



Date Issued 09/16/93
Suppl Series 09/15/93

TEXACO
MATERIAL SAFETY DATA SHEET

NOTE: Read and understand Material Safety Data Sheet before handling or disposing of product

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATERIAL IDENTITY

Product Code and Name:
08166 ISOBUTANE

Chemical Name and/or Family or Description:
Aliphatic Hydrocarbon

Manufacturer's Name and Address:
Texaco Refining and Marketing, Inc.
P.O. Box 7812 Universal City, California 91608

Telephone Numbers:

TRANSPORTATION EMERGENCY Company: (914) 831-3400 CHEMTREC: (800) 424-9300
HEALTH EMERGENCY Company: (914) 831-3400
GENERAL MSDS ASSISTANCE (914) 838-7204
TECHNICAL INFORMATION Fuels: (914) 838-7336; Lubricants/Antifreezes: (800) 782-7852
Chemicals: (512) 459-6543; Additives: (713) 235-6278
Solvents: (800) 876-3738

2. COMPOSITION/INFORMATION ON INGREDIENTS

THE CRITERIA FOR LISTING COMPONENTS IN THE COMPOSITION SECTION IS AS FOLLOWS:
CHRONIC HAZARDS (CARCINOGENIC, TERATOGENIC, MUTAGENIC, NEUROTOXIC, AND SENSITIZERS)
ARE LISTED WHEN PRESENT AT 0.01% OR GREATER; ACUTE HAZARDS ARE LISTED WHEN PRESENT
AT 1.0% OR GREATER AND NON-HAZARDOUS COMPONENTS ARE LISTED WHEN PRESENT AT 3.0% OR
GREATER. THIS IS NOT INTENDED TO BE A COMPLETE COMPOSITIONAL DISCLOSURE.

Product and/or Component(s) Carcinogenic According to: OSHA IARC NTP OTHER NONE
- - - - X

Composition:

Chemical/Common Name	CAS No.	Exposure Limit	Range in %
Isobutane (2-Methyl Propane)	75285	None Established	100.00

- Product is hazardous according to OSHA (1910.1200)
* Component(s) is hazardous according to OSHA or one or more
state Right-to-Know laws.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

Appearance and Odor: gas

WARNING STATEMENT

DANGER! EXTREMELY FLAMMABLE GAS
GAS MAY CAUSE FLASH FIRE
GAS REDUCES OXYGEN AVAILABLE FOR BREATHING
MAY CAUSE DIZZINESS AND DROWSINESS
MAY CAUSE SUFFOCATION
LIQUID MAY CAUSE FROSTBITE

HMIS		NFPA	
Health: 2	Reactivity: 0	Health: 2	Reactivity: 0
Flammability: 4	Special: -	Flammability: 4	Special: -

Page: 1

N.D. - Not Determined
< - Less Than

N.A. - Not Applicable
> - Greater Than

N.T. - Not Tested

DO A 061806
CONFIDENTIAL



PRODUCT CODE: 08166
PRODUCT NAME: ISOBUTANE

Date Issued: 09/16/93
Supersedes: 09/15/93

3. HAZARD IDENTIFICATION (CONT)

POTENTIAL HEALTH EFFECTS

	EYE	SKIN	INHALATION	INGESTION
Primary Route of Exposure:	X	X	X	-
Effects of Overexposure				

Acute

Eyes:

Eye contact with liquid product or gas under pressure can cause frostbite (cold burns)

Skin:

No adverse effects expected from absorption of material through the skin.

Skin contact with liquid product can cause frostbite (cold burns).

Inhalation:

Vapors or mist may cause irritation of the nose and throat, headache, nausea, vomiting, dizziness, drowsiness, euphoria, loss of coordination, and disorientation. In poorly ventilated areas or confined spaces, unconsciousness and asphyxiation may result

Ingestion:

This material is a gas. Gas or liquid under pressure may cause frostbite (cold burns)

Sensitization Properties:

Unknown.

Chronic:

No adverse effects anticipated

Medical Conditions Aggravated by Exposure:

There is no evidence that this product aggravates an existing medical condition

Other Remarks:

None

4. FIRST AID MEASURES

Eyes:

Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of eye and lids with water. Get medical attention

Skin:

In case of cold burn, immediately place affected area in warm water (105 F) and keep at this temperature until circulation returns. Get medical attention.

Ingestion:

No emergency care anticipated. This material is a gas at standard temperature and pressure

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, qualified personnel may administer oxygen. Get immediate medical attention.

Other Instructions:

None



PRODUCT CODE: 08166
PRODUCT NAME: ISOBUTANE

Date Issued: 09/16/93
Supersedes: 09/15/93

5. FIRE-FIGHTING MEASURES

Ignition Temp. Degrees F.: N.D.
Flammable Limits (%) Lower: 1.8

Flash Point Degrees F. (Method): -181 F
Upper: 8.44

Recommended Fire Extinguishing Agents And Special Procedures:

According to NFPA Guide, stop flow of gas, use water to cool fire-exposed containers and to protect personnel attempting shut off. Allow fire to burn out. Small fires may be extinguished with dry chemical or carbon dioxide. Wear self-contained breathing apparatus and protective clothing.

When handling, use non-sparking tools, ground and bond all containers.

Unusual or Explosive Hazards:

Explosive air-vapor mixtures may form.

Danger! Readily forms explosive air-vapor mixtures; may release explosive vapors that travel, be ignited at remote locations, and flash back. Containers may explode in fire. Do not expose to heat, sparks, flame, static, or other sources of ignition. When handling, use non-sparking tool, ground and bond all containers.

6. ACCIDENTAL RELEASE MEASURES (Transportation Spills Call: CHEMTREC (800) 424-9300)

Procedures in Case of Accidental Release, Breakage or Leakage:

Shut off flow of gas if possible. Isolate area. Keep upwind of leak. Water spray may be effective in dispersing vapors. Eliminate all sources of ignition. Keep people away. Stay upwind and warn of possible downwind explosion hazard.

7. HANDLING AND STORAGE

Precautions to be Taken in Handling and Storage:

Transport, handle, and store in accordance with OSHA Regulation 1910.106 and applicable DOT Regulations. Ground and bond shipping container, transfer line, and receiving container. Use spark-proof tools. Keep away from heat, sparks, flame and other sources of ignition. Material may be at elevated temperatures and/or pressures. Exercise due care when opening bleeders and sampling ports.

Eye wash and safety shower should be available nearby when this product is handled or used.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective Equipment (Type)

Eye/Face Protection:

Avoid eye contact. Chemical type goggles should be worn. Do not wear contact lenses.

Skin Protection:

Protective clothing such as uniforms, coveralls or lab coats should be worn. Launder or dry-clean when soiled. Gloves and boots resistant to chemicals and petroleum distillates required. Insulated gloves also required if contact with liquid-cooled product or equipment is expected.

Respiratory Protection:

Airborne concentrations should be kept to lowest levels possible. If vapor, mist or dust is generated, use respirator approved by MSHA or NIOSH as appropriate. Supplied air respiratory protection should be used for cleaning large spills or upon entry into tanks, vessels, or other confined spaces. See below for applicable permissible concentrations.

Page: 3

N.D. - Not Determined

N.A. - Not Applicable

N.T. - Not Tested

< - Less Than

> - Greater Than

DO A 061808
CONFIDENTIAL



PRODUCT CODE: 08166
PRODUCT NAME: ISOBUTANE

Date Issued: 09/16/93
Supersedes: 09/15/93

8. EXPOSURE CONTROLS/PERSONAL PROTECTION (CONT)

Ventilation:

Use explosion-proof equipment to maintain adequate ventilation to meet occupational exposure limits, if applicable (see below), prevent accumulation of explosive air-gas mixtures, and avoid significant oxygen displacement. Oxygen levels should be at least 19.5% in confined spaces or other work areas (OSHA value).

Exposure Limit for Total Product:

None established for product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor	gas		
Boiling Point (Degrees F)	10.4	Percent VOC	100
Specific Gravity	0.5631 (H2O=1)	Vapor Density	2.07
pH of undiluted product	N.A.	Solubility in Water	apprec
Vapor Pressure	2@7.5C		
Viscosity	N.A.	Other	-

10. STABILITY AND REACTIVITY

This Material Reacts Violently With: (If others is checked below, see comments for details)

Air	Water	Heat	Strong Oxidizers	Others	None of These
-	-	Y	Y	-	-

Comments:

This product may contain up to 80 ppm benzene in raw natural gas. No benzene detected in processed natural gas.

Products Evolved When Subjected to Heat or Combustion:

Toxic levels of carbon monoxide, carbon dioxide, irritating aldehydes and ketones.

	OCCUR	DO NOT OCCUR
Hazardous Polymerizations:	-	X

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION (ANIMAL TOXICITY DATA)

Median Lethal Dose (LD50 LC50) (Species)

Oral: believed to be > 5 g/kg (rat); practically non-toxic
Inhalation: No adverse effects in humans exposed to 250-1000ppm/8 hrs./10 day
Dermal: believed to be > 3 g/kg (rabbit); practically non-toxic

Irritation Index, Estimation of Irritation (Species)

Skin: believed to be < 0.5/8.0 (rabbit); no appreciable effect
Eyes: believed to be < 15/110 (rabbit); no appreciable effect
Sensitization: N.D.

Other:

None

12. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS

This product has been evaluated for RCRA characteristics and does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.

Page: 4

N.D. - Not Determined	N.A. - Not Applicable	N.T. - Not Tested
< - Less Than	> - Greater Than	

DO A 061809
CONFIDENTIAL



PRODUCT CODE: 08166
PRODUCT NAME: ISOBUTANE

Date Issued: 09/16/93
Supersedes: 09/15/93

daughters and allow a gamma radiation reading during operation. A potential external radiation hazard exists at or near any pipe, valve or vessel containing a radon-enriched stream or containing internal deposits of radioactive material, due to the transmission of gamma radiation through its wall.

Field studies in the literature and conducted by company personnel at selected sites, have not shown any conditions that subject workers to cumulative exposures in excess of general population limits. Equipment emitting gamma radiation should be presumed to be internally contaminated with alpha-emitting decay products which may be a hazard if inhaled or ingested. During maintenance operations that require the opening of contaminated process equipment, the flow of gas should be stopped and a four hour delay enforced to allow the gamma radiation to drop to background levels. Protective equipment E.G. coveralls, gloves and respirator (NIOSH/MSHA approved for high efficiency particulates and radionuclides, or supplied air) should be worn by personnel entering a vessel or working on contaminated process equipment to prevent skin contamination, ingestion or inhalation of any residue containing alpha radiation. Air-borne contamination may be minimized by handling scale and/or contaminated materials in a wet state.

THE INFORMATION CONTAINED HEREIN IS BELIEVED TO BE ACCURATE. IT IS PROVIDED INDEPENDENTLY OF ANY SALE OF THE PRODUCT FOR PURPOSE OF HAZARD COMMUNICATION AS PART OF TEXACO'S PRODUCT SAFETY PROGRAM. IT IS NOT INTENDED TO CONSTITUTE PERFORMANCE INFORMATION CONCERNING THE PRODUCT. NO EXPRESS WARRANTY, OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE WITH RESPECT TO THE PRODUCT OR THE INFORMATION CONTAINED HEREIN. DATA SHEETS ARE AVAILABLE FOR ALL TEXACO PRODUCTS. YOU ARE URGED TO OBTAIN DATA SHEETS FOR ALL TEXACO PRODUCTS YOU BUY, PROCESS, USE OR DISTRIBUTE AND YOU ARE ENCOURAGED AND REQUESTED TO ADVISE THOSE WHO MAY COME IN CONTACT WITH SUCH PRODUCTS OF THE INFORMATION CONTAINED HEREIN.

TO DETERMINE APPLICABILITY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT, USER SHOULD CONSULT HIS LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENT AGENCY. TEXACO DOES NOT UNDERTAKE TO FURNISH ADVICE ON SUCH MATTERS.

Date: 09-16-93 ☐ New ☒ Revised, Supersedes: 09-15-93
Date Printed: 05-16-94

Inquiries regarding MSDS should be directed to:

Texaco Inc.
Manager, Product Safety
P.O. Box 509
Beacon, N.Y. 12508

PLEASE SEE NEXT PAGE FOR PRODUCT LABEL

Page: 6

N.D. - Not Determined
< - Less Than

N.A. - Not Applicable
> - Greater Than

N.T. - Not Tested

DO A 061810
CONFIDENTIAL



PRODUCT CODE: 08166
PRODUCT NAME: ISOBUTANE

Date Issued: 09/16/93
Supersedes: 09/15/93

16. PRODUCT LABEL

READ AND UNDERSTAND MATERIAL SAFETY DATA SHEET BEFORE HANDLING OR DISPOSING OF PRODUCT

08166 ISOBUTANE

WARNING STATEMENT

DANGER! EXTREMELY FLAMMABLE GAS
GAS MAY CAUSE FLASH FIRE
GAS REDUCES OXYGEN AVAILABLE FOR BREATHING
MAY CAUSE DIZZINESS AND DROWSINESS
MAY CAUSE SUFFOCATION
LIQUID MAY CAUSE FROSTBITE

PRECAUTIONARY MEASURES

KEEP AWAY FROM HEAT, SPARKS, AND FLAME
KEEP CONTAINER CLOSED
AVOID CONTACT WITH EYES, SKIN, AND CLOTHING
USE WITH ADEQUATE VENTILATION
DO NOT ENTER STORAGE AREAS UNLESS ADEQUATELY VENTILATED
WEAR INSULATED GLOVES IF CONTACT WITH LIQUID COOLED EQUIPMENT IS EXPECTED

FIRST AID

INGESTION:

No emergency care anticipated. This material is a gas at standard temperature and pressure.

INHALATION:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, qualified personnel may administer oxygen. Get immediate medical attention.

EYE CONTACT:

Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of eye and lids with water. Get medical attention.

SKIN CONTACT:

In case of cold burn, immediately place affected area in warm water (105 F) and keep at this temperature until circulation returns. Get medical attention.

FIRE

In case of fire, stop flow of gas; allow fire to burn out. Use water to cool containers and protect personnel. Wear self-contained breathing apparatus (SCBA). Extinguish small residual fires with dry chemical or CO2.

Chemical/Common Name	CAS No	Range in %
Isobutane (2-Methyl Propane)	75285	100.00

- Product is hazardous according to OSHA (1910.1200).
- Component(s) is hazardous according to OSHA or one or more state Right-to-Know laws

HMIS
Health : 2 Reactivity 0
Flammability: 4 Special -

National Fire Protection Association
Health : 2 Reactivity 0
Flammability: 4 Special -

DOT Proper Shipping Name: Liquefied Petroleum Gas
DOT Hazardous Class : 2.1

CAUTION: Misuse of empty containers can be hazardous. Empty containers can be hazardous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize or expose to open flame or heat. Keep container closed and drum bungs in place.



PRODUCT CODE: 08166
PRODUCT NAME: ISOBUTANE

Date Issued: 09/16/93
Supersedes: 09/15/93

16. PRODUCT LABEL (CONT)

Manufacturer's Name: Texaco Refining and Marketing, Inc.
P.O. Box 7812 Universal City, California 91608

TRANSPORTATION EMERGENCY Company: (914) 831-3400
CHEMTREC: (800) 424-9300

HEALTH EMERGENCY Company: (914) 831-3400

DO A 061812
CONFIDENTIAL