**

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

**Oral**

**Product:** LD 50 (Rat): 5.880 mg/kg

**Dermal**

**Product:** No data available.

**Inhalation**

**Product:** No data available.

**Repeated dose toxicity**

**Product:** No data available.

**Skin Corrosion/Irritation**

**Product:** Causes mild skin irritation.

**Serious Eye Damage/Eye Irritation**

**Product:** May cause temporary eye irritation.

**Respiratory or Skin Sensitization**

**Product:** Not a skin sensitizer.

**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

**ACGIH Carcinogen List:**

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. Narcotic effect.

**Specific Target Organ Toxicity - Repeated Exposure**

**Product:** None known.

**Aspiration Hazard**

**Product:** Not classified

**Other effects:**

None known.

**12. Ecological information**

**Ecotoxicity:**

**Acute hazards to the aquatic environment:**

**Fish**

**Product:** No data available.

**Aquatic Invertebrates**

**Product:** No data available.

**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:** Not readily degradable.

**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: 1,52

**Mobility in soil:**

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.

**Contaminated Packaging:**

Since emptied containers retain product residue, follow label warnings even after container is emptied.



<b>14. Transport information</b>
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**TDG**

UN Number:	UN 1159
UN Proper Shipping Name:	DIISOPROPYL ETHER
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 1159
UN Proper Shipping Name:	DIISOPROPYL ETHER
Transport Hazard Class(es)	
Class:	3
Label(s):	3
EmS No.:	F-E, S-D
Packing Group:	II
Marine Pollutant:	No
Special precautions for user:	Not determined.

**IATA**

UN Number:	UN 1159
UN Proper Shipping Name:	Diisopropyl ether
Transport Hazard Class(es):	
Class:	3
Label(s):	3
Packing Group:	II
Marine Pollutant:	No
Special precautions for user:	Not determined.
Cargo aircraft only:	Allowed.

**Transport in bulk according to Annex II of MARPOL and the IBC Code:** Not applicable

<b>15. Regulatory information</b>
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**Canada Federal Regulations**

**List of Toxic Substances (CEPA, Schedule 1)**

Not Regulated

**Export Control List (CEPA 1999, Schedule 3)**

Not Regulated

**National Pollutant Release Inventory (NPRI)**

**Canada. National Pollutant Release Inventory (NPRI) Substances, Part 5, VOCs with Additional Reporting Requirements**

NPRI PT5                      Not Regulated

**Canada. National Pollutant Release Inventory (NPRI) (Schedule 1, Parts 1-4)**

NPRI                              Not Regulated

**Greenhouse Gases**

Not Regulated

**Controlled Drugs and Substances Act**

CA CDSI                              Not Regulated

CA CDSII	Not Regulated
CA CDSIII	Not Regulated
CA CDSIV	Not Regulated
CA CDSV	Not Regulated
CA CDSVII	Not Regulated
CA CDSVIII	Not Regulated

**Precursor Control Regulations**

Not Regulated

**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
EU EINECS List:	On or in compliance with the inventory
EU ELINCS List:	Not in compliance with the inventory.
Japan (ENCS) List:	Not in compliance with the inventory.
EU No Longer Polymers List:	Not 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**

<b>Revision Date:</b>	16.05.2018
<b>Version #:</b>	1.1
<b>Further Information:</b>	No data available.

**Disclaimer:**

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