# Butane

Safety Data Sheet

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Revision date: 11/27/2018 Supersedes: 01/01/2014 Version: 1.0

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product name : Butane

Product form : Mixture

Other means of identification : Butane; Commerical Butane; Liquefied Petroleum Gas; Normal Butane; N-Butane; Stenched Butane

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Liquefied Petroleum Gas

### 1.3. Details of the supplier of the safety data sheet

Archon Refinery, LLC
Archon Trading Company Archon LLC
201 East Fifth Street, Suite 800, Cincinnati Oh 45202

### 1.4. Emergency telephone number

(Archon reference number: 225708)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

**GHS-US classification**

Flam. Gas 1 H220
Compressed gas H280

### 2.2. Label elements

**GHS-US labelling**

Hazard pictograms (GHS-US) :

GHS02 GHS04

Signal word (GHS-US) : **Danger**

Hazard statements (GHS-US) : H220 - Extremely flammable gas
H280 - Contains gas under pressure; may explode if heated

Precautionary statements (GHS-US) : P210 - Keep away from heat, open flames, sparks. - No smoking
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381 - Eliminate all ignition sources if safe to do so
P403 - Store in a well-ventilated place
P410+P403 - Protect from sunlight. Store in a well-ventilated place

### 2.3. Other hazards

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

| Name | Product identifier | % |
|---|---|---|
| Butane | (CAS No) 106-97-8 | > 94 |
| Isobutane | (CAS No) 75-28-5 | <= 4 |
| Pentane | (CAS No) 109-66-0 | <= 2 |
| Propane | (CAS No) 74-98-6 | <= 1 |

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.

First-aid measures after inhalation : IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if breathing is affected. If breathing is difficult, supply oxygen.

First-aid measures after skin contact : IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes. If irritation develops or persists, get medical attention.

First-aid measures after eye contact : IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. Continue rinsing.

First-aid measures after ingestion : IF SWALLOWED: rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : May cause skin irritation.

Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating.

Symptoms/injuries after ingestion : May cause gastrointestinal irritation.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry chemical.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Extremely flammable gas.

Explosion hazard : Heating may cause an explosion.

Reactivity : Contains gas under pressure; may explode if heated.

### 5.3. Advice for firefighters

Precautionary measures fire : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Firefighting instructions : Use water spray or fog for cooling exposed containers. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Exercise caution when fighting any chemical fire. Do not dispose of fire-fighting water in the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Self-contained breathing apparatus.

Other information : Do not allow run-off from fire fighting to enter drains or water courses - may cause explosion hazard in drains and may reignite. Vapors may travel long distances along ground before igniting/flashing back to vapor source. Vapors may form flammable and explosive mixture with air.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area. Eliminate every possible source of ignition. Ventilate area. Keep upwind. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8).

#### 6.1.1. For non-emergency personnel

Protective equipment : Wear Protective equipment as described in Section 8.

Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Wear suitable protective clothing, gloves and eye or face protection. Approved supplied-air respirator, in case of emergency.

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

For containment : Stop leak if safe to do so. Vapors may be suppressed by water fog.

Methods for cleaning up : Eliminate ignition sources. Use explosion-proof equipment. Beware of accumulation of gas in low areas or contained areas, where explosive concentrations may occur. Ventilate area. This material and its container must be disposed of in a safe way, and as per local legislation.

### 6.4. Reference to other sections

See Sections 8 and 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Do not get in eyes, on skin, or on clothing. Cold burns may occur during filling operations. Containers and delivery lines may become cold enough to present cold burn hazard. Use appropriate personal protection equipment (PPE). Immediately rinse contaminated clothing thoroughly with water. Gas can accumulate in confined spaces and limit oxygen available for breathing.Use only in well-ventilated areas. Avoid breathing gas, vapors, mist. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Use explosion-proof equipment. Can form explosive mixtures with air. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

**Naturally Occurring Radioactive Materials (NORM)**

This product may contain detectable quantities of Naturally Occurring Radioactive Materials (NORM) above background levels. This NORM material consists of small amounts of radon, a naturally occurring radioactive gas; and the solid decay products of radon, called radon daughters. Transport vessels should be assessed for gamma radiation; access around the equipment may need to be restricted in accordance with OSHA 29 CFR 1910.96. For vessel entry, this equipment should be assumed to be internally contaminated with long half-life decay products that emit beta and alpha radiation, which is a radiation hazard if inhaled or ingested.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Containers, even those that have been emptied, can contain explosive vapors. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Incompatible materials, Food. Keep the container tightly closed. Avoid temperature extremes. Keep away from ignition sources. Containers which are opened should be properly resealed and kept upright to prevent leakage. Do not store in unlabeled containers.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

| | |
|---|---|
| **Butane (106-97-8)** | |
| ACGIH STEL (ppm) | 1000 |
| OSHA PEL (TWA) (mg/m³) | 1900 |
| OSHA PEL (TWA) (ppm) | 800 |
| **Isobutane (75-28-5)** | |
| ACGIH STEL (ppm) | 1000 |
| Remark (OSHA) | OELs not established |
| **Pentane (109-66-0)** | |
| ACGIH TWA (ppm) | 600 (listed under Pentane, all isomers) |
| OSHA PEL (TWA) (mg/m³) | 2950 |
| OSHA PEL (TWA) (ppm) | 1000 |
| **Propane (74-98-6)** | |
| ACGIH TWA (ppm) | 1000 (listed under Aliphatic hydrocarbon gases: Alkane C1-4) |
| OSHA PEL (TWA) (mg/m³) | 1800 |
| OSHA PEL (TWA) (ppm) | 1000 |

### 8.2. Exposure controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment with flammable materials. Ensure adequate ventilation, especially in confined areas.

| | | |
|---|---|---|
| Personal protective equipment | : | Gloves. Protective goggles. Wear chemically impervious apron over labcoat and full coverage clothing. |

| | | |
|---|---|---|
| Hand protection | : | Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl. Suitable gloves for this specific application can be recommended by the glove supplier. |
| Eye protection | : | Wear eye protection, including chemical splash goggles and a face shield when possibility exists for eye contact due to spraying liquid or airborne particles. |
| Skin and body protection | : | Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure. |
| Respiratory protection | : | Use NIOSH-approved dust/particulate respirator. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment. |

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

| | | |
|---|---|---|
| Physical state | : | Gas |
| Appearance | : | Liquefied compressed gas. |
| Color | : | No data available |
| Odor | : | Petroleum-like odor. |
| Odor Threshold | : | No data available |
| pH | : | No data available |
| Relative evaporation rate (butylacetate=1) | : | > 1 |
| Melting point | : | No data available |
| Freezing point | : | No data available |
| Boiling point | : | -1 °C (30.2 °F) |
| Flash point | : | -73 °C (- 100 °F) (estimate) |
| Auto-ignition temperature | : | 389.89 °C (750 °F) |
| Decomposition temperature | : | No data available |
| Flammability (solid, gas) | : | Extremely flammable gas |
| Vapor pressure | : | 2670 mm Hg (37 psia) @ 37.8 °C (100 °F) |
| Relative vapor density at 20 °C | : | 2 (Air = 1) |
| Relative density | : | 0.58 @ 15.6 °C (60 °F) |
| Solubility | : | Insoluble.<br>Water: Negligible |
| Log Pow | : | No data available |
| Log Kow | : | No data available |
| Viscosity, kinematic | : | No data available |
| Viscosity, dynamic | : | No data available |
| Explosive properties | : | No data available |
| Oxidising properties | : | No data available |
| Explosive limits | : | 1.9 - 8.5 vol % |

### 9.2. Other information

| | | |
|---|---|---|
| VOC content | : | 100 % |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Contains gas under pressure; may explode if heated.

### 10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

### 10.3. Possibility of hazardous reactions

None known.

### 10.4. Conditions to avoid

Avoid contact with : Ignition sources. Incompatible materials.

### 10.5. Incompatible materials

Acids. Aluminum chloride. Chlorine. Chlorine dioxide. Halogens. Oxidizing agent.

### 10.6. Hazardous decomposition products

Carbon oxides (CO, $CO_{2)}$

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

| **Butane (106-97-8)** | |
|---|---|
| LC50 inhalation rat (mg/l) | 658 g/m³ 4 h |
| **Isobutane (75-28-5)** | |
| LC50 inhalation rat (mg/l) | 658 mg/l/4h |
| **Pentane (109-66-0)** | |
| LD50 oral rat | > 2000 mg/kg |
| LD50 dermal rabbit | 3000 mg/kg |
| LC50 inhalation rat (mg/l) | 364 g/m³ 4 h |
| **Propane (74-98-6)** | |
| LC50 inhalation rat (mg/l) | 658 mg/l/4h |

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : May cause skin irritation.

Symptoms/injuries after eye contact : Direct contact with the eyes is likely to be irritating.

Symptoms/injuries after ingestion : May cause gastrointestinal irritation.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : No information available.

### 12.2. Persistence and degradability

| **Butane** | |
|---|---|
| Persistence and degradability | No information available. |

### 12.3. Bioaccumulative potential

| **Butane** | |
|---|---|
| Bioaccumulative potential | No information available. |

### 12.4. Mobility in soil

| **Butane** | |
|---|---|
| Ecology - soil | No information available. |

### 12.5. Other adverse effects

Other adverse effects : The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. The product contains volatile organic compounds which have a photochemical ozone creation potential.

## SECTION 13: Disposal considerations

**13.1. Waste treatment methods**

Waste treatment methods : Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

## SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1011 Butane (see also Petroleum gases, liquefied), 2.1

UN-No.(DOT) : 1011

DOT NA no. : UN1011

Proper Shipping Name (DOT) : Butane
see also Petroleum gases, liquefied

Department of Transportation (DOT) Hazard Classes : 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115

Hazard labels (DOT) : 2.1 - Flammable gas


DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 150 kg

DOT Vessel Stowage Location : E - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.

DOT Vessel Stowage Other : 40 - Stow ‘‘clear of living quarters’’

**Additional information**

Other information : No supplementary information available.

**Transport by sea**

No additional information available

**Air transport**

No additional information available

## SECTION 15: Regulatory information

**15.1. US Federal regulations**

| **Butane** | |
|---|---|
| All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory<br>All the constituents of this preparation are registered in the EINECS inventory or in the ELINCS list | |
| SARA Section 311/312 Hazard Classes | Fire hazard<br>Reactive hazard |

**15.2. International regulations**

**CANADA**

| **Unleaded Gasoline (NO Ethanol)** |
|---|
| All chemical substances in this product are listed on the Canadian DSL (Domestic Substances List) |

**15.3. US State regulations**

**California Proposition 65**

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm.

| **Butane (106-97-8)** |
|---|
| U.S. - Massachusetts - Right To Know List<br>U.S. - New Jersey - Right to Know Hazardous Substance List<br>U.S. - Pennsylvania - RTK (Right to Know) List |

| **Isobutane (75-28-5)** |
|---|
| U.S. - Massachusetts - Right To Know List<br>U.S. - New Jersey - Right to Know Hazardous Substance List<br>U.S. - Pennsylvania - RTK (Right to Know) List |

| **Pentane (109-66-0)** |
|---|
| U.S. - Massachusetts - Right To Know List<br>U.S. - New Jersey - Right to Know Hazardous Substance List<br>U.S. - Pennsylvania - RTK (Right to Know) List |
| **Propane (74-98-6)** |
| U.S. - Massachusetts - Right To Know List<br>U.S. - New Jersey - Right to Know Hazardous Substance List<br>U.S. - Pennsylvania - RTK (Right to Know) List |

## SECTION 16: Other information

Indication of changes : Revision 1.0: New SDS Created.

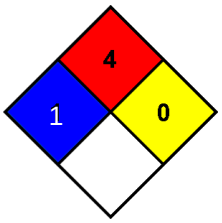
Revision date : 03/06/2015

Other information : Author: BCS.

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard : 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.




**HMIS III Rating**

Health : 1

Flammability : 4

Physical : 0

Personal Protection :

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