



Material Safety Data Sheet

1. Product and Company Identification

Product name : **2-Methyl-2-Butene**

Chemical formula : C₅H₁₀

Synonyms : 1,1,2-Trimethylethylene; Amylene, Beta-Isoamylenes; Trimethylethylene; B-Isoamylenes; 2-Butene,2-Methyl-; UN 2460

Company : Specialty Gases of America, Inc
6055 Brent Dr.
Toledo, OH 43611

Telephone : 419-729-7732

Emergency : 800-424-9300

2. Composition/Information on Ingredients

Components	CAS Number	% Volume
2-Methyl-2-Butene	513-35-9	99+%

3. Hazards Identification

Emergency Overview

Flammable liquid and vapor. Vapor may cause flash fire.
May cause central nervous system depression.

Potential Health Effects

Inhalation : Irritation, nausea, headache, drowsiness, symptoms of drunkenness, disorientation, convulsions.

Eye contact : No information on significant adverse effects.

Skin contact : No information on significant adverse effects.

Ingestion : Diarrhea, difficulty breathing, symptoms of drunkenness, convulsions.

Chronic Health Hazard : None known.

4. First Aid Measures

General advice : None.

Eye contact : Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Skin contact : Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

Ingestion : If a large amount is swallowed, get medical attention.

Inhalation : If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Note to physicians : For inhalation, consider oxygen.

5. Fire-Fighting Measures

- Suitable extinguishing media : Alcohol-resistant foam, carbon dioxide, regular dry chemical, water-resistant foam.
Large fires: Use water-resistant foam or flood with fine water spray.
- Specific hazards : Severe fire hazard. Vapor/air mixtures are explosive above flash point. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.
- 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 or material can be stopped first. Flood with fine water spray. 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.

6. Accidental Release Measures

- Occupational spill/release : Avoid heat, flames, sparks and other sources of ignition. Remove 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. Keep unnecessary people away. Isolate hazard area and deny entry. Stay upwind and keep out of low areas.
- Additional advice : None.

7. Handling and Storage

Handling

Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.

Storage

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

8. Exposure Controls / Personal Protection

Exposure limits

ACGIH, OSHA and NIOSH have not developed exposure limits for any of this product's components.

Engineering measures/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.

Personal protective equipment

- Respiratory protection : 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 positive-

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 a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in 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.

Hand protection	:	Wear appropriate chemical resistant gloves.
Eye protection	:	Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.
Skin and body protection	:	Wear appropriate chemical resistant clothing.

9. Physical and Chemical Properties

Form	:	Volatile liquid.
Color	:	Colorless.
Odor	:	Unpleasant odor.
Vapor pressure	:	14.0 psi @ 38°C
Vapor density	:	2.4 (air = 1)
Boiling point	:	35 - 38°C
Melting point	:	-134°C
Water solubility	:	Slightly soluble
Specific gravity	:	0.6623 (water = 1)
Evaporation rate	:	> 1 (butyl acetate = 1)
Solvent solubility	:	Soluble: alcohol, ether, benzene, ligroin, ethylene oxide

10. Stability and Reactivity

Stability	:	Stable under normal conditions.
Conditions to avoid	:	Avoid heat, flames, sparks or other sources of ignition. Containers may rupture or explode if exposed to heat.
Materials to avoid	:	Oxidizing materials.
Hazardous decomposition products	:	Thermal decomposition products: miscellaneous decomposition products.

11. Toxicological Information

The components of this material have been reviewed in various sources and the following endpoints are published:

2-METHYL-2-BUTENE (513-35-9)	:	Inhalation LC50 Rat: > 61000 ppm/4H; Oral LD50 Rat: 700 mg/kg; Dermal LD50 Rat: > 2000 mg/kg
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Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, OSHA or DFG.

Target Organs

2-METHYL-2-BUTENE (513-35-9)	:	Central nervous system
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12. Ecological Information

Aquatic Toxicity

2-METHYL-2-BUTENE (513-35-9) : Invertebrate: 48 Hr EC50 Daphnia magna: 3 mg/L

13. Disposal Considerations

Waste from residues / unused products : Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.
Contaminated packaging : Return cylinder to supplier.

14. Transport Information

DOT (US only)

Proper shipping name : 2-Methyl-2-Butene
Class : 3, Packing Group II
UN/ID No. : UN2460
Labeling : Flammable liquid

15. Regulatory Information

U.S. Federal Regulations

None of this product's components are listed under SARA Section 302/304 (40 CFR 355 Appendix A), SARA 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA 311/312

Acute: Yes
Chronic: No
Fire: Yes
Reactive: No
Pressure: No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
2-METHYL-2-BUTENE	513-35-9	No	Yes	No	Yes	Yes	No

Not regulated under California Proposition 65.

16. Other Information

Prepared by : Specialty Gases of America, Inc.
For additional information, please visit our website at www.americangasgroup.com.