

# Propane

PRODUCT : PROPANE MSDS NR : 302-00-0037 BOC VERSION : 1.07 DATE : 25/06/10 PAGE : 1/2

## 1 IDENTIFICATION OF THE SUBSTANCE/ PREPARATION AND OF THE COMPANY

<b>Product name</b>	Propane.
<b>Chemical formula</b>	C <sub>3</sub> H <sub>8</sub> .
<b>Company identification</b>	See end of page 2.
<b>Emergency phone Nos</b>	See end of page 2.

## 2 COMPOSITION/INFORMATION ON INGREDIENTS

<b>Substance/Preparation</b>	Substance.
<b>Components/Impurities</b>	Contains no other components or impurities which will influence the classification of the product.
<b>CAS Nr</b>	74-98-6.
<b>EEC Nr</b>	200-827-9.
<b>(from EINECS)</b>	
<b>ASHRAE Nr</b>	R290.

## 3 HAZARDS IDENTIFICATION

<b>Hazards identification</b>	Extremely flammable Liquefied gas.
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## 4 FIRST AID MEASURES

<b>Inhalation</b>	In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
<b>Skin/eye contact</b>	In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Immediately flush eyes thoroughly with water for at least 15 minutes. Obtain medical assistance.
<b>Ingestion</b>	Ingestion is not considered a potential route of exposure.

## 5 FIRE FIGHTING MEASURES

<b>Specific hazards</b>	Exposure to fire may cause containers to rupture/explode.
<b>Inform Fire Brigade</b>	
<b>Hazardous combustion products</b>	Incomplete combustion may form carbon monoxide.
<b>Suitable extinguishing media</b>	All known extinguishants can be used.
<b>Specific methods</b>	If possible, stop flow of product. Move away from container and cool with water from a protected position. Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.
<b>Special protective equipment for fire fighters</b>	Use self-contained breathing apparatus.

## 6 ACCIDENTAL RELEASE MEASURES

<b>Personal precautions</b>	Evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation. Eliminate ignition sources. Post warning notices (including no smoking).
<b>Environmental precautions</b>	Try to stop release. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
<b>Clean up methods</b>	Ventilate area.

## 7 HANDLING AND STORAGE

### Handling and storage

Ensure equipment is adequately earthed. Close cylinder valve when not in use to prevent contamination of the cylinder. Purge air from system before introducing gas. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Keep away from heat and ignition sources (including static discharges). Segregate from oxidant gases and other oxidants in store. Refer to supplier's container handling instructions. Keep container below 50°C in a well ventilated place.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Personal protection</b>	Ensure adequate ventilation. Do not smoke while handling product.
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## 9 PHYSICAL AND CHEMICAL PROPERTIES

<b>Molecular weight</b>	44.
<b>Melting point</b>	-188°C.
<b>Boiling point</b>	-42.1°C.
<b>Critical temperature</b>	97°C.
<b>Relative density, gas</b>	1.5 (air=1).
<b>Relative density, liquid</b>	0.58 (water=1).
<b>Vapour Pressure 20°C</b>	8.3 bar.
<b>Solubility mg/l water</b>	75 mg/l.
<b>Appearance/Colour</b>	Colourless gas.
<b>Odour</b>	Sweetish. Poor warning properties at low concentrations. Stenchant often added.
<b>Autoignition temperature</b>	470°C.
<b>Flammability range</b>	2.2-9.5 vol% in air.
<b>Other data</b>	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

## 10 STABILITY AND REACTIVITY

<b>Stability and reactivity</b>	Can form explosive mixture with air. May react violently with oxidants.
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**11 TOXICOLOGICAL INFORMATION**

**General** No known toxicological effects from this product.

**12 ECOLOGICAL INFORMATION**

**General** No known ecological damage caused by this product.

**13 DISPOSAL CONSIDERATIONS**

**General**  
Avoid discharge to atmosphere. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Do not discharge into any place where its accumulation could be dangerous. Contact BOC if guidance is required. "Empty" cylinders still contain flammable vapour. Return empty cylinders promptly to your supplier.

**14 TRANSPORT INFORMATION**

**Proper Shipping Name** Propane.  
**UN Nr** 1978.  
**Class/Div** 2.1.  
**ADR/RID Classification Code** 2F.  
**ADR/RID Hazard Nr** 23.  
**Labelling ADR** Label 2.1: flammable gas.

**Other transport information**  
Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured and:  
– cylinder valve is closed and not leaking.  
– valve outlet cap nut or plug (where provided) is correctly fitted.

- valve protection device (where provided) is correctly fitted.
- there is adequate ventilation.
- they comply with applicable regulations.

**15 REGULATORY INFORMATION**

**Number in Annex I of Dir 67/548** 601-003-00-5.  
**EC Classification** F+;R12.  
**Labelling of cylinders**  
– **Symbols** Label 2.1: flammable gas.  
– **Risk phrases** R12 Extremely flammable.  
– **Safety phrases** S9 Keep container in well ventilated place.  
S16 Keep away from ignition sources – No smoking.

**16 OTHER INFORMATION**

Propane quality conforms to BS4250  
Ensure all national/local regulations are observed.  
Ensure operators understand the flammability hazard.  
The hazard of asphyxiation is often overlooked and must be stressed during operator training. Contact with liquid may cause cold burns and/or frostbite. Users of breathing apparatus must be trained. This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out. Always leak check cylinders when first collected, delivered or used, using an approved leak detection fluid. Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.  
For further safety information please refer to "Safe Under Pressure" which is available from your local BOC outlet.

**CYLINDER CHARACTERISTICS**

Cylinder Size (see Note 1 & 2)	Outlet Connection (see Note 3)	Approx. Dimensions (see Note 4) (mm)	Max. Gross Weight (kg)
A	5/8" BSP	270 x 387	16
B	Female	320 x 540	32
D	Left Hand	320 x 910	57
E	Cone Recessed	375 x 1250	108
F	1 1/4" ACME Right Hand Male	320 x 706	46

**NOTES:**

1. Not all cylinder sizes are available at all locations.
2. F size cylinders are for use with fork lift trucks. F cylinders are liquid withdrawal, Cylinders A, B, D, E are vapour withdrawal.
3. For cylinders A, B, D, E this outlet connection is designed primarily to receive the gas pressure regulator. Each cylinder valve incorporates a safety valve which operates at approximately 26 bar.
4. The height includes the valve and guard.
5. Where manifolds of individual cylinders are required please contact BOC's Customer Engineering Services Department for details.



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