



SAFETY DATA SHEET

1. Identification

Product identifier Butane (Field Grade)
Other means of identification
SDS number 1
Recommended use Fuel.
Recommended restrictions None known.
Manufacturer / Importer / Supplier / Distributor information

Company name DCP Midstream
Address 370 17 Street Suite 2500 Denver, CO 80202
Telephone (303) 595-3331
E-mail safety@dcpmidstream.com
Contact person Mark Prewitt
Emergency phone number CHEMTREC - 24 HOURS: 800-424-9300

2. Hazard(s) identification

Physical hazards Flammable gases Category 1
Gases under pressure Liquefied gas
Health hazards Not classified.
OSHA hazard(s) Simple asphyxiant

Label elements

Hazard symbol



Signal word

Hazard statement

Danger
Extremely flammable gas. Contains gas under pressure; may explode if heated. May displace oxygen and cause rapid suffocation.

Precautionary statement

Prevention

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Response

Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

Storage

Store in a well-ventilated place.

Disposal

Dispose of contents/container in accordance with local/regional/national regulations.

Hazard(s) not otherwise classified (HNOC)

Not classified.

3. Composition/information on ingredients

Mixture

Hazardous components

| Chemical name | Common name and synonyms | CAS number | % |
|---------------|--------------------------|------------|-------|
| Butane | | 106-97-8 | 60-75 |
| Isobutane | | 75-28-5 | 25-40 |
| Pentane | | 109-66-1 | 0-2 |
| Propane | | 74-98-6 | 0-2 |

Composition comments

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

| | |
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| Inhalation | Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation. |
| Skin contact | No specific first aid measures noted. |
| Eye contact | Immediately flush with plenty of water for at least 15 minutes. Get medical attention if irritation develops or persists. |
| Ingestion | Not likely, due to the form of the product. |
| Most important symptoms/effects, acute and delayed | Very high exposure can cause suffocation from lack of oxygen. |
| Indication of immediate medical attention and special treatment needed | Treat symptomatically. |
| General information | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

5. Fire-fighting measures



NFPA 704 Hazard Class

Health: 1

Flammability: 4

Instability: 0

(0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

| | |
|--|---|
| Suitable extinguishing media | Carbon dioxide or dry powder. |
| Unsuitable extinguishing media | None known. |
| Specific hazards arising from the chemical | Cylinders can burst violently when heated, due to excess pressure build-up. Gas may travel considerable distance to a source of ignition and flash back. May form explosive mixtures with air. |
| Special protective equipment and precautions for firefighters | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. |
| Fire-fighting equipment/instructions | Evacuate area. Allow gas to burn if flow cannot be shut off immediately. Apply water from safe distance to cool container and protect surrounding area. |

6. Accidental release measures

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| Personal precautions, protective equipment and emergency procedures | Eliminate all sources of ignition. Keep public away from danger area. Ventilate closed spaces before entering. Do not breathe gas. Wear appropriate personal protective equipment. |
| Methods and materials for containment and cleaning up | Stop leak if you can do so without risk. Allow gas to dissipate into the atmosphere. |
| Environmental precautions | Environmental manager must be informed of all major spillages. |

7. Handling and storage

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| Precautions for safe handling | Provide adequate ventilation. Do not enter storage areas or confined spaces unless adequately ventilated. Vapors are heavier than air and may travel along the floor and in the bottom of containers. Vapors may be ignited by a spark, a hot surface or an ember. Take |
|--------------------------------------|---|

precautionary measures against static discharges. Do not breathe gas. Avoid contact with eyes, skin, and clothing. Wear appropriate personal protective equipment. The product is extremely flammable. May form explosive mixtures with air. Avoid heat, sparks, open flames and other ignition sources.
Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Provide adequate ventilation. Keep away from heat, sparks and open flame.

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.

8. Exposure controls/personal protection

Occupational exposure limits

U.S. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components | Type | Value |
|-----------------------|------|------------------------|
| Pentane (109-66-0) | PEL | 2950 mg/m ³ |
| | | 1000 ppm |
| Propane (CAS 74-98-6) | PEL | 1800 mg/m ³ |
| | | 1000 ppm |

U.S. ACGIH Threshold Limit Values

| Components | Type | Value |
|-------------------------|------|----------|
| Butane (CAS 106-97-8) | TWA | 1000 ppm |
| Isobutane (CAS 75-28-5) | TWA | 1000 ppm |
| Pentane (CAS 109-66-0) | TWA | 600 ppm |
| Propane (CAS 74-98-6) | TWA | 1000 ppm |

US. NIOSH: Pocket Guide to Chemical Hazards

| Components | Type | Value |
|-------------------------|---------|------------------------|
| Butane (CAS 106-97-8) | REL | 1900 mg/m ³ |
| | | 800 ppm |
| Isobutane (CAS 75-28-5) | REL | 1900 mg/m ³ |
| | | 800 ppm |
| Pentane (CAS 109-66-0) | Ceiling | 1800 mg/m ³ |
| | | 610 ppm |
| | | REL |
| Propane (CAS 74-98-6) | REL | 350 mg/m ³ |
| | | 120 ppm |
| | | 1800 mg/m ³ |
| | | 1000 ppm |

**Biological limit values
Appropriate engineering
Controls**

No biological exposure limits noted for the ingredient(s).

Explosion proof exhaust ventilation should be used. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection

Risk of contact: Wear safety glasses with side shields.

| | |
|--|--|
| Skin protection Hand protection | Avoid exposure - obtain special instructions before use. Use personal protective equipment as required. Protective gloves. |
| Other | Wear suitable protective clothing. |
| Respiratory protection | If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. |
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. |
| General hygiene considerations | Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Observe any medical surveillance requirements. |

9. Physical and chemical properties

| | |
|---|---------------------------|
| Appearance | Colorless gas. |
| Physical state | Gas. |
| Form | Gas. |
| Color | Colorless. |
| Odor | Odorless. |
| Odor threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | 31 °F (-0.6 °C) |
| Flash point | -100 °F (-73.3 °C) |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Extremely flammable gas. |
| Upper/lower flammability or explosive limits | |
| Flammability limit – lower (%) | 1.9 % |
| Flammability limit – upper (%) | 8.5 % |
| Vapor pressure | 2670 mm Hg (100°F/ 38° C) |
| Vapor density | 2 (Air=1) |
| Relative density | 0.584 (Water=1) |
| Relative density temperature | 60 °F (15.6 °C) |
| Solubility(ies) | Negligible. |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | 550 °F (287.78 °C) |
| Decomposition temperature | Not available. |
| Viscosity | Not available. |

10. Stability and reactivity

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|---|---|
| Reactivity | Not available. |
| Chemical stability | Stable under normal temperature conditions. |
| Possibility of hazardous Reactions | Hazardous polymerization does not occur. |
| Conditions to avoid | Heat, flames and sparks. |
| Incompatible materials | Strong oxidizing agents. |
| Hazardous decomposition Products | Carbon dioxide. Carbon monoxide. |

11. Toxicological information

Information on likely routes of exposure

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|---|--|
| Ingestion | Not likely due to the form of the product. |
| Inhalation | Breathing of high concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. Suffocation(asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. |
| Skin contact | Not likely due to the form of the product. |
| Eye contact | May cause irritation |
| Symptoms related to the physical, chemical and toxicological characteristics | Very high exposure can cause suffocation from lack of oxygen. |

Information on toxicological effects

| | |
|-----------------------|--|
| Acute toxicity | This product is an asphyxiant gas which can cause unconsciousness/death if OXYGEN levels are sufficiently reduced. |
|-----------------------|--|

| Components | Species | Test Results |
|------------------------|---------|-----------------------------|
| Butane (CAS 106-97-8) | | |
| Acute | | |
| <i>Inhalation</i> | | |
| LC50 | Rat | 658 mg/l, 4 Hours |
| Pentane (CAS 109-66-0) | | |
| Acute | | |
| <i>Inhalation</i> | | |
| LC50 | Rat | 364 mg/l, 4 Hours |
| Propane (CAS 74-98-6) | | |
| Acute | | |
| <i>Inhalation</i> | | |
| LC50 | Rat | > 1442.847 mg/l, 15 minutes |

Skin corrosion/irritation Not likely, due to the form of the product.

Serious eye damage/eye Irritation May cause eye irritation.

| | |
|---|---|
| Respiratory sensitization | Not available. |
| Skin sensitization | Not a skin sensitizer. |
| Germ cell mutagenicity | No data available. |
| Carcinogenicity | No data available. |
| Reproductive toxicity | No data available. |
| Specific target organ toxicity - single exposure | Not classified. |
| Specific target organ toxicity - repeated exposure | Not classified. |
| Aspiration hazard | Not available. |
| Chronic effects | Prolonged exposure may cause chronic effects. |

12. Ecological information

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|--------------------|---|
| Ecotoxicity | 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. |
|--------------------|---|

| Product | | | Species | Test Results |
|--|------|-----------|---------|-------------------------------|
| Normal Butane (Commercial Grade) (CAS Mixture) | | | | |
| Aquatic | | | | |
| | EC50 | Crustacea | Daphnia | 115 mg/l, 48 Hours (est) |
| | LC50 | Fish | Fish | 141.8115 mg/l, 96 Hours (est) |

| Components | | | Species | Test Results |
|----------------|------|-----------|---------|---------------------|
| Pentane | | | | |
| Aquatic | | | | |
| | EC50 | Crustacea | Daphnia | 2.3 mg/ l, 48 hours |
| | LC50 | Fish | Fish | 3.1 mg/ l, 96 hours |

| | |
|--------------------------------------|--------------------|
| Persistence and degradability | No data available. |
| Bioaccumulative potential | |

Partition coefficient n-octanol / water (log Kow)

| | |
|-----------|------|
| Propane | 2.36 |
| Isobutane | 2.76 |
| Butane | 2.89 |
| Pentane | 3.39 |

| | |
|-------------------------|----------------|
| Mobility in soil | Not available. |
|-------------------------|----------------|

| | |
|------------------------------|------------------|
| Other adverse effects | Not established. |
|------------------------------|------------------|

13. Disposal considerations

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|------------------------------|--|
| Disposal instructions | Product is suitable for burning in an enclosed, controlled burner for fuel value or disposal by supervised incineration. |
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| | |
|-----------------------------------|--|
| Local disposal regulations | Dispose of in accordance with local regulations. |
|-----------------------------------|--|

| | |
|-----------------------------|---|
| Hazardous waste code | D001: Waste Flammable material with a flash point <140 °F |
|-----------------------------|---|

| | |
|--|--|
| Waste from residues / unused Products | Dispose of in accordance with local regulations. |
|--|--|

Contaminated packaging Not applicable.

14. Transport information

DOT

| | |
|------------------------------|---|
| UN number | UN1075 |
| UN proper shipping name | LIQUEFIED PETROLEUM GAS |
| Transport hazard class(es) | 2.1 |
| Subsidiary class(es) | Not available. |
| Packing group | Not available. |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |
| Special provisions | T50 |
| Packaging exceptions | 306 |
| Packaging non bulk | 304 |
| Packaging bulk | 314, 315 |

IATA

| | |
|------------------------------|---|
| UN number | UN1075 |
| UN proper shipping name | LIQUEFIED PETROLEUM GAS |
| Transport hazard class(es) | 2.1 |
| Subsidiary class(es) - | |
| Packaging group | Not available. |
| Environmental hazards | No |
| Labels required | 2.1 |
| ERG Code | 10L |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |

IMDG

| | |
|--|---|
| UN number | UN1075 |
| UN proper shipping name | LIQUEFIED PETROLEUM GASES |
| Transport hazard class(es) | 2.1 |
| Subsidiary class(es) - | |
| Packaging group | Not available. |
| Marine pollutant | No |
| Environmental hazards | |
| Labels required | 2.1 |
| EmS | F-D, S-U |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | No information available. |

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not on regulatory list.

CERCLA Hazardous Substance List (40 CFR 302.4)

| | |
|------------------------|--------|
| Butane (CAS 106-97-8) | LISTED |
| Isobutane(CAS 75-28-5) | LISTED |
| Pentane (CAS 109-66-0) | LISTED |
| Propane (CAS 74-98-6) | LISTED |

Superfund Amendments and Reauthorization Act of 1986 (SARA)

| | |
|--------------------------|------------------------|
| Hazard categories | Immediate Hazard - Yes |
| | Delayed Hazard - Yes |
| | Fire Hazard - Yes |
| | Pressure Hazard - No |
| | Reactivity Hazard - No |

SARA 302 Extremely

| | |
|----------------------------|----|
| hazardous substance | No |
|----------------------------|----|

SARA 311/312 Hazardous

| | |
|-----------------|-----|
| Chemical | Yes |
|-----------------|-----|

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Butane (CAS 106-97-8)
Isobutane (CAS 75-28-5)
Pentane (CAS 109-66-0)
Propane (CAS 74-98-6)

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Not listed.

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Not regulated.

DEA Exempt Chemical Mixtures Code Number

Not regulated.

Food and Drug

Administration (FDA)

Not regulated.

US state regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Butane (CAS 106-97-8)

Isobutane(CAS 75-28-5)

Pentane (CAS 109-66-0)

Propane (CAS 74-98-6)

US. New Jersey Worker and Community Right-to-Know Act

Butane (CAS 106-97-8) 500 LBS

Isobutane(CAS 75-28-5) 500 LBS

Pentane (CAS 109-66-0) 500 LBS

Propane (CAS 115-07-1) 500 LBS

US. Pennsylvania RTK - Hazardous Substances

Butane (CAS 106-97-8)

Isobutane(CAS 75-28-5)

Pentane (CAS 109-66-0)

Propane (CAS 74-98-6)

US. Rhode Island RTK

Butane (CAS 106-97-8)

Isobutane(CAS 75-28-5)

Pentane (CAS 109-66-0)

Propane (CAS 74-98-6)

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region

Inventory name

On inventory (yes/no)*

Canada

Domestic Substances List (DSL)

Yes

Canada

Non-Domestic Substances List (NDSL)

No

United States & Puerto Rico

Toxic Substances Control Act
(TSCA) Inventory

Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

16. Other information, including date of preparation or last version

Issue date 11-28-2012

Revision date 2-4--2013

Version # 01

Further information Not available.

References

ACGIH

EPA: Acquire database

NLM: Hazardous Substances Data Base

US. IARC Monographs on Occupational Exposures to Chemical Agents

Disclaimer

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.