

# SAFETY DATA SHEET

**Preparation Date:** No data available

**Revision Date:** 03/30/2015

**Revision Number:** G1

**Product identifier**

**Product code:** M1246  
**Product Name:** 2-METHYLBUTANE, REAGENT

**Other means of identification**

**Synonyms:** 1,1,2-Trimethylethane  
 2-Methylbutane  
 Butane, 2-methyl-  
 Dimethylethylmethane  
 Ethyldimethylmethane  
 Isoamylhydride  
 Isopentane  
**CAS #:** 78-78-4  
**RTECS #** EK4430000  
**CI#:** Not available

**Recommended use of the chemical and restrictions on use**

**Recommended use:** No information available.  
**Uses advised against** No information available

**Supplier:** Spectrum Chemicals and Laboratory Products, Inc.  
 14422 South San Pedro St.  
 Gardena, CA 90248  
 (310) 516-8000

**Order Online At:** <https://www.spectrumchemical.com>

**Emergency telephone number** Chemtrec 1-800-424-9300  
**Contact Person:** Martin LaBenz (West Coast)  
**Contact Person:** Ibad Tirmiz (East Coast)

## 2. HAZARDS IDENTIFICATION

**Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Specific target organ toxicity (single exposure)	Category 3
Aspiration toxicity	Category 1
Flammable liquids	Category 1

**Label elements**

## Danger

### Hazard statements

May cause respiratory irritation. May cause drowsiness or dizziness

May be fatal if swallowed and enters airways

Extremely flammable liquid and vapor



### Hazards not otherwise classified (HNOC)

Not Applicable

### Other hazards

Toxic to aquatic life with long lasting effects

Toxic to aquatic life

Repeated exposure may cause skin dryness or cracking

### Precautionary Statements - Prevention

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

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/protective clothing/eye protection/face protection

Keep cool

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam to extinguish.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

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.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Do NOT induce vomiting

### Precautionary Statements - Storage

Store locked up

Store in a well-ventilated place. Keep container tightly closed

### Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

2-Methylbutane 78-78-4	78-78-4	100	*
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### 4. FIRST AID MEASURES

#### First aid measures

##### **General Advice:**

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126).

##### **Skin Contact:**

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops.

##### **Eye Contact:**

Flush eye with water for 15 minutes. Get medical attention.

##### **Inhalation:**

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

##### **Ingestion:**

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

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

##### **Symptoms**

Fatal if swallowed. Repeated or prolonged exposure may cause dryness or cracking of the skin. Dizziness. Drowsiness. May cause eye irritation.

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

##### **Notes to Physician:**

Treat symptomatically

#### Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

### 5. FIRE-FIGHTING MEASURES

#### Extinguishing Media

##### **Suitable Extinguishing Media:**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

##### **Unsuitable Extinguishing Media:**

Do not use a solid (straight) water stream as it may scatter and spread fire.

#### Specific hazards arising from the chemical

##### **Hazardous Combustion Products:**

Carbon oxides

##### **Specific hazards:**

Extremely flammable  
May be ignited by heat, sparks or flames  
Containers may explode when heated  
Vapor may travel considerable distance to source of ignition and flash back  
Vapors or dust may form explosive mixtures with air  
Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks)  
It may decompose upon heating to produce corrosive and/or toxic fumes

## **Special Protective Actions for Firefighters**

### **Specific Methods:**

Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

### **Special Protective Equipment for Firefighters:**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

## **6. ACCIDENTAL RELEASE MEASURES**

### **Personal precautions, protective equipment and emergency procedures**

#### **Personal Precautions:**

Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

#### **Environmental precautions**

Do not let product enter drains. Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

### **Methods and material for containment and cleaning up**

#### **Methods for containment**

Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. Use clean non-sparking tools to collect absorbed material..

#### **Methods for cleaning up**

Use clean non-sparking tools to collect absorbed material. wear personal protective equipment. Dike far ahead of spill; use dry sand to contain the flow of material.

## **7. HANDLING AND STORAGE**

### **Precautions for safe handling**

#### **Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. All equipment used when handling the product must be grounded. Avoid dust formation. Keep away from incompatible materials. Remove all sources of ignition.

#### **Safe Handling Advice:**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Do not ingest. Keep away from heat and sources of ignition. Vapours may form explosive mixtures with air. Handle in accordance with good industrial hygiene and safety practice. Use only explosion-proof equipment.

### **Conditions for safe storage, including any incompatibilities**

#### **Technical Measures/Storage Conditions:**

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Store in a segregated and approved area. Store away from incompatible materials.

#### **Incompatible Materials:**

Oxidizing agents.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **Control parameters**

### **National occupational exposure limits**

**United States**

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
2-Methylbutane - 78-78-4	None	None	= 600 ppm TWA	None

**Canada**

Components	Alberta	British Columbia	Ontario	Quebec
2-Methylbutane - 78-78-4	= 1770 mg/m <sup>3</sup> TWA = 600 ppm TWA	= 600 ppm TWA	600 ppm TWA Pentane, all isomers 1770 mg/m <sup>3</sup> TWA Pentane, all isomers	None

**Australia and Mexico**

Components	Australia	Mexico
2-Methylbutane 78-78-4	None	None

**Appropriate engineering controls****Engineering measures to reduce exposure:**

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

**Individual protection measures, such as personal protective equipment****Personal Protective Equipment**

**Eye protection:** Goggles.

**Skin and body protection:** Chemical resistant apron. Long sleeved clothing. Gloves.

**Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

**Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

<b>9. PHYSICAL AND CHEMICAL PROPERTIES</b>
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## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b> Liquid.	<b>Appearance:</b> No information available	<b>Color:</b> Colorless.
<b>Odor:</b> Mild. Pleasant. Gasoline-like.	<b>Taste</b> No information available	<b>Molecular/Formula weight:</b> 72.15 g/mol
<b>Formula:</b> C <sub>5</sub> H <sub>12</sub>	<b>Flash point (°C):</b> -51°C	<b>Flashpoint (°C/°F):</b> -51°C/ -59.8°F
<b>Flash Point Tested according to:</b> Closed cup	<b>Lower Explosion Limit (%):</b> 1.4%	<b>Upper Explosion Limit (%):</b> 7.6%
<b>Autoignition Temperature (°C/°F):</b> No information available	<b>pH:</b> No information available	<b>Melting point/range(°C/°F):</b> -159.9°C/ -255.8°F
<b>Boiling point/range(°C/°F):</b> 27.85°C/ 82.1°F	<b>Decomposition temperature(°C/°F):</b> No information available	<b>Bulk density:</b> No information available
<b>Specific gravity:</b> 0.6197	<b>Vapor pressure @ 20°C (kPa):</b> 79.3	<b>Density (g/cm<sup>3</sup>):</b> 0.62
<b>Evaporation rate:</b> No information available	<b>Vapor density:</b> 2.48	<b>VOC content (g/L):</b> No information available
<b>Odor threshold (ppm):</b> No information available	<b>Partition coefficient (n-octanol/water):</b> 2.72	<b>Viscosity:</b> 0.214 cP @ 20°C
<b>Miscibility:</b> No information available	<b>Solubility:</b> Insoluble in cold water Insoluble in hot water Miscible in Alcohols Miscible in Ether Soluble in hydrocarbons Soluble in Oils	

## 10. STABILITY AND REACTIVITY

### Reactivity

Reactive with oxidizing agents

### Chemical stability

**Stability:** Stable under recommended storage conditions

**Possibility of Hazardous Reactions:** In use, may form flammable/explosive vapor-air mixture

**Conditions to avoid:** Heat. Ignition sources. Incompatible materials.

**Incompatible Materials:** Oxidizing agents.

**Hazardous decomposition products:** Carbon oxides.

### Other Information

**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Principal Routes of Exposure:

None.

### Acute Toxicity

#### Component Information

##### *2-Methylbutane - 78-78-4*

LD50/oral/rat = No information available  
LD50/oral/mouse = No information available  
LD50/dermal/rat = No information available  
LD50/dermal/rabbit = No information available  
LC50/inhalation/rat = 280000 mg/m<sup>3</sup> 4H  
LC50/inhalation/mouse = 150000 mg/m<sup>3</sup> 2H  
Other LD50 or LC50 information = No information available

#### Product Information

LD50/oral/rat =  
VALUE- Acute Tox Oral = No information available

LD50/oral/mouse =  
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit  
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat  
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat  
VALUE-Vapor = 280000mg/m<sup>3</sup> (4-hr)  
VALUE-Gas = No information available  
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse  
VALUE-Vapor = 150000 mg/m<sup>3</sup> (2-hr)  
VALUE - Gas = No information available  
VALUE - Dust/Mist = No information available

### Symptoms

**Skin Contact:** Causes skin irritation. Skin contact may result in redness, pain, inflammation, itching, scaling.

**Eye Contact:** Causes eye irritation.

**Inhalation** Inhalation of mist or vapors may cause respiratory tract irritation. It may also cause pulmonary edema, chemical pneumonitis. It can also affect behavior/central nervous system and result in central nervous system depression. Symptoms may include excitement followed by headache, dizziness, drowsiness/sleepiness, weakness, loss of coordination, nausea, collapse, unconsciousness, coma and possible death due to respiratory failure.

**Ingestion** Toxic if swallowed. May affect behavior/central nervous system (dizziness, faintness followed by headache, weakness, loss of coordination, nausea, collapse, unconsciousness, coma and possible death due to respiratory failure. .

**Aspiration hazard** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Chronic Toxicity** Prolonged or repeated skin contact may cause dermatitis and defatting, dryness, and cracking of the skin. Prolonged or repeated ingestion may cause weight loss.

**Sensitization:** No information available

**Mutagenic Effects:** No information available

**Carcinogenic effects:** Not considered carcinogenic

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
2-Methylbutane	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

**Reproductive toxicity** No data is available

**Reproductive Effects:** No information available  
**Developmental Effects:** No information available  
**Teratogenic Effects:** No information available

**Specific Target Organ Toxicity**

**STOT - single exposure** No information available  
**STOT - repeated exposure** No information available  
**Target Organs:** No information available

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Ecotoxicity effects:** Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

*2-Methylbutane - 78-78-4*

**Water Flea Data:** 2.3 mg/L EC50 Daphnia magna 48 h

**Persistence and degradability:** No information available

**Bioaccumulative potential:** No information available

**Mobility:** No information available



### 13. DISPOSAL CONSIDERATIONS

#### Disposal Methods

**Waste from residues / unused products:**

Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
2-Methylbutane	None	None	None	None

### 14. TRANSPORT INFORMATION

**DOT**

UN-No: UN1265  
Proper Shipping Name: Pentanes  
Hazard Class: 3  
Subsidiary Risk:  
Packing Group: I  
ERG No: 128  
Marine Pollutant No data available  
DOT RQ (lbs): No information available

**Symbol(s):****TDG (Canada)**

UN-No: UN1265  
Proper Shipping Name: Pentanes  
Hazard Class: 3  
Subsidiary Risk: No information available  
Packing Group: I  
Description: No information available

**ADR**

UN-No: UN1265  
Proper Shipping Name: Pentanes  
Hazard Class: 3  
Packing Group: I  
Subsidiary Risk: No information available  
Classification Code: No information available  
Description: No information available  
CEFIC Tremcard No: No information available

**IMO / IMDG**

UN-No: UN1265  
Proper Shipping Name: Pentanes  
Hazard Class: 3  
Subsidiary Risk: No information available  
Packing Group: I  
Description: No information available  
IMDG Page: No information available  
Marine Pollutant No information available  
EMS: F-E

#### 14. TRANSPORT INFORMATION

MFAG: No information available  
Maximum Quantity: No information available

##### RID

UN-No: UN1265  
Proper Shipping Name: Pentanes  
Hazard Class: 3  
Subsidiary Risk: No information available  
Packing Group: I  
Classification Code: No information available  
Description: No information available

##### ICAO

UN-No: UN1265  
Proper Shipping Name: Pentanes  
Hazard Class: 3  
Subsidiary Risk: No information available  
Packing Group: I  
Description: No information available

##### IATA

UN-No: UN1265  
Proper Shipping Name: Pentanes  
Hazard Class: 3  
Subsidiary Risk: No information available  
Packing Group: I  
ERG Code: 3H  
Description: No information available

#### 15. REGULATORY INFORMATION

##### International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
2-Methylbutane	Present	Present KE-23537	Present	Present (2)-5	Present	Present	Present 201-142-8

##### U.S. Regulations

###### 2-Methylbutane

Massachusetts RTK: Present  
New Jersey RTK Hazardous Substance List: 1064  
New Jersey (EHS) List: 1064 500 lb TPQ  
New Jersey - Discharge Prevention - List of Hazardous Substances: Present  
New Jersey TCPA - EHS: =10000lbTQ  
Pennsylvania RTK: Present

##### California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

###### Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

###### Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
2-Methylbutane	Not Listed	Not Listed	Not Listed	Not Listed

## CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
2-Methylbutane	None	None	None	None	None

## U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
2-Methylbutane	Not Applicable	Not Applicable

## Canada

### WHMIS hazard class:

Non-controlled

### 2-Methylbutane

B2

### Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

## Inventory

Components	Canada (DSL)	Canada (NDSL)
2-Methylbutane	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
2-Methylbutane	Not listed	Not listed

## EU Classification

### R-phrase(s)

R12 - Extremely flammable.

R65 - Also harmful: may cause lung damage if swallowed

R66 - Repeated exposure may cause skin dryness or cracking.

R67 - Vapors may cause drowsiness and dizziness.

R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### S -phrase(s)

S 2 - Keep out of the reach of children.

S 9 - Keep container in a well-ventilated place.

S16 - Keep away from sources of ignition - No smoking.

S29 - Do not empty into drains.

S33 - Take precautionary measures against static discharges.

S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.

S62 - If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Components	Classification	Concentration Limits:	Safety Phrases
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2-Methylbutane	F+; R12 N; R51-53 Xn; R65  R67	No information	S2 S9 S16 S29 S33 S61 S62
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The product is classified in accordance with Annex VI to Directive 67/548/EEC

**Indication of danger:**

F+ - Extremely flammable.

N - Dangerous for the environment.

Xn - Harmful.



## 16. OTHER INFORMATION

**Revision Date:**

03/30/2015

**Prepared by:**

Sonia Owen

**Disclaimer:**

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet