

SECTION 1: Product and company identification

1.1. Product identifier

Product form : Substance
 Substance name : PTG-4091
 CAS No : 74-85-1
 Formula : C2H4

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Industrial use
 Restrictions on use : No additional information

1.3. Details of the supplier of the safety data sheet

Manufactured For:
 Scientific Gas Australia Pty Ltd.
 Unit 10, 12 Anderson Street
 Banksmeadow NSW, 2019 - Australia
 T PH 1300 880 531

By:
 PortaGas (Praxair, Inc.)
 1202 E Sam Houston Pkwy S
 Pasadena, TX 77503
 T 281-928-6477

New Zealand:
 Airtanks Limited Unit 3,
 5/343 Church Street, Onehunga,
 Auckland 1061, New Zealand
 Phone: +64 9 930 6360

1.4. Emergency telephone number

Emergency number : Australian Poison Information Centre: 13 11 26;
 Australian Fire Brigade: 000
 Onsite Emergency: 1-800-645-4633

CHEMTREC, 24hr/day 7days/week
 — Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887
 (collect calls accepted, Contract 17729)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS-AU)

Flam. Gas 1 H220
 Press. Gas (Liq.) H280
 STOT SE 3 H336

2.2. Label elements

GHS AU labelling

Hazard pictograms (GHS AU) :



Signal word (GHS AU) :

DANGER

Hazard statements (GHS AU) :

H220 - **EXTREMELY FLAMMABLE GAS**
 H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
 H336 - MAY CAUSE DROWSINESS OR DIZZINESS

Precautionary statements (GHS AU) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.



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- P261 - Avoid breathing gas, vapors
- P271 - Use and store only outdoors or in a well-ventilated area.
- P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P312 - Call a poison center/doctor if you feel unwell
- P377 - LEAKING GAS FIRE: Do not extinguish, unless leak can be stopped safely.
- P381 - Eliminate all ignition sources if safe to do so.
- P403 - Use and store only outdoors or in a well-ventilated place.
- P233 - Keep container tightly closed.
- P405 - Store locked up
- P501 - Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.
- CGA-PG27 - Read and follow the Safety Data Sheet (SDS) before use.
- CGA-PG21 - Open valve slowly.
- 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-PG11 - Never put cylinders into unventilated areas of passenger vehicles.
- CGA-PG12 - Do not open valve until connected to equipment prepared for use.

2.3. Other hazards

Other hazards which do not result in classification : Asphyxiant in high concentrations.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substance

Name : PTG-4091
CAS No : 74-85-1

Name	Product identifier	%
Ethylene	(CAS No) 74-85-1	≤ 100

3.2. Mixture

Not applicable

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 skin contact : The liquid may cause frostbite. For exposure to liquid, immediately warm frostbite area with warm water not to exceed 105°F (41°C). Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal coloring and sensation have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water. Seek medical evaluation and treatment as soon as possible.
- 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, both acute and delayed

4.3. Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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



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HazChem code : 2SE.

5.2. Special hazards arising from the substance or mixture

- 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.

5.3. Advice for firefighters

- 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. 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 OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.
- Hazchem Code : 2SE
- Protection during firefighting : Compressed gas: asphyxiant. Suffocation hazard by lack of oxygen. **DANGER! FLAMMABLE, HIGH PRESSURE GAS..**
- 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 by DOT.).

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.

6.1.1. For non-emergency personnel

6.1.2. For emergency responders

6.2. Environmental precautions

Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

6.3. Methods and material for containment and cleaning up

6.4. Reference to other sections

See also sections 8 and 13.



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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 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.

7.3. Specific end use(s)

None.



SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ethylene (74-85-1)		
ACGIH	ACGIH OEL TWA	200 ppm
ACGIH	Remark (ACGIH)	Asphyxia

8.2. Exposure 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).

Personal protective equipment	: Gloves. Safety glasses.
	 
Eye protection	: Wear safety glasses when handling cylinders; vapor-proof goggles and a face shield during cylinder changeout or whenever contact with product is possible. Select eye protection in accordance with AS/NZS 1336 and AS/NZS 1337.
Skin and body protection	: Wear work gloves and metatarsal shoes for cylinder handling. Protective equipment where needed. Select in accordance with AS/NZS 2161, AS/NZS 2210.1, and AS/NZS 4503.
Respiratory protection	: When workplace conditions warrant respirator use, follow a respiratory protection program that meets AS/NSZ 1715, AS/NSZ 1716, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure. 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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Appearance	: Colorless gas.
Molecular mass	: 28 g/mol
Color	: Colorless.
Odor	: Sweetish. Poor warning properties at low concentrations.
Odor threshold	: Odor threshold is subjective and inadequate to warn for overexposure.
pH	: Not applicable.
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: -169 °C
Freezing point	: No data available
Boiling point	: -102.4 °C (at 700 mmHg)
Flash point	: Not applicable.
Critical temperature	: 9.5 °C
Auto-ignition temperature	: 440 °C
Decomposition temperature	: No data available
Flammability	: No data available
Vapor pressure	: Not applicable.
Critical pressure	: 5041 kPa
Relative vapor density at 20 °C	: No data available
Relative density	: 0.57
Density	: 0.974 g/cm ³ (at 15 °C)
Relative gas density	: 0.975
Solubility	: Water: 130 mg/l
Partition coefficient n-octanol/water (Log Pow)	: Not applicable.
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: No reliable data available.
Viscosity, dynamic	: No reliable data available.
Explosive properties	: No data available

Oxidizing properties : No oxidising properties.
 Explosion limits : Not known.

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

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

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

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

Ethylene (74-85-1)	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : MAY CAUSE DROWSINESS OR DIZZINESS.

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not applicable

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

PTG-4091 (74-85-1)	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.

Ethylene (74-85-1)	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.

12.3. Bioaccumulative potential

PTG-4091 (74-85-1)	
BCF - Fish [1]	4 – 4.6
Partition coefficient n-octanol/water (Log Pow)	Not applicable.
Ethylene (74-85-1)	
BCF - Fish [1]	4 – 4.6
Partition coefficient n-octanol/water (Log Pow)	Not applicable.

12.4. Mobility in soil

PTG-4091 (74-85-1)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution. Partition into soil is unlikely.
Ethylene (74-85-1)	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution. Partition into soil is unlikely.

12.5. Other adverse effects

Effect on ozone layer	: No effect on the ozone layer.
Effect on the global warming	: When discharged in large quantities may contribute to the greenhouse effect. Contains greenhouse gas(es) not covered by 842/2006/EC. Contains fluorinated greenhouse gases covered by the Kyoto protocol.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Do not attempt to dispose of residual or unused quantities. Return container to supplier.

SECTION 14: Transport information

Transport of Australian Dangerous Goods

UN-No. (ADG)	: UN1962
Proper Shipping Name (ADG)	: ETHYLENE
Class (ADG)	: 2.1 - Class 2.1 - Flammable gas
Danger labels (ADG)	: 2.1 - Flammable gases



In accordance with DOT

Transport document description	: UN1962 Ethylene, 2.1
UN-No.(DOT)	: UN1962
Proper Shipping Name (DOT)	: Ethylene
Class (DOT)	: 2.1 - Class 2.1 - Flammable gas
Hazard labels (DOT)	: 2.1 - Flammable gas



Additional information

Emergency Response Guide (ERG) Number	: 115 (UN1038);116P (UN1962)
HazChem code	: 2SE.
Other information	: No supplementary information available.
Special transport precautions	: Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

Transport by sea

UN-No. (IMDG)	: 1962
Proper Shipping Name (IMDG)	: ETHYLENE
Class (IMDG)	: 2 - Gases
Limited quantities (IMDG)	: 0
EmS-No. (1)	: F-D
EmS-No. (2)	: S-U

Air transport

UN-No. (IATA)	: 1962
Proper Shipping Name (IATA)	: Ethylene
Class (IATA)	: 2 - Gases
Instruction "cargo" (ICAO)	: 200
Instruction "passenger" (ICAO)	: FORBIDDEN
Instruction "passenger" - Limited quantities (ICAO)	: FORBIDDEN

SECTION 15: Regulatory information

15.1. US Federal regulations

Ethylene (74-85-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313

SARA Section 313 - Emission Reporting	1 %
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15.2. International regulations

CANADA

Ethylene (74-85-1)>

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Ethylene (74-85-1)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

15.2.2. National regulations



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Ethylene (74-85-1)

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 Japanese ENCS (Existing & New Chemical Substances) inventory
 Listed on the Japanese ISHL (Industrial Safety and Health Law)
 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 INSQ (Mexican National Inventory of Chemical Substances)
 Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

PTG-4091(74-85-1)

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No

Ethylene (74-85-1)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
No	No	No	No	

Ethylene (74-85-1)

U.S. - Massachusetts - Right To Know List
 U.S. - New Jersey - Right to Know Hazardous Substance List
 U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
 U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

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.

Linde 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.

The opinions expressed herein are those of qualified experts within Linde Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Linde Inc, it is the user's obligation to determine the conditions of safe use of the product.

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SDS Australia - Praxair

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