

### SECTION 1: Identification

#### 1.1. Product identifier

Product form : Mixture  
Product name : P-18-2264  
Other means of identification : ME - BU, CD, ET, HX, IS, IP, NI, PT PR  
Product group : Specialty Mixtures

#### 1.2. Recommended use and restrictions on use

No additional information available

#### 1.3. Supplier

Praxair Canada inc.  
1200 – 1 City Centre Drive  
Mississauga - Canada L5B 1M2  
T 1-905-803-1600 - F 1-905-803-1682  
[www.praxair.ca](http://www.praxair.ca)

#### 1.4. Emergency telephone number

Emergency number : 1-800-363-0042  
Call emergency number 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product.  
For routine information, contact your supplier or Praxair sales representative.

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

##### GHS-CA classification

Flam. Gas 1 H220  
Compressed gas H280

#### 2.2. GHS Label elements, including precautionary statements

##### GHS-CA labelling

Hazard pictograms :    
GHS02 GHS04

Signal word : DANGER

Hazard statements : **EXTREMELY FLAMMABLE GAS**  
CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED

Precautionary statements : Keep container tightly closed.  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
In case of leakage, eliminate all ignition sources  
Use and store only outdoors or in a well-ventilated place.  
Protect from sunlight when ambient temperature exceeds 52°C (125°F).  
Use a back flow preventive device in the piping.  
Close valve after each use and when empty.

#### 2.3. Other hazards

Other hazards not contributing to the classification : Asphyxiant in high concentrations.



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### 2.4. Unknown acute toxicity (GHS-CA)

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	CAS No.	% (Vol)	Common Name (synonyms)
Methane	(CAS No) 74-82-8	85.65001 - 99.99991	Marsh gas / Natural gas, refrigerated liquid / Methane, compressed
Ethane	(CAS No) 74-84-0	0.00001 - 6	Ethyl hydride / ETHANE
Nitrogen	(CAS No) 7727-37-9	0.00001 - 4	Nitrogen (liquefied) / Nitrogen gas / Nitrogen, liquefied / NITROGEN / Nitrogen, compressed
Carbon dioxide	(CAS No) 124-38-9	0.00001 - 2	CARBON DIOXIDE
Propane	(CAS No) 74-98-6	0.00001 - 2	Propane liquefied / Normal propane / n-Propane / PROPANE
Butane	(CAS No) 106-97-8	0.00001 - 1	n-Butane / BUTANE
Isobutane	(CAS No) 75-28-5	0.00001 - 1	2-Methylpropane / Propane, 2-methyl- / ISOBUTANE
Isopentane	(CAS No) 78-78-4	0.00001 - 1	Butane, 2-methyl- / 2-Methylbutane / ISOPENTANE / Methylbutane
n-Pentane	(CAS No) 109-66-0	0.00001 - 1	n-Pentane / Normal pentane / PENTANE / Pentane, n-
n-Hexane	(CAS No) 110-54-3	0.00001 - 0.09999	Hexane, n- / n-Hexane / Normal hexane

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

- First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Call a physician.
- First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately..

### 4.2. Most important symptoms and effects (acute and delayed)

No additional information available

### 4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : None.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable extinguishing media

Suitable extinguishing media : Carbon dioxide, Dry chemical, Water spray or fog. Use extinguishing media appropriate for surrounding fire.

### 5.2. Unsuitable extinguishing media

No additional information available

### 5.3. Specific hazards arising from the hazardous product

- Fire hazard : **EXTREMELY FLAMMABLE GAS.**
- Explosion hazard : **EXTREMELY FLAMMABLE GAS.** Forms explosive mixtures with air and oxidizing agents.
- Reactivity : No reactivity hazard other than the effects described in sub-sections below.
- Reactivity in case of fire : No reactivity hazard other than the effects described in sub-sections below.

### 5.4. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with their provincial and local fire code regulations.
- Protection during firefighting : Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen. **DANGER! FLAMMABLE, HIGH PRESSURE GAS.**

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- Special protective equipment for fire fighters : Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
- Other information : Containers are equipped with a pressure relief device. (Exceptions may exist where authorized.)

### SECTION 6: Accidental release measures

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

- General measures : If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.

#### 6.2. Methods and materials for containment and cleaning up

#### 6.3. Reference to other sections

For further information refer to section 8: Exposure controls/personal protection

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment.

Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g. wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

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

- Storage conditions : Store only where temperature will not exceed 125°F (52°C). Post "No Smoking/No Open Flames" signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g. NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16.

Store in a cool, well-ventilated place. Store and use with adequate ventilation. Store only where temperature will not exceed 125°F (52°C). Firmly secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods.

**OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE:** When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

<b>Butane (106-97-8)</b>		
USA - ACGIH	ACGIH TLV-STEL (ppm)	1000 ppm
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (ppm)	800 ppm
Alberta	OEL TWA (ppm)	1000 ppm
British Columbia	OEL STEL (ppm)	750 ppm
British Columbia	OEL TWA (ppm)	600 ppm
Manitoba	OEL STEL (ppm)	1000 ppm
New Brunswick	OEL TWA (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
New Brunswick	OEL TWA (ppm)	800 ppm
New Foundland & Labrador	OEL STEL (ppm)	1000 ppm
Nova Scotia	OEL STEL (ppm)	1000 ppm
Nunavut	OEL STEL (mg/m <sup>3</sup> )	2576 mg/m <sup>3</sup>
Nunavut	OEL STEL (ppm)	1000 ppm
Nunavut	OEL TWA (mg/m <sup>3</sup> )	1901 mg/m <sup>3</sup>
Nunavut	OEL TWA (ppm)	800 ppm
Northwest Territories	OEL STEL (ppm)	1250 ppm
Northwest Territories	OEL TWA (ppm)	1000 ppm
Ontario	OEL STEL (ppm)	1000 ppm
Ontario	OEL TWA (ppm)	800 ppm
Prince Edward Island	OEL STEL (ppm)	1000 ppm
Québec	VEMP (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
Québec	VEMP (ppm)	800 ppm
Saskatchewan	OEL STEL (ppm)	1250 ppm
Saskatchewan	OEL TWA (ppm)	1000 ppm
Yukon	OEL STEL (mg/m <sup>3</sup> )	1600 mg/m <sup>3</sup>
Yukon	OEL STEL (ppm)	750 ppm
Yukon	OEL TWA (mg/m <sup>3</sup> )	1400 mg/m <sup>3</sup>
Yukon	OEL TWA (ppm)	600 ppm
<b>Carbon dioxide (124-38-9)</b>		
USA - ACGIH	ACGIH TLV-TWA (ppm)	5000 ppm
USA - ACGIH	ACGIH TLV-STEL (ppm)	30000 ppm
USA - OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
USA - OSHA	OSHA PEL (TWA) (ppm)	5000 ppm
Canada (Quebec)	VECD (mg/m <sup>3</sup> )	54000 mg/m <sup>3</sup>
Canada (Quebec)	VECD (ppm)	30000 ppm
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (ppm)	5000 ppm
Alberta	OEL STEL (mg/m <sup>3</sup> )	54000 mg/m <sup>3</sup>
Alberta	OEL STEL (ppm)	30000 ppm
Alberta	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Alberta	OEL TWA (ppm)	5000 ppm
British Columbia	OEL STEL (ppm)	15000 ppm
British Columbia	OEL TWA (ppm)	5000 ppm

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<b>Carbon dioxide (124-38-9)</b>		
Manitoba	OEL STEL (ppm)	30000 ppm
Manitoba	OEL TWA (ppm)	5000 ppm
New Brunswick	OEL STEL (mg/m <sup>3</sup> )	54000 mg/m <sup>3</sup>
New Brunswick	OEL STEL (ppm)	30000 ppm
New Brunswick	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
New Brunswick	OEL TWA (ppm)	5000 ppm
New Foundland & Labrador	OEL STEL (ppm)	30000 ppm
New Foundland & Labrador	OEL TWA (ppm)	5000 ppm
Nova Scotia	OEL STEL (ppm)	30000 ppm
Nova Scotia	OEL TWA (ppm)	5000 ppm
Nunavut	OEL STEL (mg/m <sup>3</sup> )	27000 mg/m <sup>3</sup>
Nunavut	OEL STEL (ppm)	15000 ppm
Nunavut	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Nunavut	OEL TWA (ppm)	5000 ppm
Northwest Territories	OEL STEL (ppm)	30000 ppm
Northwest Territories	OEL TWA (ppm)	5000 ppm
Ontario	OEL STEL (ppm)	30000 ppm
Ontario	OEL TWA (ppm)	5000 ppm
Prince Edward Island	OEL STEL (ppm)	30000 ppm
Prince Edward Island	OEL TWA (ppm)	5000 ppm
Québec	VECD (mg/m <sup>3</sup> )	54000 mg/m <sup>3</sup>
Québec	VECD (ppm)	30000 ppm
Québec	VEMP (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Québec	VEMP (ppm)	5000 ppm
Saskatchewan	OEL STEL (ppm)	30000 ppm
Saskatchewan	OEL TWA (ppm)	5000 ppm
Yukon	OEL STEL (mg/m <sup>3</sup> )	27000 mg/m <sup>3</sup>
Yukon	OEL STEL (ppm)	15000 ppm
Yukon	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Yukon	OEL TWA (ppm)	5000 ppm
<b>Ethane (74-84-0)</b>		
Alberta	OEL TWA (ppm)	1000 ppm
British Columbia	OEL TWA (ppm)	1000 ppm
Nunavut	OEL STEL (ppm)	1250 ppm
Nunavut	OEL TWA (ppm)	1000 ppm
Northwest Territories	OEL STEL (ppm)	1250 ppm
Northwest Territories	OEL TWA (ppm)	1000 ppm
Saskatchewan	OEL STEL (ppm)	1250 ppm
Saskatchewan	OEL TWA (ppm)	1000 ppm
<b>n-Hexane (110-54-3)</b>		
USA - ACGIH	ACGIH TLV-TWA (ppm)	50 ppm
USA - OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
USA - OSHA	OSHA PEL (TWA) (ppm)	500 ppm
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	176 mg/m <sup>3</sup>

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<b>n-Hexane (110-54-3)</b>		
Canada (Quebec)	VEMP (ppm)	50 ppm
Alberta	OEL TWA (mg/m <sup>3</sup> )	176 mg/m <sup>3</sup>
Alberta	OEL TWA (ppm)	50 ppm
British Columbia	OEL TWA (ppm)	20 ppm
Manitoba	OEL TWA (ppm)	50 ppm
New Brunswick	OEL TWA (mg/m <sup>3</sup> )	176 mg/m <sup>3</sup>
New Brunswick	OEL TWA (ppm)	50 ppm
New Foundland & Labrador	OEL TWA (ppm)	50 ppm
Nova Scotia	OEL TWA (ppm)	50 ppm
Nunavut	OEL STEL (mg/m <sup>3</sup> )	440 mg/m <sup>3</sup>
Nunavut	OEL STEL (ppm)	125 ppm
Nunavut	OEL TWA (mg/m <sup>3</sup> )	352 mg/m <sup>3</sup>
Nunavut	OEL TWA (ppm)	100 ppm
Northwest Territories	OEL STEL (ppm)	62.5 ppm
Northwest Territories	OEL TWA (ppm)	50 ppm
Ontario	OEL TWA (ppm)	50 ppm
Prince Edward Island	OEL TWA (ppm)	50 ppm
Québec	VEMP (mg/m <sup>3</sup> )	176 mg/m <sup>3</sup>
Québec	VEMP (ppm)	50 ppm
Saskatchewan	OEL STEL (ppm)	62.5 ppm
Saskatchewan	OEL TWA (ppm)	50 ppm
Yukon	OEL STEL (mg/m <sup>3</sup> )	450 mg/m <sup>3</sup>
Yukon	OEL STEL (ppm)	125 ppm
Yukon	OEL TWA (mg/m <sup>3</sup> )	360 mg/m <sup>3</sup>
Yukon	OEL TWA (ppm)	100 ppm
<b>Isobutane (75-28-5)</b>		
USA - ACGIH	ACGIH TLV-TWA (ppm)	1000 ppm
USA - ACGIH	ACGIH TLV-STEL (ppm)	1000 ppm
Manitoba	OEL STEL (ppm)	1000 ppm
New Foundland & Labrador	OEL STEL (ppm)	1000 ppm
Nova Scotia	OEL STEL (ppm)	1000 ppm
Nunavut	OEL STEL (ppm)	1250 ppm
Nunavut	OEL TWA (ppm)	1000 ppm
Northwest Territories	OEL STEL (ppm)	1250 ppm
Northwest Territories	OEL TWA (ppm)	1000 ppm
Ontario	OEL STEL (ppm)	1000 ppm
Ontario	OEL TWA (ppm)	800 ppm
Prince Edward Island	OEL STEL (ppm)	1000 ppm
Saskatchewan	OEL STEL (ppm)	1250 ppm
Saskatchewan	OEL TWA (ppm)	1000 ppm
<b>Isopentane (78-78-4)</b>		
USA - ACGIH	ACGIH TLV-TWA (ppm)	1000 ppm
Alberta	OEL TWA (mg/m <sup>3</sup> )	1770 mg/m <sup>3</sup>
Alberta	OEL TWA (ppm)	600 ppm

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<b>Isopentane (78-78-4)</b>		
British Columbia	OEL TWA (ppm)	600 ppm
Manitoba	OEL TWA (ppm)	1000 ppm
New Foundland & Labrador	OEL TWA (ppm)	1000 ppm
Nova Scotia	OEL TWA (ppm)	1000 ppm
Nunavut	OEL STEL (ppm)	750 ppm
Nunavut	OEL TWA (ppm)	600 ppm
Northwest Territories	OEL STEL (ppm)	750 ppm
Northwest Territories	OEL TWA (ppm)	600 ppm
Ontario	OEL TWA (ppm)	600 ppm
Prince Edward Island	OEL TWA (ppm)	1000 ppm
Saskatchewan	OEL STEL (ppm)	750 ppm
Saskatchewan	OEL TWA (ppm)	600 ppm
<b>n-Pentane (109-66-0)</b>		
USA - ACGIH	ACGIH TLV-TWA (ppm)	1000 ppm
USA - OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	2950 mg/m <sup>3</sup>
USA - OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	350 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (ppm)	120 ppm
Alberta	OEL TWA (mg/m <sup>3</sup> )	1770 mg/m <sup>3</sup>
Alberta	OEL TWA (ppm)	600 ppm
British Columbia	OEL TWA (ppm)	600 ppm
Manitoba	OEL TWA (ppm)	1000 ppm
New Brunswick	OEL STEL (mg/m <sup>3</sup> )	2210 mg/m <sup>3</sup>
New Brunswick	OEL STEL (ppm)	750 ppm
New Brunswick	OEL TWA (mg/m <sup>3</sup> )	1770 mg/m <sup>3</sup>
New Brunswick	OEL TWA (ppm)	600 ppm
New Foundland & Labrador	OEL TWA (ppm)	1000 ppm
Nova Scotia	OEL TWA (ppm)	1000 ppm
Nunavut	OEL STEL (mg/m <sup>3</sup> )	2213 mg/m <sup>3</sup>
Nunavut	OEL STEL (ppm)	750 ppm
Nunavut	OEL TWA (mg/m <sup>3</sup> )	1771 mg/m <sup>3</sup>
Nunavut	OEL TWA (ppm)	600 ppm
Northwest Territories	OEL STEL (ppm)	750 ppm
Northwest Territories	OEL TWA (ppm)	600 ppm
Ontario	OEL TWA (ppm)	600 ppm
Prince Edward Island	OEL TWA (ppm)	1000 ppm
Québec	VEMP (mg/m <sup>3</sup> )	350 mg/m <sup>3</sup>
Québec	VEMP (ppm)	120 ppm
Saskatchewan	OEL STEL (ppm)	750 ppm
Saskatchewan	OEL TWA (ppm)	600 ppm
Yukon	OEL STEL (mg/m <sup>3</sup> )	2250 mg/m <sup>3</sup>
Yukon	OEL STEL (ppm)	750 ppm
Yukon	OEL TWA (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
Yukon	OEL TWA (ppm)	600 ppm

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Propane (74-98-6)		
USA - OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
USA - OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (ppm)	1000 ppm
Alberta	OEL TWA (ppm)	1000 ppm
British Columbia	OEL TWA (ppm)	1000 ppm
Northwest Territories	OEL STEL (ppm)	1250 ppm
Northwest Territories	OEL TWA (ppm)	1000 ppm
Québec	VEMP (mg/m <sup>3</sup> )	1800 mg/m <sup>3</sup>
Québec	VEMP (ppm)	1000 ppm
Saskatchewan	OEL STEL (ppm)	1250 ppm
Saskatchewan	OEL TWA (ppm)	1000 ppm

Methane (74-82-8)		
British Columbia	OEL TWA (ppm)	1000 ppm
Nunavut	OEL STEL (ppm)	1250 ppm
Nunavut	OEL TWA (ppm)	1000 ppm
Northwest Territories	OEL STEL (ppm)	1250 ppm
Northwest Territories	OEL TWA (ppm)	1000 ppm
Saskatchewan	OEL STEL (ppm)	1250 ppm
Saskatchewan	OEL TWA (ppm)	1000 ppm

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Use an explosion-proof local exhaust system. Local exhaust and general ventilation must be adequate to meet exposure standards. MECHANICAL (GENERAL): **Inadequate - Use only in a closed system.** Use explosion proof equipment and lighting. Provide adequate general and local exhaust ventilation. Ensure exposure is below occupational exposure limits (where available).

### 8.3. Individual protection measures/Personal protective equipment

Personal protective equipment : Gloves. Face shield. Safety glasses.



Hand protection : Wear work gloves when handling containers. Wear heavy rubber gloves where contact with product may occur.

Eye protection : Wear safety glasses with side shields. Safety eye wear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Select in accordance with the current CSA standard Z94.3, "Industrial Eye and Face Protection", and any provincial regulations, local bylaws or guidelines.

Respiratory protection : **Respiratory protection:** Use respirable fume respirator or air supplied respirator when working in confined space or where local exhaust or ventilation does not keep exposure below TLV. Select in accordance with provincial regulations, local bylaws or guidelines. Selection should be based on the current CSA standard Z94.4, "Selection, Care, and Use of Respirators." Respirators should also be approved by NIOSH and MSHA. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Thermal hazard protection : Wear cold insulating gloves when transfilling or breaking transfer connections.

Other information : **Other protection :** Safety shoes for general handling at customer sites. Metatarsal shoes and cuffless trousers for cylinder handling at packaging and filling plants. Select in accordance with the current CSA standard Z195, "Protective Foot Wear", and any provincial regulations, local bylaws or guidelines. For working with flammable and oxidizing materials, consider the use of flame resistant anti-static safety clothing.





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### SECTION 9: Physical and chemical properties

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

Physical state	: Gas
Appearance	: No data available
Colour	: Colourless.
Odour	: No data available.
Odour threshold	: No data available
pH	: Not applicable.
pH solution	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Vapour pressure	: Not applicable.
Vapour pressure at 50 °C	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Relative density of saturated gas/air mixture	: No data available
Density	: No data available
Relative gas density	: No data available
Solubility	: Water: No data available
Log Pow	: Not applicable.
Log Kow	: Not applicable.
Viscosity, kinematic	: Not applicable.
Viscosity, dynamic	: Not applicable.
Viscosity, kinematic (calculated value) (40 °C)	: No data available
Explosive properties	: Not applicable.
Oxidizing properties	: None.
Flammability (solid, gas)	:

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Reactivity	: No reactivity hazard other than the effects described in sub-sections below.
Chemical stability	: Stable under normal conditions.
Conditions to avoid	: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

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<b>n-Hexane (110-54-3)</b>	
LD50 oral rat	25 g/kg
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat (ppm)	48000 ppm/4h
<b>Isobutane (75-28-5)</b>	
LC50 inhalation rat (ppm)	285000 ppm/1h
<b>n-Pentane (109-66-0)</b>	
LC50 inhalation rat (mg/l)	(Exposure time: 4 h)
LC50 inhalation rat (ppm)	246702 ppm/1h
Skin corrosion/irritation	: Not classified pH: Not applicable.
Serious eye damage/irritation	: Not classified pH: Not applicable.
Respiratory or skin sensitization	: 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

## SECTION 12: Ecological information

### 12.1. Toxicity

<b>n-Hexane (110-54-3)</b>	
LC50 fish 1	2.54 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
<b>Isopentane (78-78-4)</b>	
EC50 Daphnia 1	2.3 mg/l (Exposure time: 48 h - Species: Daphnia magna)
<b>n-Pentane (109-66-0)</b>	
LC50 fish 1	9.87 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
LC50 fish 2	11.59 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	9.74 mg/l (Exposure time: 48 h - Species: Daphnia magna)

### 12.2. Persistence and degradability

<b>P-18-2264</b>	
Persistence and degradability	No ecological damage caused by this product.
<b>Butane (106-97-8)</b>	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.
<b>Carbon dioxide (124-38-9)</b>	
Persistence and degradability	No ecological damage caused by this product.
<b>Ethane (74-84-0)</b>	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.
<b>Isobutane (75-28-5)</b>	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.
<b>Isopentane (78-78-4)</b>	
Persistence and degradability	Not established.
<b>Nitrogen (7727-37-9)</b>	
Persistence and degradability	No ecological damage caused by this product.

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<b>Propane (74-98-6)</b>	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.
<b>Methane (74-82-8)</b>	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.
<b>12.3. Bioaccumulative potential</b>	
<b>P-18-2264</b>	
Log Pow	Not applicable.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.
<b>Butane (106-97-8)</b>	
Log Pow	2.89
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
<b>Carbon dioxide (124-38-9)</b>	
BCF fish 1	(no bioaccumulation)
Log Pow	0.83
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.
<b>Ethane (74-84-0)</b>	
Log Pow	1.81
Log Kow	Not applicable.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
<b>Isobutane (75-28-5)</b>	
BCF fish 1	1.57 - 1.97
Log Pow	2.76
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
<b>Isopentane (78-78-4)</b>	
Log Pow	3.2 - 3.3
Bioaccumulative potential	Not established.
<b>Nitrogen (7727-37-9)</b>	
Log Pow	Not applicable for inorganic gases.
Log Kow	Not applicable.
Bioaccumulative potential	No ecological damage caused by this product.
<b>n-Pentane (109-66-0)</b>	
Log Pow	3.39
<b>Propane (74-98-6)</b>	
Log Pow	2.36
Log Kow	Not applicable.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
<b>Methane (74-82-8)</b>	
Log Pow	1.09
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.
<b>12.4. Mobility in soil</b>	
<b>P-18-2264</b>	
Mobility in soil	No data available.
Log Pow	Not applicable.
Log Kow	Not applicable.
<b>Butane (106-97-8)</b>	
Log Pow	2.89
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

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<b>Carbon dioxide (124-38-9)</b>	
Mobility in soil	No data available.
Log Pow	0.83
Log Kow	Not applicable.
Ecology - soil	No ecological damage caused by this product.
<b>Ethane (74-84-0)</b>	
Mobility in soil	No data available.
Log Pow	1.81
Log Kow	Not applicable.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
<b>Isobutane (75-28-5)</b>	
Log Pow	2.76
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
<b>Isopentane (78-78-4)</b>	
Log Pow	3.2 - 3.3
<b>Nitrogen (7727-37-9)</b>	
Mobility in soil	No data available.
Log Pow	Not applicable for inorganic gases.
Log Kow	Not applicable.
Ecology - soil	No ecological damage caused by this product.
<b>n-Pentane (109-66-0)</b>	
Log Pow	3.39
<b>Propane (74-98-6)</b>	
Mobility in soil	No data available.
Log Pow	2.36
Log Kow	Not applicable.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.
<b>Methane (74-82-8)</b>	
Log Pow	1.09
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

### 12.5. Other adverse effects

Effect on the ozone layer : None.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

## SECTION 14: Transport information

### 14.1. Basic shipping description

In accordance with TDG

#### TDG

UN-No. (TDG) : UN1954  
TDG Primary Hazard Classes : 2.1 - Class 2.1 - Flammable Gas.  
Proper shipping name : COMPRESSED GAS, FLAMMABLE, N.O.S.

ERAP Index : 3 000  
Explosive Limit and Limited Quantity Index : 0.125 L

### 14.3. Air and sea transport

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### IMDG

UN-No. (IMDG)	: 1954
Proper Shipping Name (IMDG)	: COMPRESSED GAS, FLAMMABLE, N.O.S.
Class (IMDG)	: 2.1 - Flammable gases

### IATA

UN-No. (IATA)	: 1954
Proper Shipping Name (IATA)	: COMPRESSED GAS, FLAMMABLE, N.O.S.
Class (IATA)	: 2

## SECTION 15: Regulatory information

### 15.1. National regulations

#### Butane (106-97-8)

Listed on the Canadian DSL (Domestic Substances List)

#### Carbon dioxide (124-38-9)

Listed on the Canadian DSL (Domestic Substances List)

#### Ethane (74-84-0)

Listed on the Canadian DSL (Domestic Substances List)

#### n-Hexane (110-54-3)

Listed on the Canadian DSL (Domestic Substances List)

#### Isobutane (75-28-5)

Listed on the Canadian DSL (Domestic Substances List)

#### Isopentane (78-78-4)

Listed on the Canadian DSL (Domestic Substances List)

#### Nitrogen (7727-37-9)

Listed on the Canadian DSL (Domestic Substances List)

#### n-Pentane (109-66-0)

Listed on the Canadian DSL (Domestic Substances List)

#### Propane (74-98-6)

Listed on the Canadian DSL (Domestic Substances List)

#### Methane (74-82-8)

Listed on the Canadian DSL (Domestic Substances List)

### 15.2. International regulations

#### Butane (106-97-8)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on CICR (Turkish Inventory and Control of Chemicals)

#### Carbon dioxide (124-38-9)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on CICR (Turkish Inventory and Control of Chemicals)

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### Ethane (74-84-0)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)

### n-Hexane (110-54-3)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on CICR (Turkish Inventory and Control of Chemicals)

### Isobutane (75-28-5)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on CICR (Turkish Inventory and Control of Chemicals)

### Isopentane (78-78-4)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on CICR (Turkish Inventory and Control of Chemicals)

### Nitrogen (7727-37-9)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)

### n-Pentane (109-66-0)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
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### Propane (74-98-6)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on CICR (Turkish Inventory and Control of Chemicals)

### Methane (74-82-8)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on CICR (Turkish Inventory and Control of Chemicals)

## SECTION 16: Other information

Date of issue : 31/05/2017

Indication of changes:

Training advice : Ensure operators understand the flammability hazard.

Other information : When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product.

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

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