

## 0.0001% to 0.7% Pentane in Air

SDS Number: NLB 2160

Revision Date: 6/1/2018

Page 1 of 10

1

### 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: 0.0001% to 0.7% Pentane in Air  
Revision Date: 6/1/2018  
Version: 2  
SDS Number: NLB 2160  
Common Name: N-Pentane in Air  
CAS Number: Not Available - Gas Mixture  
EPA Number: Not Available  
RCRA Number: Not Applicable  
Chemical Family: Gas Mixture  
Chemical Formula: C<sub>5</sub>H<sub>12</sub> + O<sub>2</sub> + N<sub>2</sub>  
Synonyms: Normal Pentane in Air, n-Pentane in Air  
Product Use: Calibration of analytical instrumentation

2

### 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/vapours/spray.  
P281 - Use personal protective equipment as required.  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P271 - Use only outdoors or in a well-ventilated area.  
P410 + P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.  
CGA-PG05 - Use a back flow preventive device in the piping.  
CGA-PG06 - Close valve after each use and when empty.

**0.0001% to 0.7% Pentane in Air**

SDS Number: NLB 2160

Revision Date: 6/1/2018

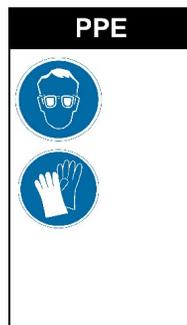
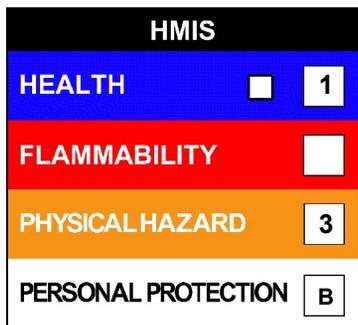
Page 2 of 10

**CGA-PG10 - Use only with equipment rated for cylinder pressure.**

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

- Route of Entry:** Inhalation; Eyes; Skin;
- Target Organs:** Central nervous system; Eyes; Respiratory system; Skin;
- Inhalation:** Inhallation of high concentrations of n-Pentane vapors may have a narcotic effect. Symptoms may include dizziness, headache and nusea.  
  
Gas mixture contains sufficient oxygen to support life.
- Skin Contact:** May cause minor irritation. 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.

**NFPA:** Health = 1, Fire = 0, Reactivity = 0, Specific Hazard = n/a  
**HMIS III:** Health = 1, Fire = , Physical Hazard = 3  
**HMIS PPE:** B - Safety Glasses, Gloves



**3 COMPOSITION/INFORMATION OF INGREDIENTS**

**Ingredients:**

Cas#	%	Chemical Name
109-66-0	0.0001-0.7%	Pentane
7782-44-7	20.9%	Oxygen
7727-37-9	78.4-79.0999%	Nitrogen

20.9% Oxygen in Nitrogen Indicates an Air Balance.

**0.0001% to 0.7% Pentane in Air**

SDS Number: NLB 2160

Revision Date: 6/1/2018

Page 3 of 10

**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:** Flush affected area with large quantities of water. If irritation persists or frostbite is suspected, seek medical attention.
- Eye Contact:** Immediately flush eyes with large amounts of water for at least 15 minutes, lifting eyelids occasionally to facilitate irrigation.  
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 Temp:** None
- LEL:** None
- UEL:** None

**Fire and Explosion Hazards:**  
Nonflammable. contains iso pentane in concentrations below the LEL of 1.5%. 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.

## 0.0001% to 0.7% Pentane in Air

SDS Number: NLB 2160

Revision Date: 6/1/2018

Page 4 of 10

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.

**0.0001% to 0.7% Pentane in Air**

SDS Number: NLB 2160

Revision Date: 6/1/2018

Page 5 of 10

**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:** Pentane cas#:(109-66-0) [0.0001-0.7%]  
Oxygen cas#:(7782-44-7) [20.9%]  
Nitrogen cas#:(7727-37-9) [78.4-79.0999%]

**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. Full contact Material: Nitrile rubber Minimum layer thickness: 0.4 mm Break through time: 480 min Material tested:Camatril (KCL 730 / Aldrich Z677442, Size M)

**Splash protection:** Material: Nitrile rubber Minimum layer thickness: 0.4 mm Break through time: 480 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: 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:** Complete suit protecting against chemicals, 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.

Pentane cas#:(109-66-0) [0.0001-0.7%]

Components with workplace control parameters

TWA 600 ppm USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000  
1,800 mg/m3

STEL 750 ppm USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000  
2,250 mg/m3

TWA 1,000 ppm USA. Occupational Exposure Limits (OSHA) - Table Z- 1 Limits for Air Contaminants  
2,950 mg/m3

The value in mg/m3 is approximate.

TWA 600 ppm USA. ACGIH Threshold Limit Values (TLV)

TWA 600 ppm USA. ACGIH Threshold Limit Values (TLV)  
Peripheral neuropathy

**0.0001% to 0.7% Pentane in Air**

SDS Number: NLB 2160

Revision Date: 6/1/2018

Page 6 of 10

TWA 120 ppm USA. NIOSH Recommended Exposure Limits  
350 mg/m3

CEIL 610 ppm USA. NIOSH Recommended Exposure Limits  
1,800 mg/m3  
15 minute ceiling value

**9 PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	<b>Colorless Gas</b>	<b>Odor:</b>	<b>Slight gasoline type odor</b>
<b>Physical State:</b>	<b>Gas</b>	<b>Molecular Formula:</b>	<b>C5 H12 + O2 + N2</b>
<b>Odor Threshold:</b>	<b>300 - 500 PPM (as n-pentane)</b>	<b>Solubility:</b>	<b>Slightly Soluble</b>
<b>Particle Size:</b>	<b>Not Applicable</b>	<b>Softening Point:</b>	<b>Not Applicable</b>
<b>Spec Grav./Density:</b>	<b>Not Determined</b>		
<b>Viscosity:</b>	<b>Not Applicable</b>		
<b>Flammability:</b>	<b>Not Flammable</b>		

**10 STABILITY AND REACTIVITY**

**Chemical Stability:** Stable  
**Conditions to Avoid:** None known  
**Materials to Avoid:** Strong Oxidizing Agents.  
**Hazardous Decomposition:** Combustion will produce carbon dioxide and, possibly toxic chemicals such as carbon monoxide.  
**Hazardous Polymerization:** Will not occur.

**11 TOXICOLOGICAL INFORMATION**

Pentane cas#:(109-66-0) [0.0001-0.7%]

Information on toxicological effects

Acute toxicity:  
 Oral LD50 LD50 Oral - mouse - 5,000 mg/kg  
 Inhalation LC50 LC50 Inhalation - rat - 4 h - 364,000 mg/m3  
 Dermal LD50 LD50 Dermal - rabbit - 3,000 mg/kg  
 Other information on acute toxicity no data available

Skin corrosion/irritation: Skin - rabbit - No skin irritation - OECD Test Guideline 404

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: Genotoxicity in vitro - Ames test - S. typhimurium - negative

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):  
 May cause drowsiness or dizziness.

**0.0001% to 0.7% Pentane in Air**

SDS Number: NLB 2160

Revision Date: 6/1/2018

Page 7 of 10

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

Aspiration hazard: May be fatal if swallowed and enters airways.

Potential health effects: Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Vapours may cause drowsiness and dizziness. Ingestion May be harmful if swallowed. Aspiration hazard if swallowed - can enter lungs and cause damage. Skin May be harmful if absorbed through skin. May cause skin irritation. Eyes May cause eye irritation.

Signs and Symptoms of Exposure: Contact with eyes can cause:, Redness, Blurred vision, Provokes tears., Prolonged or repeated contact with skin may cause:, defatting, Dermatitis, Central nervous system depression, Damage to the lungs.

Synergistic effects: no data available

Additional Information:

RTECS: RZ9450000

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:

**0.0001% to 0.7% Pentane in Air**

SDS Number: NLB 2160

Revision Date: 6/1/2018

Page 8 of 10

RTECS: RS2060000

Nitrogen cas#:(7727-37-9) [78.4-79.0999%]

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: May be harmful., Nausea, Headache, Vomiting

Synergistic effects: no data available

Additional Information:

RTECS: QW9700000

## 0.0001% to 0.7% Pentane in Air

SDS Number: NLB 2160

Revision Date: 6/1/2018

Page 9 of 10

12

### ECOLOGICAL INFORMATION

Pentane cas#:(109-66-0) [0.0001-0.7%]

Information on ecological effects

Toxicity:

Toxicity to daphnia EC50 - Daphnia magna (Water flea) - 9.74 mg/l - 48 h.  
and other aquatic invertebrates

Persistence and degradability: Biodegradability Biotic/Aerobic Result: 70 % - Readily biodegradable.

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: no data available

Other adverse effects: Toxic to aquatic life.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Avoid release to the environment. Do not empty into drains.

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) [78.4-79.0999%]

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

## 0.0001% to 0.7% Pentane in Air

SDS Number: NLB 2160

Revision Date: 6/1/2018

Page 10 of 10

### 13 DISPOSAL CONSIDERATIONS

Do not attempt to dispose of residual waste or unused quantities in returnable containers. Return in shipping container, properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to Norco for proper disposal.

### 14 TRANSPORT INFORMATION

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

Proper Shipping Name US:

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

Proper Shipping Name Canada:

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



### 15 REGULATORY INFORMATION

Component (CAS#) [%] - CODES

Pentane (109-66-0) [0.0001-0.7%] MASS, NJHS, OSHAWAC, PA, TSCA, TXAIR

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

Nitrogen (7727-37-9) [78.4-79.0999%] MASS, PA, TSCA

Regulatory CODE Descriptions

MASS = MA Massachusetts Hazardous Substances List

NJHS = NJ Right-to-Know Hazardous Substances

OSHA = 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:**

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