

# International Chemical Safety Cards

## BUTANE (LIQUIFIED GAS)

ICSC: 0232

BUTANE (LIQUIFIED GAS)  
Normal butane (liquified gas)  
(cylinder)  
 $C_4H_{10}$   
Molecular mass: 58.1

CAS # 106-97-8  
RTECS # EJ4200000  
ICSC # 0232  
UN # 1011  
EC # 601-004-00-0

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/ SYMPTOMS	PREVENTION	FIRST AID/ FIRE FIGHTING
<b>FIRE</b>	Extremely flammable.	NO open flames, NO sparks, and NO smoking.	Shut off supply; if not possible and no risk to surroundings, let the fire burn itself out; in other cases extinguish with powder, carbon dioxide.
<b>EXPLOSION</b>	Gas/air mixtures are explosive.	Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding) if in liquid state.	In case of fire: keep cylinder cool by spraying with water. Combat fire from a sheltered position.
<b>EXPOSURE</b>			
• <b>INHALATION</b>	Drowsiness.	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Artificial respiration if indicated. Refer for medical attention.
• <b>SKIN</b>	ON CONTACT WITH LIQUID: FROSTBITE.	Cold-insulating gloves. Protective clothing.	ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Refer for medical attention.
• <b>EYES</b>	ON CONTACT WITH LIQUID: FROSTBITE.	Face shield.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
• <b>INGESTION</b>			
SPILLAGE DISPOSAL	STORAGE	PACKAGING & LABELLING	
Evacuate danger area! Consult an expert! Ventilation. NEVER direct water jet on liquid (extra personal protection: self-contained breathing apparatus).	Fireproof. Cool.	F symbol R: 12 S: (2-)9-16-33 Note: C	

UN Hazard Class: 2.1

**SEE IMPORTANT INFORMATION ON BACK****ICSC: 0232**

Prepared in the context of cooperation between the International Programme on Chemical Safety &amp; the Commission of the European Communities © IPCS CEC 1993

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<b>I M P O R T A N T  D A T A</b>	<p><b>PHYSICAL STATE; APPEARANCE:</b> ODOURLESS COLOURLESS COMPRESSED LIQUEFIED GAS.</p> <p><b>PHYSICAL DANGERS:</b> The gas is heavier than air and may travel along the ground; distant ignition possible, and may accumulate in low ceiling spaces causing deficiency of oxygen.</p> <p><b>CHEMICAL DANGERS:</b></p> <p><b>OCCUPATIONAL EXPOSURE LIMITS (OELs):</b> TLV: 800 ppm; 1900 mg/m<sup>3</sup> (ACGIH 1996). MAK: 1000 ppm; 2350 mg/m<sup>3</sup>; (1993).</p>	<p><b>ROUTES OF EXPOSURE:</b> The substance can be absorbed into the body by inhalation.</p> <p><b>INHALATION RISK:</b> A harmful concentration of this gas in the air will be reached very quickly on loss of containment.</p> <p><b>EFFECTS OF SHORT-TERM EXPOSURE:</b> The liquid may cause frostbite.</p> <p><b>EFFECTS OF LONG-TERM OR REPEATED EXPOSURE:</b></p>
	<p><b>PHYSICAL PROPERTIES</b></p> <p>Boiling point: -1°C Melting point: -138°C Relative density (water = 1): 0.6 Solubility in water, ml/100 ml at 20°C: 3.25 Vapour pressure, kPa at 21.1°C: 213.7</p> <p>Relative vapour density (air = 1): 2.1 Flash point: Flammable Gas Auto-ignition temperature: 287°C Explosive limits, vol% in air: 1.8-8.4</p>	
<b>ENVIRONMENTAL DATA</b>		
<b>NOTES</b>		
<p>High concentrations in the air cause a deficiency of oxygen with the risk of unconsciousness or death. Check oxygen content before entering area. Turn leaking cylinder with the leak up to prevent escape of gas in liquid state. The measures mentioned in section PREVENTION are applicable to production, filling of cylinders, and storage of the gas.</p> <p style="text-align: right;">Transport Emergency Card: TEC (R)-27b NFPA Code: H1; F4; R0;</p>		
<b>ADDITIONAL INFORMATION</b>		

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**IMPORTANT  
LEGAL  
NOTICE:**

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