LPG Commercial Butane Safety Data Sheet (SDS)

LPG-BUS-HSE-IST-0008

Released 12 December 2023

# Product and Company Details

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| Product Identifier | |
| Product Name | Commercial Butane |
| Proper Shipping Name | Butane |
| Other Names | LPG, LP Gas, Liquefied Petroleum Gas, Petroleum Gases, Liquefied |
| Recommended use and restrictions on use | |
| Use(s) | As fuel in commercial and industrial applications |
| Restrictions | Not to be concentrated and intentionally inhaled. |
| Supplier details | |
| Company | Geogas Pacific Pty Ltd  Level 4, 15 Help Street, Chatswood NSW 2067 |

# Hazards identification

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| Classification of the substance or mixture | |
| Commercial Butane as supplied by Geogas Pacific contains less than 0.1% of 1,3 Butadiene. Butane is classified as a Dangerous Good by the Australian Dangerous Goods Code. | |
| GHS Classification | Flammable Gases: Category 1A  Gases under pressure: Liquefied gas |
| Label Elements | |
| Signal word | Danger |
| Pictogram |  |
| Hazard statement(s) | H220 Extremely flammable gas  H280 Contains gas under pressure, may explode if heated |
| Prevention Statements(s) | P210 Keep away from heat / sparks / open flames / hot surfaces and other ignition sources  No smoking |
| Response Statement(s) | P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely  P381 Eliminate all ignition sources if safe to do so. |
| Storage statement | P403 Store in a well-ventilated place. |
| Disposal Statement | None allocated |
| Other Hazards | |
| Asphyxiant. Effects are proportional to oxygen displacement.  **Smell**: People with poor or no sense of smell should be made aware of the risk in the event of a gas leak. | |

# Composition and Information on Ingredients

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| Substance / Mixtures | | | | | |
| Ingredient | CAS Number | | Content v/v |  | |
| Butane (mixture of “n” and “iso” isomers) | 106-97-8 | 96 – 98% | |  |
| Propane | 0074-98-6 | | 0 - 2% |  | |
| Propene | 115-07-1 | | 0 – 2% |
| 1,3 Butadiene | 106-99-0 | | <0.1% |  | |
| Ethyl Mercaptan (Odorant) | 75-08-1 | Approx. 25mg/kg | |  | |
| **Note:** The above composition is in accordance with relevant Australian Standards and state regulations. | | | | | |
| Alternative Names:  Butane  LP Gas, or Petroleum Gases, Liquefied | UN Number  1011  1075 | | | | |

# First Aid

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| Description of first aid measures | |
| Eye | Cold burns: Immediately flush with tepid water or with sterile saline solution. Hold eyelids apart for 15 minutes. Seek medical attention. |
| Inhalation | If inhaled, remove from contaminated area. To protect rescuer, use an Air-line respirator or Self-Contained Breathing Apparatus (SCBA). Be aware of possible explosive atmospheres. Apply artificial respiration if not breathing. Give oxygen if available. For advice, contact a Poison Information Centre on 131126 (Australia Wide) or a doctor. |
| Skin | Cold burns: Remove contaminated clothing and gently flush the affected areas with warm water (30oC) for 15 minutes. DO NOT apply any form of direct heat. Seek immediate medical attention. |
| Ingestion | Due to product form and application, ingestion is considered unlikely. |
| First aid facilities | Eye wash facilities and / or safety shower should be available. This will depend upon the nature of use and associated risks. |
| Most important symptoms and effects, both acute and delayed | |
| In high concentrations, may cause asphyxiation. Direct contact with the liquefied material or escaping compressed gas may cause frostbite injury. | |
| Immediate material attention and special treatment needed | |
| Treat symptomatically | |

# Fire Fighting Measures

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| Extinguishing media |
| Stop flow of gas if safe to do so, such as by slowly closing the cylinder or tank valve as appropriate to the event. |
| Special hazards arising from the substance or mixture |
| Extremely flammable. Eliminate all ignition sources including cigarettes, open flames, spark producing switches / tool, heaters, naked lights, pilot lights, mobile phones etc. when handling. |
| Advice for fire-fighters |
| Temperatures in a fire may cause cylinders to rupture and internal pressure relief devices to be activated. Cool cylinders or containers exposed to fire by applying water from a protected location. Do not extinguish flame if resulting escape gas poses greater risk. Do not approach cylinder or containers suspected of being hot. This material is capable of forming explosive mixtures in air. |
| Hazchem code |
| 2YE  2 Fine Water Spray  Y Risk of violent reaction or explosion. Wear full kit and breathing apparatus. Contain spill and run-off.  E Evacuation of people in and around the immediate vicinity of the incident should be considered. |

# Accidental Release Measures

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| Personal precautions, protective equipment and emergency procedures |
| If the cylinder is leaking, evacuate area of personnel. Inform manufacturer / supplier of leak. Use Personal Protective Equipment (PPE) as detailed in Section 8 of the SDS. Ventilate area where possible and eliminate ignition sources. |
| Environmental precautions |
| Prevent from entering sewers, basements and work pits, or any place where its accumulation can be dangerous. |
| Methods of cleaning up |
| Stop the flow of material, if it is without risk. If the leak is irreparable, move the cylinder to a safe and well ventilated area, and allow to discharge. Keep the area evacuated and free from ignition sources until any leaked or spilled liquid has evaporated. |
| Reference to other sections |
| See section 8 and 13 for exposure controls and disposal |

# Handling and Storage

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| Precautions for safe handling |
| Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating, prohibit eating, drinking and smoking in contaminated areas. |
| Conditions for safe storage, including any incompatibilities |
| Do not store near incompatible substances and sources of ignition. Cylinders should be stored: Upright, prevented from falling, in a secure area: below 45ºC in a dry, well ventilated area constructed of non-combustible material with firm level floor (preferably concrete), away from areas of heavy traffic and emergency exits. |
| Specific end use(s) |
| No information provided |

# Exposure Controls and Personal Protection

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| Control parameters | | | |
| Exposure Standards | | | |
| Ingredient | Reference | TWA |  |
| Butane | NOHSC | 800 ppm 8 hours | Asphyxiant |
| Propane | ACGIH TLV | 1000 ppm 8 hours | Asphyxiant |
| Biological limits: No biological limits have been entered for this product | | | |
| Exposure Controls | | | |
| Engineering Controls | | Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. | |
| PPE – Eye / Face | | Wear safety glasses | |
| PPE – Hands | | Wear insulated or leather gloves | |
| PPE – Body | | Wear non-static long-sleeved shirts and trousers, or coveralls | |

# Physical and Chemical Properties

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| Physical Description / Properties | |
| Appearance | Colourless gas |
| Odour | Normally an odourless gas. Ethyl Mercaptan is added at prescribed quantities to give a distinctive odour to warn of the presence of gas. |
| Flammability | Extremely flammable |
| Boiling Point | -12 to 0ºC (depending upon composition) |
| Flash Point | -80ºC approx. (increased with increasing concentration of n-butane) |
| Melting Point | -160ºC to -135ºC (depending upon composition) |
| Auto Ignition Temperature | 450ºC - 540ºC (depending upon composition) |
| Evaporation Rate | Not applicable |
| pH | Not applicable |
| Specific Gravity Liquid | 0.58 (water = 1) |
| Relative Vapour Density | 2 (Air = 1) |
| Solubility (water) | Slightly soluble |
| Partition coefficient | Not available |
| Vapour Pressure (at 40ºC) | 520 kPa max |
| Upper explosive limit | 8.6% |
| Lower explosive limit | 1.8% |
| Decomposition temperature | Not available |
| Viscosity | Not available |
| Oxidising Properties | Not available |
| Odour threshold | Not available |
| Other Information | |
| % Volatiles | 100% |

# Stability and Reactivity

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| Reactivity |
| Carefully review all information provided in sections 10.2 to 10.6 |
| Reactivity |
| Stable under recommended conditions of storage |
| Possibility of hazardous reactions |
| Polymerization will not occur |
| Conditions to avoid |
| Avoid heat, sparks, open flames and other ignition sources |
| Incompatible materials |
| Incompatible with oxidising agents (e.g. hypochlorite), acids, (e.g. Nitric acid), heat and ignition sources. DO NOT use natural rubber flexible hoses. Also, incompatible (potentially violently) with oxygen, halogens and metal halides. Compatible with most common metals. |
| Hazardous decomposition products |
| This material will not decompose to form hazardous products other than that already present. |

# Toxicological Information

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| Information on toxicological effects | |
| Acute toxicity | No known toxicological effects from this product. Based on available data, the classification criteria are not met. |
| Skin | Not classified as a skin irritant. Contact with the liquefied material or escaping compressed gas may cause frostbite injury. |
| Eyes | Not classified as an irritant to the eyes. Contact with the liquefied material or escaping compressed gas may cause frostbite injury. |
| Sensitisation | Not classified as causing skin or respiratory sensitisation. |
| Mutagenicity | Not classed as a mutagen. |
| Carcinogenicity | Not classified as a carcinogen. |
| Reproductive | Not classified as a reproductive toxin |
| STOT – single exposure | Asphyxiant.  Effects are proportional to oxygen displacement. Over exposure may result in dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness. |
| Aspiration | Not classified as causing aspiration |

# Ecological Information

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| Toxicity |
| No information provided |
| Persistence and degradability |
| No information provided |
| Bio-accumulative potential |
| No Information provided |
| Mobility in soil |
| No information provided |
| Other adverse effects |
| No known ecological damage is caused by this product |

# Disposal Considerations

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| Waste treatment methods | |
| Waste disposal | Cylinders should be returned to the supplier for disposal of contents. Small customers owned cylinders should be made safe at a Gas Cylinder Test Station prior to disposal.  LPG cylinders should be returned to the owning organisation stamped on the cylinder when no longer required.  Contact Geogas Pacific for disposal of LPG from tanks. |
| Legislation | Dispose of in accordance with the relevant local legislation. |

# Transport Information

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| Classified as a Dangerous Good by the criteria if the ADG code |  | | |
|  | Land Transport (ADG) | Sea Transport (IMDG / IMO) | Air Transport (IATA / ICAO) |
| UN Number | 1011 or1075 | 1075 | 1011 |
| Proper Shipping Name | Butane | Butane | Butane |
| Transport Hazard Class | 2.1 | 2.1 | 2.1 |
| Packing Group | None allocated | None allocated | None allocated |
| Alternative Names | | | |
| Petroleum Gases, Liquefied; LP Gas (Australia only) | | | |
| Environmental hazards | | | |
| No information provided | | | |
| Special precautions for user | | | |
| Hazxhem Code | 2YE. | | |
| GTEPG | 2A2. | | |
| EMS | F-D, S-U | | |
| Other Information | Ensure cylinders are separated from driver and that outlet of relief valve device is not obstructed.  Cylinders must be secured in an upright position for transport.  Transport in accordance with the requirements of ADG Code and the Load Restraint Guide. | | |

# Regulatory Information

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| Safety, health and environmental regulations / legislation specific for the substance or mixture | |
| Poison schedule | A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP). |
| Classifications | The Classification is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.  The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)] |
| Hazard Codes | F+ Extremely flammable |
| Safety phrases | S9 Keep container in a well-ventilated place  S16 Keep away from sources of ignition – No smoking |
| Inventory listing(s) | AUSTRALIA: AICS (Australian Inventory of Chemical Substances).  All components are listed on AICS or are exempt |

# Other Information

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| Additional Information | |
| The storage if on-site Autogas storage tanks must comply with AS/NZS 1596 “The storage and handling of LP Gas” | |
| Asphyxiants (1) | When present in the atmosphere in high concentrations, asphyxiants reduce the oxygen concentration by displacement. Atmospheres deficient in oxygen do not provide sensory warning of danger and most simple asphyxiants are odourless. Therefore, it is not appropriate to recommend an exposure standard for each asphyxiant, but to maintain oxygen concentrations. However, some asphyxiants may be given an exposure standard due to the potential for narcotic effects at high concentrations or an explosion hazard. |
| Asphyxiants (2) | There is a significant hazard associated with workers entering poorly ventilated areas (e.g. tanks) where oxygen may be deficient. An air supplied breathing apparatus may be required if adequate ventilation is not ensured. |
| Personal protective equipment guidelines | The recommendation for protective equipment contained within this SDS is provided as a guide only. Factors such as methods of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. |
| Health effects from exposure | It should be noted that the effects from exposure to this product will depend upon several factors including frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risk and apply control methods where appropriate. |
| Abbreviations | |
| ACGIH | American Conference of Governmental Industrial Hygienists |
| CAS# | Chemical Abstract Service number – used to uniquely identify chemical compounds |
| CNS | Central Nervous System |
| EC No. | European Community Number |
| EMS | Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods) |
| GHS | Globally Harmonised System |
| GTEPG | Group Text Emergency Procedure Guide |
| IARC | International Agency for Research on Cancer |
| LC50 | Lethal Dose, 50% / Median Lethal Concentration |
| LD50 | Lethal Dose, 50% / Median Lethal Dose |
| Mg/m³ | Milligrams per Cubic Metre |
| OEL | Occupational Exposure Limit |
| pH | Related to hydrogen ion concentration using a scale of 0 (highly acidic) to 14 (highly alkaline) |
| ppm | Parts Per Million |
| STEL | Short Term Exposure Limit |
| STOT-RE | Specific target organ toxicity (repeated exposure) |
| STOT-SE | Specific target organ toxicity (single exposure) |
| SUSMP | Standard for the Uniform Scheduling of Medicines and Poisons |
| TLV | Threshold Limit Value |
| TWA | Time Weighted Average |

SDS Receipt Acknowledgement

I hereby acknowledge that I have been provided with a copy of the Geogas Pacific Safety Data Sheet for Liquefied Petroleum Gas.

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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