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## **2-METHYLBUTENE- MATERIAL SAFETY DATA SHEET**

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### **24 Hour EMERGENCY CONTACT**

**U.S- CHEMTREC 1-800-424-9300**

**CANADA- CANUTEC 613-996-6666**

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## **1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

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### **Matheson Tri-Gas, Inc.**

*The telephone numbers listed below are emergency numbers, please contact your local branch for routine inquiries.*

#### **USA**

959 Route 46 East  
Parsippany, New Jersey  
07054-0624 USA  
**Phone: 973-257-1100**

#### **CANADA**

530 Watson Street  
Whitby, Ontario  
L1N 5R9 Canada  
**Phone: 905-668-3570**

**SUBSTANCE: 2-METHYLBUTANE**

**SYMBOL:** C<sub>5</sub>H<sub>12</sub>

**TRADE NAMES/SYNONYMS:**

2-METHYLBUTANE; ETHYLDIMETHYLMETHANE; ISOAMYLHYDRIDE; BUTANE,2-METHYL-;  
1,1,2-TRIMETHYLETHANE; UN 1265; C5H12; MAT11940; RTECS EK4430000

**CHEMICAL FAMILY:** hydrocarbons, aliphatic

**CREATION DATE:** Jan 24 1989

**REVISION DATE:** Mar 16 1999

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**2. COMPOSITION, INFORMATION ON INGREDIENTS**

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**COMPONENT:** 2-METHYLBUTANE

**CAS NUMBER:** 78-78-4

**EC NUMBER (EINECS):** 201-142-8

**EC INDEX NUMBER:** 601-006-00-1

**PERCENTAGE:** 100.0

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**3. HAZARDS IDENTIFICATION**

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**NFPA RATINGS (SCALE 0-4):** HEALTH=2 FIRE=4 REACTIVITY=0

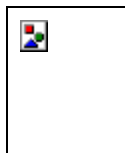
**WHMIS CLASSIFICATION:** B

**EC CLASSIFICATION (ASSIGNED):**

F Highly Flammable

R 11

EC Classification may be inconsistent with independently-researched data.



**EMERGENCY OVERVIEW:**

**Color:** colorless

**Physical Form:** liquid

**Odor:** pleasant odor

**Major Health Hazards:** respiratory tract irritation, skin irritation, eye irritation, central nervous

system depression

**Physical Hazards:** Flammable liquid and vapor. Vapor may cause flash fire.

**POTENTIAL HEALTH EFFECTS:**

**INHALATION:**

**Short Term Exposure:** irritation, difficulty breathing, symptoms of drunkenness

**Long Term Exposure:** no information is available

**SKIN CONTACT:**

**Short Term Exposure:** irritation

**Long Term Exposure:** same as effects reported in short term exposure

**EYE CONTACT:**

**Short Term Exposure:** irritation

**Long Term Exposure:** same as effects reported in short term exposure

**INGESTION:**

**Short Term Exposure:** nausea, stomach pain, symptoms of drunkenness, lung congestion

**Long Term Exposure:** no information is available

**CARCINOGEN STATUS:**

**OSHA:** N

**NTP:** N

**IARC:** N

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## **4. FIRST AID MEASURES**

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**INHALATION:**

Remove from exposure immediately. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Get medical attention.

**SKIN CONTACT:**

Remove contaminated clothing, jewelry, and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical attention, if needed.

**EYE CONTACT:**

Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately.

**INGESTION:**

Contact local poison control center or physician immediately. Never make an unconscious person vomit or drink fluids. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

**NOTE TO PHYSICIAN:**

For ingestion, consider gastric lavage.

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## **5. FIRE FIGHTING MEASURES**

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**FIRE AND EXPLOSION HAZARDS:**

Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive.

**EXTINGUISHING MEDIA:**

regular dry chemical, carbon dioxide, water, regular foam

Large fires: Use regular foam or flood with fine water spray.

**FIRE FIGHTING:**

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Evacuation radius: 800 meters (1/2 mile). Do not attempt to extinguish fire unless flow of material can be stopped first. Flood with fine water spray. Do not scatter spilled material with high-pressure water streams. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Water may be ineffective.

**FLASH POINT:**

<-60 F (<-51 C) (CC)

**LOWER FLAMMABLE LIMIT:**

1.4%

**UPPER FLAMMABLE LIMIT:**

7.6%

**AUTOIGNITION:**

788 F (420 C)

**FLAMMABILITY CLASS (OSHA):**

IA

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**6. ACCIDENTAL RELEASE MEASURES**

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**OCCUPATIONAL RELEASE:**

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry.

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**7. HANDLING AND STORAGE**

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Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Grounding and bonding required. Keep separated from incompatible substances.

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## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

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### EXPOSURE LIMITS:

#### ISOPENTANE:

350 mg/m<sup>3</sup> NIOSH recommended TWA

1800 mg/m<sup>3</sup> NIOSH recommended ceiling 15 minute(s)

**VENTILATION:** Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

**EYE PROTECTION:** Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

**CLOTHING:** Wear appropriate chemical resistant clothing.

**GLOVES:** Wear appropriate chemical resistant gloves.

**RESPIRATOR:** Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode.

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

#### **For Unknown Concentrations or Immediately Dangerous to Life or Health -**

Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.

Any self-contained breathing apparatus with a full facepiece.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**PHYSICAL STATE:** liquid

**COLOR:** colorless

**ODOR:** pleasant odor

**MOLECULAR WEIGHT:** 72.15

**MOLECULAR FORMULA:** C-H<sub>3</sub>-C-H<sub>2</sub>-C-H-(C-H<sub>3</sub>)<sub>2</sub>

**BOILING POINT:** 82 F (28 C)

**FREEZING POINT:** -256 F (-160 C)

**VAPOR PRESSURE:** Not available

**VAPOR DENSITY (air=1):** 2.5

**SPECIFIC GRAVITY (water=1):** 0.6201

**WATER SOLUBILITY:** insoluble

**PH:** Not available

**VOLATILITY:** Not available

**ODOR THRESHOLD:** Not available

**EVAPORATION RATE:** Not available

**COEFFICIENT OF WATER/OIL DISTRIBUTION:** Not available

**SOLVENT SOLUBILITY:**

**Soluble:** ether, alcohol, hydrocarbons, oils

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## **10. STABILITY AND REACTIVITY**

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**REACTIVITY:**

Stable at normal temperatures and pressure.

**CONDITIONS TO AVOID:**

Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Keep out of water supplies and sewers.

**INCOMPATIBILITIES:**

oxidizing materials

**HAZARDOUS DECOMPOSITION:**

Thermal decomposition products: oxides of carbon

**POLYMERIZATION:**

Will not polymerize.

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## **11. TOXICOLOGICAL INFORMATION**

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**ISOPENTANE:**

**TOXICITY DATA:**

1000 gm/m<sup>3</sup> inhalation-mouse LC50

**LOCAL EFFECTS:**

Irritant: inhalation, skin, eye

**ACUTE TOXICITY LEVEL:**

Slightly Toxic: inhalation

**TARGET ORGANS:**

central nervous system

**ADDITIONAL DATA:**

Alcohol may enhance the toxic effects. Stimulants such as epinephrine may induce ventricular fibrillation.

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## 12. ECOLOGICAL INFORMATION

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Not available

## 13. DISPOSAL CONSIDERATIONS

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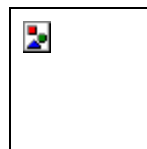
Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.  
Dispose in accordance with all applicable regulations.

## 14. TRANSPORT INFORMATION

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**U.S. DOT 49 CFR 172.101. SHIPPING NAME-UN NUMBER; HAZARD CLASS; PACKING GROUP; LABEL:**

Pentanes-UN1265; 3; I; Flammable liquid



## 15. REGULATORY INFORMATION

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### U.S. REGULATIONS:

TSCA INVENTORY STATUS: Y

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CERCLA SECTION 103 (40CFR302.4): N

SARA SECTION 302 (40CFR355.30): N

SARA SECTION 304 (40CFR355.40): N

SARA SECTION 313 (40CFR372.65): N

SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40CFR370.21):

ACUTE: Y

CHRONIC: N

FIRE: Y

REACTIVE: N

SUDDEN RELEASE: N

OSHA PROCESS SAFETY (29CFR1910.119): N

### STATE REGULATIONS:

California Proposition 65: N

### EUROPEAN REGULATIONS:

EC NUMBER (EINECS): 201-142-8

### EC RISK AND SAFETY PHRASES:

R 11	Highly flammable.
S 2	Keep out of reach of children.
S 9	Keep container in a well-ventilated place.

S 16	Keep away from sources of ignition - No smoking.
S 29	Do not empty into drains.
S 33	Take precautionary measures against static discharges.

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## 16. OTHER INFORMATION

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