

# SAFETY DATA SHEET

## 1. Identification

**Product identifier:** 2-METHYLBUTANE

**Other means of identification**

**Product No.:** 1967, Q223

**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 1

**Health Hazards**

Specific Target Organ Toxicity - Category 3

Single Exposure

Aspiration Hazard Category 1

**Environmental Hazards**

Chronic hazards to the aquatic environment Category 2

**Label Elements**

**Hazard Symbol:**



**Signal Word:** Danger

**Hazard Statement:** Extremely flammable liquid and vapor.  
May be fatal if swallowed and enters airways.  
May cause drowsiness or dizziness.  
Toxic to aquatic life with long lasting effects.

## Precautionary Statement

- Prevention:** Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Avoid release to the environment.
- Response:** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. Collect spillage.
- 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.

Other hazards which do not result in GHS classification:

None.

## 3. Composition/information on ingredients

### Substances

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%) <sup>*</sup>
ISOPENTANE		78-78-4	90 - 100%

<sup>\*</sup> 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. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. 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:** Flush thoroughly with water. If irritation occurs, get medical assistance.

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

- Symptoms:** Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. May cause irritation to skin, eyes, and respiratory tract.

### 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. 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:** 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. 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:** Eliminate all ignition sources if safe to do so. Take precautionary measures against static discharges. Stop leak if possible without any risk. Use only 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. Stop leak if you can do so 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. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Wear protective gloves/protective clothing/eye protection/face protection. Avoid contact with eyes, skin, and clothing. Avoid inhalation of vapors. Do not taste or swallow. 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. 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

#### Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
ISOPENTANE	TWA	1,000 ppm	US. ACGIH Threshold Limit Values (02 2014)

**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:** Pleasant odor  
**Odor threshold:** No data available.

<b>pH:</b>	No data available.
<b>Melting point/freezing point:</b>	-160.5 °C
<b>Initial boiling point and boiling range:</b>	28 °C (101.3 kPa)
<b>Flash Point:</b>	< -51 °C (Closed Cup)
<b>Evaporation rate:</b>	No data available.
<b>Flammability (solid, gas):</b>	No data available.
<b>Upper/lower limit on flammability or explosive limits</b>	
<b>Flammability limit - upper (%):</b>	7.6 %(V)
<b>Flammability limit - lower (%):</b>	1.4 %(V)
<b>Explosive limit - upper (%):</b>	No data available.
<b>Explosive limit - lower (%):</b>	No data available.
<b>Vapor pressure:</b>	79.3 kPa (21.1 °C) 91.9 kPa (25 °C)
<b>Vapor density:</b>	No data available.
<b>Relative density:</b>	0.62 (20 °C)
<b>Solubility(ies)</b>	
<b>Solubility in water:</b>	Insoluble in water
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	2.30
<b>Auto-ignition temperature:</b>	420 °C
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.
<b>Other information</b>	
<b>Molecular weight:</b>	72.15 g/mol (C <sub>5</sub> H <sub>12</sub> )

## 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.
<b>Hazardous Decomposition Products:</b>	Oxides of Carbon.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion:</b>	May cause irritation of the gastrointestinal tract.
<b>Inhalation:</b>	May cause irritation to the respiratory system. May cause drowsiness or dizziness.
<b>Skin Contact:</b>	May cause irritation.
<b>Eye contact:</b>	May cause temporary eye irritation.

**Information on toxicological effects****Acute toxicity (list all possible routes of exposure)****Oral****Product:** No data available.**Dermal****Product:** No data available.**Inhalation****Product:** LC 50 (Mouse, 2 h): 450 mg/l  
LC 50 (Mouse, 1 h): 1,000 mg/l  
LC 50 (Mouse, 2 h): 140000 ppm**Repeated Dose Toxicity****Product:** No data available.**Skin Corrosion/Irritation****Product:** May cause skin irritation.**Serious Eye Damage/Eye Irritation****Product:** May irritate eyes.**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

**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:** No data available.**Specific Target Organ Toxicity - Repeated Exposure****Product:** No data available.**Aspiration Hazard****Product:** May be fatal if swallowed and enters airways.**Other Effects:**

None known.

## 12. Ecological information

### Ecotoxicity:

#### Acute hazards to the aquatic environment:

##### Fish

**Product:** LC 50 (Rainbow trout,donaldson trout (Oncorhynchus mykiss), 96 h): 3.1 mg/l

##### Aquatic Invertebrates

**Product:** EC 50 (Water flea (Daphnia magna), 48 h): 2.3 mg/l

#### 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:** 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: 2.30

**Mobility in Soil:** No data available.

**Other Adverse Effects:** Toxic to aquatic life with long lasting effects.

## 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 1265
UN Proper Shipping Name:	Pentanes
Transport Hazard Class(es)	
Class(es):	3
Label(s):	3
Packing Group:	I
Marine Pollutant:	No

### IMDG

UN Number:	UN 1265
UN Proper Shipping Name:	PENTANES
Transport Hazard Class(es)	
Class(es):	3
Label(s):	3
EmS No.:	F-E, S-D
Packing Group:	I
Marine Pollutant:	No

### IATA

UN Number:	UN 1265
Proper Shipping Name:	Pentanes
Transport Hazard Class(es):	
Class(es):	3
Label(s):	3
Marine Pollutant:	No
Packing Group:	I

## 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):

ISOPENTANE Reportable quantity: 100 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
ISOPENTANE	100 lbs.



**SARA 311/312 Hazardous Chemical**

Chemical Identity	Threshold Planning Quantity
ISOPENTANE	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):**

ISOPENTANE Threshold quantity: 10000 lbs

**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**

ISOPENTANE Listed

**US. Massachusetts RTK - Substance List**

ISOPENTANE Listed

**US. Pennsylvania RTK - Hazardous Substances**

ISOPENTANE Listed

**US. Rhode Island RTK**

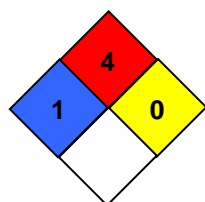
ISOPENTANE Listed

**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**



Red	Flammability
Blue	Health
Yellow	Reactivity
White	Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

**Issue Date:** 01-28-2015

**Revision Date:** No data available.

**Version #:** 1.0

**Further Information:** No data available.

**Disclaimer:** THE INFORMATION PRESENTED IN THIS MATERIAL SAFETY DATA SHEET (MSDS/SDS) WAS PREPARED BY TECHNICAL PERSONNEL BASED ON DATA THAT THEY BELIEVE IN THEIR GOOD FAITH JUDGMENT IS ACCURATE. HOWEVER, THE INFORMATION PROVIDED HEREIN IS PROVIDED "AS IS," AND AVANTOR PERFORMANCE MATERIALS MAKES AND GIVES NO REPRESENTATIONS OR WARRANTIES WHATSOEVER, AND EXPRESSLY DISCLAIMS ALL WARRANTIES REGARDING SUCH INFORMATION AND THE PRODUCT TO WHICH IT RELATES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION<(>,<)> WARRANTIES OF ACCURACY, COMPLETENESS, MERCHANTABILITY, NON-INFRINGEMENT, PERFORMANCE, SAFETY, SUITABILITY, STABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. THIS MSDS/SDS IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PROPERLY TRAINED PERSON USING THIS PRODUCT, AND IS NOT INTENDED TO BE COMPREHENSIVE AS TO THE MANNER AND CONDITIONS OF USE, HANDLING, STORAGE, OR DISPOSAL OF THE PRODUCT. INDIVIDUALS RECEIVING THIS MSDS/SDS MUST ALWAYS EXERCISE THEIR OWN INDEPENDENT JUDGMENT IN DETERMINING THE APPROPRIATENESS OF SUCH ISSUES. ACCORDINGLY, AVANTOR PERFORMANCE MATERIALS ASSUMES NO LIABILITY WHATSOEVER FOR THE USE OF OR RELIANCE UPON THIS INFORMATION. NO SUGGESTIONS FOR USE ARE INTENDED AS, AND NOTHING HEREIN SHALL BE CONSTRUED AS, A RECOMMENDATION TO INFRINGE ANY EXISTING PATENTS OR TO VIOLATE ANY FEDERAL, STATE, LOCAL, OR FOREIGN LAWS. AVANTOR PERFORMANCE MATERIALS REMINDS YOU THAT IT IS YOUR LEGAL DUTY TO MAKE ALL INFORMATION IN THIS MSDS/SDS AVAILABLE TO YOUR EMPLOYEES.