

Butane 0.0001% to 0.9%, in Air

SDS Number: NLB 2010

Revision Date: 6/1/2018

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PRODUCT AND COMPANY IDENTIFICATION

Manufacturer

NorLab a division of Norco
898 W. Gowen Rd.
Boise, ID 83705

Contact: Quality Dept.
Phone: 208-336-1643
Fax: 208-433-6160
Web: www.norlab-gas.com

Product Name: Butane 0.0001% to 0.9%, in Air
Revision Date: 6/1/2018
Version: 2
SDS Number: NLB 2010
Common Name: Butane in Air
CAS Number: Not Available - Gas Mixture
EPA Number: Not Available
Chemical Family: Gas Mixture
Chemical Formula: C₄H₁₀ in Air
Synonyms: Butane in Air; n-Butane in Air, normal-Butane in Air
Product Use: Calibration of analytical instrumentation

For Transportation Emergency Contact CHEMTREC: 800-424-9300

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HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification in Accordance with 29 CFR 1910 (OSHA HCS):
Physical, Gases Under Pressure, Compressed Gas

GHS Label Elements, Including Precautionary Statements

GHS Signal Word: **WARNING**

GHS Hazard Pictograms:



GHS Hazard Statements:

H280 - Contains gas under pressure; may explode if heated
CGA-HG24 - SUPPORTS COMBUSTION.

GHS Precautionary Statements:

P202 - Do not handle until all safety precautions have been read and understood.
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
P281 - Use personal protective equipment as required.
P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P271 - Use only outdoors or in a well-ventilated area.
P410+412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F
CGA-PG05 - Use a back flow preventive device in the piping.

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CGA-PG06 - Close valve after each use and when empty.
CGA-PG10 - Use only with equipment rated for cylinder pressure.

Hazards not Otherwise Classified (HNOC) or not Covered by GHS

Route of Entry: Eyes; Inhalation; Skin;

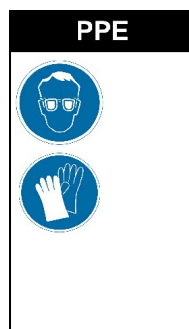
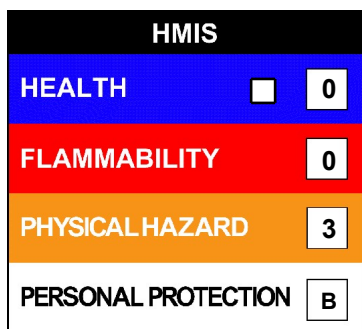
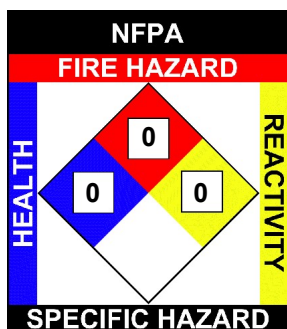
Inhalation: Gas mixture contains sufficient oxygen to support life (at least 99.1% of mix is air). Inhalation of high concentrations of Butane vapors at high concentrations may have a narcotic-like effect.

Skin Contact: Contact with rapidly expanding gas near the point of release may cause frostbite with redness, skin color change to gray or white, and blistering.

Eye Contact: None anticipated. Contact with rapidly expanding gas near the point of release may cause frostbite.

Ingestion: Not anticipated. Product is a gas at normal conditions.

NFPA: Health = 0, Fire = 0, Reactivity = 0, Specific Hazard = n/a
 HMIS III: Health = 0, Fire = 0, Physical Hazard = 3
 HMIS PPE: B - Safety Glasses, Gloves



3 COMPOSITION/INFORMATION OF INGREDIENTS

Ingredients:

Cas#	%	Chemical Name
106-97-8	0.0001-0.9%	Butane
7782-44-7	20.9%	Oxygen
7727-37-9	78.2-79.0999%	Nitrogen

20.9% Oxygen in Nitrogen Indicates an Air Balance.

4 FIRST AID MEASURES

Inhalation: PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO PRODUCT. RESCUE PERSONNEL SHOULD BE EQUIPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area, given assisted (artificial) respiration and supplemental oxygen. Further treatment should be symptomatic and supportive.

Skin Contact: None required for gas. For frostbite, immerse skin in lukewarm water. DO NOT USE HOT WATER. Obtain medical attention.

Eye Contact: None Required for gas. If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.

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Ingestion: Not a direct hazard.

5**FIRE FIGHTING MEASURES**

Flammability: Not Flammable
Flash Point: None
Flash Point Method: Not Applicable
Burning Rate: Not Applicable
Autoignition Temp: None
LEL: None
UEL: None

Fire and Explosion Hazards:

Nonflammable. Cylinders may rupture violently or vent rapidly from pressure when involved in a fire situation.

Extinguishing Media:

None required. Use as appropriate for surrounding materials

Fire Fighting Instructions:

Firefighters should wear respiratory protection (SCBA) and full turnout or Bunker gear. Continue to cool fire-exposed cylinders until well after flames are extinguished.

6**ACCIDENTAL RELEASE MEASURES**

Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. Evacuate all personnel from affected area. Ventilate enclosed areas. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with inert gas prior to attempting repairs. If leak is in container or valve, contact the appropriate emergency telephone number listed in section 1 or call your closest Norco/NorLab location.

7**HANDLING AND STORAGE****Handling Precautions:**

Use only in well-ventilated areas. Valve protection caps must remain in place unless the cylinder is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure regulator when connecting cylinder to lower pressure (<3000 PSIG) piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous backflow into the cylinder.

For additional recommendations, consult Compressed Gas Association Pamphlets P-1.

Never carry a compressed gas cylinder or a container of a gas in cryogenic liquid from in an enclosed space such as a car trunk, van or station wagon.

Storage Requirements:

Protect cylinders from physical damage. Store in cool, dry, well-ventilated area away from heavy traffic areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 125 degrees F (52 degrees C). Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time.

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8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use local exhaust in combination with general ventilation as necessary to prevent accumulation of high concentrations and maintain air oxygen levels at or above 19.5%.

Personal Protective Equipment: Butane cas#:(106-97-8) [0.0001-0.9%]
Oxygen cas#:(7782-44-7) [20.9%]
Nitrogen cas#:(7727-37-9) [78.2-79.0999%]

Personal protective equipment

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Immersion protection Material: Fluorinated rubber Minimum layer thickness: 0.7 mm Break through time: > 480 min Material tested:Vitoject (Aldrich Z677698, Size M)

Splash protection: Material: Nitrile rubber Minimum layer thickness: 0.4 mm Break through time: > 30 min Material tested:Camatril (Aldrich Z677442, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection: impervious clothing, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Butane cas#:(106-97-8) [0.0001-0.9%]

Components with workplace control parameters

TWA	800 ppm 1,900 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
TWA	1,000 ppm	USA. ACGIH Threshold Limit Values (TLV)
TWA	1,000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Central Nervous System impairment Cardiac sensitization	
TWA	800 ppm 1,900 mg/m3	USA. NIOSH Recommended Exposure Limits

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9**PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:	Colorless Gas	Odor:	Odorless
Physical State:	Gas	Molecular Formula:	C ₄ H ₁₀ , in Air
Odor Threshold:	Not Applicable	Solubility:	Negligible
Particle Size:	Not Applicable	Softening Point:	Not Applicable
Spec Grav./Density:	1 (Air = 1)	Percent Volatile:	100%
Viscosity:	Not Determined	Freezing/Melting Pt.:	Not Determined
Sat. Vap. Conc.:	Not Determined	Flash Point:	Not Determined
Boiling Point:	Not Determined		
Flammability:	Not Flammable		

10**STABILITY AND REACTIVITY**

Chemical Stability:	Stable
Conditions to Avoid:	Avoid open flames and high temperatures.
Materials to Avoid:	Strong oxidizing agents, Oxygen and Nickel Carbonyl
Hazardous Decomposition:	Combustion will produce carbon dioxide and, possibly toxic chemicals such as carbon monoxide.
Hazardous Polymerization:	Will not occur.

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TOXICOLOGICAL INFORMATION

Butane cas#:(106-97-8) [0.0001-0.9%]

Information on toxicological effects

Acute toxicity:

Oral LD50 no data available

Inhalation LC50 LC50 Inhalation - rat - 4 h - 658,000 mg/m³

Dermal LD50

Other information on acute toxicity

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System):no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. May cause skin irritation.

Eyes May cause eye irritation.

Signs and Symptoms of Exposure: Central nervous system depression, giddiness, Shortness of breath, narcosis, Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite., Exposure can cause numbness, tingling, and weakness in extremities., Cyanosis, Pulmonary edema. Effects may be delayed., Abdominal pain, Nausea, Vomiting

Synergistic effects: no data available

Additional Information:

RTECS: EJ4200000

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Oxygen cas#:(7782-44-7) [20.9%]

Information on toxicological effects

Acute toxicity:

Oral LD50 no data available

Inhalation LC50

Dermal LD50

Other information on acute toxicity

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System):no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. May cause skin irritation. Eyes May cause eye irritation.

Signs and Symptoms of Exposure: Nausea, Dizziness, Unconsciousness, May be harmful.

Synergistic effects: no data available

Additional Information:

RTECS: RS2060000

Nitrogen cas#:(7727-37-9) [78.2-79.0999%]

Information on toxicological effects

Acute toxicity:

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Oral LD50 no data available

Inhalation LC50

Dermal LD50

Other information on acute toxicity

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity - single exposure (Globally Harmonized System):no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System):no data available

Aspiration hazard: no data available

Potential health effects: Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Ingestion May be harmful if swallowed. Skin May be harmful if absorbed through skin. May cause skin irritation. Eyes May cause eye irritation.

Signs and Symptoms of Exposure: May be harmful., Nausea, Headache, Vomiting

Synergistic effects: no data available

Additional Information:

RTECS: QW9700000

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ECOLOGICAL INFORMATION

Butane cas#:(106-97-8) [0.0001-0.9%]

Information on ecological effects

Toxicity: no data available

Persistence and degradability: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: no data available

Oxygen cas#:(7782-44-7) [20.9%]

Information on ecological effects

Toxicity: no data available

Persistence and degradability: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: no data available

Nitrogen cas#:(7727-37-9) [78.2-79.0999%]

Information on ecological effects

Toxicity: no data available

Persistence and degradability: no data available

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: no data available

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13**DISPOSAL CONSIDERATIONS**

Dispose of in accordance with local regulations. Do not attempt to dispose of waste or unused quantities in returnable cylinders. Return in the shipping container, properly labeled, with any valve outlet plugs or caps secure and valve protection cap in place to NorLab for proper disposal. Non-refillable containers should be vented in a well-ventilated area then disposed of in compliance with local regulations, or returned to NorLab.

14**TRANSPORT INFORMATION**

UN1956, Compressed gas, n.o.s., 2.2

Proper Shipping Name US:

UN 1956, Compressed Gas N.O.S., (Butane, Air), 2.2

Proper Shipping Name Canada:

UN1956, Compressed Gas, N.O.S., (Butane, Air), 2.2

**15****REGULATORY INFORMATION**

Component (CAS#) [%] - CODES

Butane (106-97-8) [0.0001-0.9%] MASS, NJHS, OSHAWAC, PA, TSCA, TXAIR

Oxygen (7782-44-7) [20.9%] MASS, PA, TSCA

Nitrogen (7727-37-9) [78.2-79.0999%] MASS, PA, TSCA

Regulatory CODE Descriptions

MASS = MA Massachusetts Hazardous Substances List

NJHS = NJ Right-to-Know Hazardous Substances

OSHA WAC = OSHA workplace Air Contaminants

PA = PA Right-To-Know List of Hazardous Substances

TSCA = Toxic Substances Control Act

TXAIR = TX Air Contaminants with Health Effects Screening Level

16**OTHER INFORMATION****Disclaimer:**

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).