

U. S. OIL & REFINING CO.

M A T E R I A L S A F E T Y D A T A S H E E T

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MIXED BUTANE

MSDS No. 611100

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9300

EMERGENCY ASSISTANCE:
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CHEMTREC: (800) 424-

IMPORTANT: Read this MSDS before handling or disposing of this product.
Pass this information on to employees, customers and product users.

1. GENERAL

Trade Name: MIXED BUTANE
Other Names: LPG, BUTANE

Chemical Family: HYDROCARBON, ALKANE
Generic Name: BUTANE
DOT Hazard Class: FLAMMABLE GAS
DOT Shipping Name: LIQUIFIED PETROLEUM GAS, 2.1, UN 1075

NFPA Hazard Rating: HEALTH: 1
FIRE: 4
REACTIVITY: 0
SPECIAL:

2. PRODUCT COMPONENTS

Component	CAS Number	Percent
PROPANE	74-98-6	LT 2
NORMAL BUTANE	106-97-8	AP 5-90
ISO BUTANE	075-28-5	AP 5-90
PENTANES		AP 0-5

3. OCCUPATIONAL EXPOSURE LIMITS

Substance	Value	Time/Type	Date	Source
BUTANE	800 PPM	8 Hr PEL	1989	OSHA

4. HEALTH INFORMATION

Summary: VAPOR CONTACT CAN IRRITATE EYES AND RESPIRATORY TRACT. LIQUID CONTACT CAN CAUSE FROSTBITE.

Routes of Exposure**Signs and Symptoms**

Inhalation GAS ACTS AS A SIMPLE ASPHIXIANT, GAS MAY BE MILDLY IRRITATING TO RESPIRATORY TRACT. DROWSINESS AND LIGHT-HEADEDNESS MAY OCCUR AT HIGHER CONCENTRATIONS.

Eye Contact DIRECT CONTACT WITH LIQUID, PRESSURIZED GAS OR FROST PARTICLES MAY PRODUCE SEVERE AND POSSIBLE PERMANENT EYE DAMAGE.

Skin Contact CONTACT WITH LIQUID CAN CAUSE FROSTBITE OR CHEMICAL BURNS.

Ingestion DUE TO PHYSICAL FORM OF THE MATERIAL, SWALLOWING IS UNLIKELY.

5. FIRE AND EXPLOSION

Unusual Fire and Explosion Hazards:

THIS GAS RELEASES FLAMMABLE VAPORS AT WELL BELOW AMBIENT TEMPERATURES AND READILY FORMS FLAMMABLE MIXTURES WITH AIR. EXPOSED TO AN IGNITION SOURCE IT WILL BURN IN THE OPEN OR BE EXPLOSIVE IN CONFINED SPACES. ITS VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL LONG DISTANCES TO A POINT OF IGNITION, AND THEN FLASH BACK.

Flash Point (Method): -76°F

Autoignition Temperature (Method): 760°F

Flammable Limits (Vol. percent in air at Normal Atmospheric Temperature and Pressure) LOWER: 1.9
UPPER: 8.5

Extinguishing Media:

DRY CHEMICAL, CO₂. WATER IS NOT EFFECTIVE. USE WATER SPRAY TO DISPERSE UNIGNITED VAPORS.

Special Firefighting Procedures:

DO NOT EXTINGUISH FLAME IF VAPORS ARE STILL ESCAPING. STOP FLOW OF GAS IF POSSIBLE. USE WATER TO COOL EXPOSED CONTAINERS OR VESSELS. LET FIRE BURN OUT IF SAFE TO DO SO. BE PREPARED FOR IGNITION OF VAPORS FROM DISTANT SOURCES.

6. EMPLOYEE PROTECTION

- Respiratory:** USE AIR-SUPPLIED, SELF-CONTAINED BREATHING APPARATUS IF ABOVE TLV OR UNKNOWN.
- Ventilation:** PROVIDE SUFFICIENT VENTILATION TO MAINTAIN EXPOSURE LEVEL BELOW TLV.
- Eye:** GOGGLES SHOULD BE WORN TO PROTECT EYES FROM EXPOSURE TO LIQUID.
- Skin:** USE GLOVES, FACE SHIELD AND PROTECTIVE CLOTHING TO PROTECT FROM SKIN CONTACT WITH LIQUID.

7. EMERGENCY AND FIRST AID

- Inhalation:** IMMEDIATELY REMOVE FROM CONTAMINATED AREA TO FRESH AIR. FOR RESPIRATORY DISTRESS, GIVE OXYGEN OR ADMINISTER CPR (CARDIOPULMONARY RESUSCITATION), IF NECESSARY. OBTAIN PROMPT MEDICAL ATTENTION.
- Eye Contact:** FLUSH WITH CLEAN LOW-PRESSURE WATER FOR AT LEAST 15 MINUTES. OBTAIN MEDICAL ATTENTION.
- Skin Contact:** LIQUID CONTACT: SOAK OR APPLY TEPID WATER TO RETURN SKIN TO NORMAL TEMPERATURE. GET MEDICAL ATTENTION.
- Ingestion:** DRINKING OF THIS MATERIAL WOULD CAUSE SEVERE GASTROINTESTINAL EFFECTS.

8. SPILL AND DISPOSAL

Actions if Material is Spilled or Leaked:

LIQUID SPILLS WILL IMMEDIATELY VAPORIZE PRODUCING A FLAMMABLE VAPOR CLOUD. EVACUATE AREA. REMOVE SOURCES OF IGNITION. PREPARE FOR POSSIBLE IGNITION. STOP LEAK IF POSSIBLE. PERSONNEL INVOLVED IN LEAK STOPPAGE SHOULD USE SELF-CONTAINED BREATHING APPARATUS.

Waste Disposal Methods:

PRODUCT IS NON-TOXIC GAS THAT WILL DISSIPATE IN AIR IF IGNITION DOES NOT OCCUR.

9. PHYSICAL AND CHEMICAL DATA

Boiling Point: 31°F (N-BUTANE)

Freezing Point: AP -217°F

Specific Gravity (H₂O = 1 @ 39.2°F): AP 0.6

Vapor Pressure: 50 PSI AT 60°F

Vapor Sp. Gr. (Air = 1.0 at 60°-90°F): 2.0

Solubility in Water: INSOLUBLE

Viscosity Units, Temp. (Method): N/AP

Dry Point: N/AP

Volatile Characteristics: 100 % EXTREMELY VOLATILE

Stability: STABLE

Other Physical and Chemical Properties: N/AP

Appearance and Odor: COLORLESS GAS OR LIQUEFIED COMPRESSED GAS WITH FAINT HYDROCARBON ODOR. MAY HAVE MERCAPTAN ODOR.

Conditions to Avoid: KEEP AWAY FROM HEAT AND OPEN FLAME

Materials to Avoid: AIR, OXYGEN AND OXIDIZING AGENTS.

Hazardous Decomposition Products: CO AND CO₂

10. SARA TITLE III

Extremely Hazardous Substances for Emergency Response and Planning:

Component	CAS Number	Percent	TPQ(lbs)	RQ(lbs)
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NONE

Toxic Chemicals for Emission Reporting

Component	CAS Number	Percent (Typical)
NONE		

EPA Hazard Classification:

Acute Health Hazard:
 Chronic Health Hazard:
 Fire Hazard: X
 Pressure Hazard: X
 Reactive Hazard:
 Not Applicable:

 11. ADDITIONAL PRECAUTIONS

Handling & Storage:

BUTANE IS A FLAMMABLE GAS USUALLY STORED AS A LIQUEFIED GAS UNDER PRESSURE. USE PIPING AND EQUIPMENT DESIGNED TO WITHSTAND PRESSURES ENCOUNTERED WITH BUTANE. KEEP AWAY FROM HEAT AND SOURCES OF IGNITION.

General Comments:

-----NOTE-----Qualifications

EQ = Equal	AP = Approximately	N/AV = Not Available
LT = Less Than	UK = Unknown	N/AP = Not Applicable
GT = Greater than	TR = Trace	N/DA = No Data Available

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