

0.0001% to 0.9% Isobutylene in Air**1****PRODUCT AND COMPANY IDENTIFICATION**

Product Identifier: 0.0001% to 0.9% Isobutylene in Air
Synonyms: IsoButene in Air, 2-Methylpropene in Air
Common Name: Isobutylene in Air
SDS Number: NLB 2110
Revision Date: 7/25/2018
Version: 3
CAS Number: Not Available - Gas Mixture
EPA Number: Not Available
RCRA Number: Not Applicable
Chemical Family: Gas Mixture
Chemical Formula: C₄H₈ in Air
Product Use: Calibration of analytical instrumentation

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

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

For Transportation Emergency Contact CHEMTREC: 800-424-9300

2**HAZARDS IDENTIFICATION****Classification of Substance**

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.
P260 - Do not breathe gas.
P271 - Use only outdoors or in a well-ventilated area.
P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P403+233 - Store in a well ventilated place. Keep container tightly closed.
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52 °C (125 °F).
CGA-PG05 - Use a back flow preventive device in the piping.
CGA-PG06 - Close valve after each use and when empty.
CGA-PG10 - Use only with equipment rated for cylinder pressure.
CGA-PG12 - Do not open valve until connected to equipment prepared for use.

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

Route of Entry: Eyes; Inhalation; Skin;
Target Organs: Central nervous system;
Inhalation: Gas mixture contains sufficient oxygen to support life. Inhalation of high concentrations of Iso

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Skin Contact:	Butylene vapors may have a narcotic effect. Symptoms may include dizziness, headache and nausea. 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:	May cause irritation. Contact with rapidly expanding gas near the point of release may cause frostbite.
Ingestion:	Not anticipated. Product is a gas at normal conditions.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Ingredients		
CAS#	%	Chemical Name
115-11-7	0.0001 - 0.9%	Isobutylene
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:	Immediately flush eyes with large amounts of water for at least 15 minutes opening and closing eyelids to ensure adequate rinsing. Seek medical attention. If frostbite is suspected, flush eyes with cool water for 15 minutes and obtain immediate medical attention.
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 Temperature:	None
Lower Explosive Limit:	1.8% (Isobutylene)
Upper Explosive Limit:	9.6% (Isobutylene)
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.

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ACCIDENTAL RELEASE MEASURES

Evacuate all personnel from affected area. 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.

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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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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:

Isobutylene (115-11-7) [0.0001-0.9%]
Oxygen cas#:(7782-44-7) [20.9%]
Nitrogen cas#:(7727-37-9) [78.2-79.0999%]

Personal protective equipment

Eye/face 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 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.

Full contact: Material: Fluorinated rubber Minimum layer thickness: 0.7 mm Break through time: 480 min Material tested: Vitoject (KCL 890 / Aldrich Z677698, Size M)

Splash contact: Material: Nitrile rubber Minimum layer thickness: 0.4 mm Break through time: 60 min Material tested: Camatril (KCL 730 / Aldrich Z677442, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN 374 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 and safety officer 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.

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

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dangerous substance at the specific workplace.

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).

Control of environmental exposure: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Isobutylene cas#:(115-11-7) [0.0001-0.9%]

Components with workplace control parameters

TWA 250 ppm USA. ACGIH Threshold Limit Values (TLV)
Upper Respiratory Tract irritation
body weight effects
Not classifiable as a human carcinogen

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

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

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colorless Gas	Odor:	Faint ethereal and sweetish odor.
Physical State:	Gas	Molecular Formula:	C ₄ H ₈ in Air
Odor Threshold:	Not Available	Solubility:	Negligible
Particle Size:	Not Applicable	Percent Volatile:	100%
Specific Gravity or Density:	1 (Air = 1)	Freezing or Melting Point:	Not Available
Boiling Point:	Not Available	Flash Point:	Not Applicable
Flammability:	Not Flammable	Upper Flammability Limit	9.6% / 1.8% (Isobutylene)
		and Lower Flammability Limit:	

10 STABILITY AND REACTIVITY

Chemical Stability:	Stable
Conditions to Avoid	Avoid open flames and high temperatures.
Identification:	
Materials to Avoid	Strong Oxidizing Agents.
Hazardous Decomposition:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous Polymerization:	Will not occur.

11 TOXICOLOGICAL INFORMATION

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Isobutylene cas#:(115-11-7) [0.0001-0.9%]

Information on toxicological effects

Acute toxicity:

LC50 Inhalation - rat - 4 h - 620,000 mg/m3

Dermal: no data available

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitisation: 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.

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

Specific target organ toxicity - single exposure: no data available

Specific target organ toxicity - repeated exposure: no data available

Aspiration hazard: no data available

Additional Information: RTECS: UD0890000

Acts as a simple asphyxiant by displacing air., Dizziness, Disorientation, Headache, excitement, Central nervous system depression, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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) [78.2-79.9999%]

Information on toxicological effects

Acute toxicity:

Oral LD50 no data available

Inhalation LC50

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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

12**ECOLOGICAL INFORMATION**

Isobutylene cas#:(115-11-7) [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
Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
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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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.

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TRANSPORT INFORMATION

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

Proper Shipping Name US:

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

Proper Shipping Name Canada:

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



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REGULATORY INFORMATION

Component (CAS#) [%] - CODES

Isobutylene (115-11-7) [0.0001-0.9%] HAP, MASS, 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

HAP = Hazardous Air Pollutants

MASS = MA Massachusetts Hazardous Substances List

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

TSCA = Toxic Substances Control Act

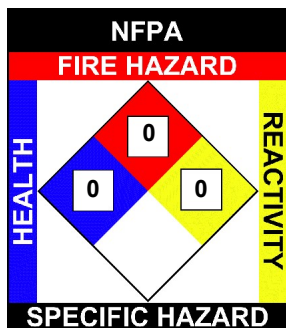
TXAIR = TX Air Contaminants with Health Effects Screening Level

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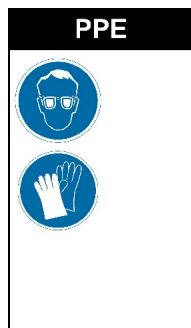
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OTHER INFORMATION

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



HMIS	
HEALTH	0
FLAMMABILITY	0
PHYSICAL HAZARD	3
PERSONAL PROTECTION	B



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