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SAFETY DATA SHEET

BP Butane

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Identification of substance/preparation

BP Butane

Alternative Names: BP Commercial Butane, BP Butane Export Quality

Application

Multi-purpose product with applications including gaseous fuel for domestic, commercial and industrial uses; internal combustion engine fuel; aerosol propellant; Chemical feedstock.

For specific application advice see appropriate Technical Data Sheet or consult your BP representative

Company Identification

BP Oil UK Limited,
Witan Gate House
500-600 Witan Gate
Central Milton Keynes
MK9 1ES

Emergency Telephone Number

0117 982 5576

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Composition

Petroleum gas. A small quantity (typically up to 50 ppm) of ethyl mercaptan (stenching agent) is commonly added to assist in leak detection.

Contains <0.1% 1,3-butadiene

Hazardous Components

Hydrocarbon, C3-4-rich, petroleum distillate. EINECS No: 270-990-9, CAS No: 68512-91-4, F+, R12 Extremely Flammable >90%

3. HAZARDS IDENTIFICATION

Extremely flammable.

Explosive air/vapour mixtures may form at ambient temperature.

Liquid leaks generate large volumes of extremely flammable vapour (approximately 250:1).

Abuse involving wilful inhalation of very high concentrations of vapour, even for short periods, can produce unconsciousness or might prove fatal.

Cold burns (frostbite) will result from skin/ eye contact with liquid.

Liquid release or vapour pressure jets present a risk of serious damage to the eyes.

4. FIRST-AID MEASURES

Eyes

Wash eye thoroughly with copious quantities of water. Obtain IMMEDIATE medical attention.

Skin

If cold burns are present drench with water and obtain immediate medical advice.

Keep contaminated clothes away from ignition sources.

Inhalation

If exposure to vapour, mists or fumes causes drowsiness, headache, blurred vision or irritation of the eyes, nose or throat, remove immediately to fresh air. Keep patient warm and at rest. If any symptoms persist obtain medical advice.

Unconscious casualties must be placed in the recovery position. Monitor breathing and pulse rate and if breathing has failed, or is deemed inadequate, respiration must be assisted, preferably by the mouth to mouth method. Administer external cardiac massage if necessary. Seek medical attention immediately.

Medical Advice

Treatment should in general be symptomatic and directed to relieving any effects.

5. FIRE-FIGHTING MEASURES

These materials are delivered, stored and used at temperatures above their flash point. Avoid all naked flames, sparks, cigarettes, etc.

IN CASE OF FIRE, IMMEDIATELY ALERT THE FIRE BRIGADE.

Ensure an escape path is always available from any fire.

Fires in confined spaces should be dealt with by trained personnel wearing approved breathing apparatus.

If gas has ignited, do not attempt to extinguish but stop gas flow and allow to burn out. Use water spray to cool heat-exposed containers, and to protect surrounding areas and personnel effecting shut-off.

Every precaution must be taken to keep containers cool to avoid the possibility of a boiling liquid expanding vapour explosion (BLEVE).

Pressurised containers are liable to explode violently when subjected to high temperatures.

Combustion Products

See Stability and Reactivity, Section 10 of this Safety Data Sheet.

6. ACCIDENTAL RELEASE MEASURES

As this product has a very low flash point any spillage or leak is a severe fire and/or explosion hazard.

If a leak has not ignited, stop gas flow, isolate sources of ignition and evacuate personnel.

Ensure good ventilation.

Liquid leaks generate large volumes of flammable vapour, heavier than air, which may travel to remote sources of ignition (eg. along drainage systems).

Where appropriate, use water spray to disperse the gas or vapour and to protect personnel attempting to stop leakage.

Vapour may collect in any confined space.

If spillage has occurred in a confined space, ensure adequate ventilation and check that a safe, breathable atmosphere is present before entry.

Do not enter a vapour cloud except for rescue; self-contained breathing apparatus must be worn.

Wear protective clothing. See Exposure Controls/Personal Protection, section 8, of this Safety Data Sheet.

In the event of a leak, contact the appropriate authorities.

Small quantities of spilled liquid may be allowed to evaporate. Vapour should be dispersed by effective ventilation.

7. HANDLING AND STORAGE

Storage Conditions

Store and use only in equipment/containers designed for use with this product.

Store and dispense only in well ventilated areas away from heat and sources of ignition.

Do not enter storage tanks. If entry to tanks is necessary, contact the supplier.

Containers must be properly labelled.

Do not remove warning labels from containers.

Check that cylinders are within their test date. If they are overdue for inspection please contact your local dealer.

Handling Precautions

Ensure good ventilation.
Avoid inhalation of vapour.
Avoid contact with liquid and cold storage containers.
When handling cylinders wear protective footwear and suitable gloves.
Avoid contact with the eyes.

Fire Prevention

Ensure equipment is electrically bonded and earthed to prevent static accumulation.
Explosive air/vapour mixtures may form at ambient temperature.
Note: Product spilt on clothing may give rise to delayed evaporation and subsequent fire hazard.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

Comply with current local occupational exposure limit. Where not established, the following limits are recommended.

Liquefied Petroleum Gas (LPG)

UK publication EH40 (Occupational Exposure Limits):

Occupational Exposure Standard: Long-term exposure limit (8hr TWA) 1000ppm, 1750 mg/m³
Short-term exposure limit (15 min) 1250ppm, 2180 mg/m³

Butane

UK publication EH40 (Occupational Exposure Limits):

Occupational Exposure Standard: Long-term exposure limit (8hr TWA) 600ppm, 1450 mg/m³
Short-term exposure limit (15 min) 750ppm, 1810mg/m³

Protective Clothing

Wear suitable gloves and overalls to prevent cold burns and frostbite.
In filling operations wear protective clothing including impervious gloves, safety goggles or face shield.
When handling cylinders wear protective footwear.

Respiratory Protection

If operations are such that significant exposure to vapour, mist or fume may be anticipated, then suitable approved respiratory equipment should be worn.

The use of respiratory equipment must be strictly in accordance with the manufacturers' instructions and any statutory requirements governing its selection and use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Typical Values

Grades:	Test Method	Units	BP Butane
Physical state			liquid (gas at ambient pressure)
Colour			colourless
Odour			Distinctive when stench
Density @ 15°C	ASTM D 1657	kg/m ³	580
Gauge vapour pressure 40 °C	BS3324	kPa	<505
Vapour density rel. to air	ASTM D2463/D2421		1.9 - 2.1
Explosion limits		%	1.9 - 9.0
Flash point (PMC)	ASTM D 93	°C	< minus 50
Boiling point/range		°C	< minus 2

10. STABILITY AND REACTIVITY

Stable at ambient temperatures.

Hazardous polymerisation reactions will not occur.

Materials to Avoid

Avoid contact with strong oxidizing agents.

Hazardous Decomposition Products

Incomplete combustion will generate hazardous gases, including carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Eyes

Will present a risk of serious damage to the eyes if contact with liquid occurs.

Skin

Will cause cold burns and frostbite if skin contact with liquid occurs.

Inhalation

Low vapour concentrations may cause nausea, dizziness, headaches and drowsiness.

May have a narcotic effect if high concentrations of vapour are inhaled.

High vapour concentrations may produce symptoms of oxygen deficiency which, coupled with central nervous system depression, may lead to rapid loss of consciousness.

ABUSE:

Under normal conditions of use the product is not hazardous; however, abuse involving deliberate inhalation of very high concentrations of vapour, even for short periods, can produce unconsciousness and/or result in a sudden fatality.

12. ECOLOGICAL INFORMATION

Mobility

Spillages are unlikely to penetrate the soil.

The product is volatile / gaseous and will rapidly evaporate into the atmosphere.

Persistence and degradability

Unlikely to cause long term adverse effects in the environment.

Bioaccumulative potential

This material is not expected to bioaccumulate.

Aquatic toxicity

Unlikely to cause long term effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Do not dispose of any LPG container. Return all cylinders/vessels to your supplier.

Empty packages may contain some remaining product. Hazard warning labels are a guide to the safe handling of empty packaging and should not be removed.

Empty containers represent a fire hazard as they may contain flammable product residues and vapour. Never weld, solder or braze empty containers.

14. TRANSPORT INFORMATION

ADR/RID: Butane, UN No. 1011, Flammable gases, Class 2, Classification Code 2F, Labels 2.1, Hazard Identification Number 23

UN: Butane, UN No. 1011, Flammable gases, Class 2.1

IATA/ICAO: Butane, UN No. 1011, Flammable gases, Class 2.1. Forbidden for transport on passenger aircraft.

IMO: Butane, UN No. 1011, Flammable gases, Class 2.1.

Emergency Action Code: 2WE

15. REGULATORY INFORMATION

EU Category of Danger

Extremely flammable

EU Labelling

Symbol:

Flame

Indication of danger:

EXTREMELY FLAMMABLE

Contains:

Petroleum gas

Risk (R) Phrases:

R12 Extremely flammable

Safety (S) Phrases:

S2 Keep out of the reach of children

S3/9 Keep in a cool, well ventilated place.

S16 Keep away from sources of ignition - No smoking

S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

16. OTHER INFORMATION

Compiled by:

Product Stewardship Group

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Sheet Revisions

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