

### SECTION: 1. Product and company identification

#### 1.1. Product identifier

Product form : Substance  
 Substance name : PTG-4066  
 Chemical name : n-Butane  
 CAS No : 106-97-8  
 Formula : C4H10

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

Use of the substance/mixture : Calibration / Reference  
 Use of the substance/mixture : Industrial use; Use as directed.

#### 1.3. Details of the supplier of the safety data sheet

Manufactured For:	By:
Scientific Gas Australia Pty Ltd.	PortaGas (Praxair, Inc.)
Unit 10, 12 Anderson Street	1202 E Sam Houston Pkwy S
Banksmeadow NSW, 2019 - Australia	Pasadena, TX 77503
T PH 1300 880 531	T 281-928-6477

#### 1.4. Emergency telephone number

**Emergency number** : Onsite Emergencies: 1-800-645-4633; Australian Poison Information Centre: 13 11 26;  
 Australian Fire Brigade: 000  
 CHEMTREC: USA 1-800-424-9300, International 001-703-527-3887 (Collect calls accepted, contract 17729)

### SECTION 2: Hazard identification

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

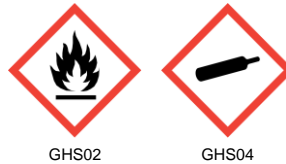
##### Classification (GHS-AU)

Flam. Gas 1    H220  
 Press. Gas (Liq.)    H280  
 Aquatic Acute 3    H402

#### 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  
 H402 - HARMFUL TO AQUATIC LIFE

Precautionary statements (GHS-AU) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Sparks, Open flames, Heat  
 P273 - Avoid release to the environment.  
 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.  
 P261 - Avoid breathing gas, vapors  
 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-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.  
 CGA-PG06 - Close valve after each use and when empty.  
 CGA-PG05 - Use a back flow preventive device in the piping.  
 CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F).  
 CGA-MP01 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention.

### 2.3. Other hazards

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

No data available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substance

Name : PTG-4066  
 CAS No : 106-97-8

Name	Product identifier	%
Butane	(CAS No) 106-97-8	< 100

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures after inhalation : Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped. 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.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

### 4.2. Most important symptoms and effects, both acute and delayed

No additional information available

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

Obtain medical assistance.

## 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.

HazChem code : 2YE.

### 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 their provincial and local fire regulations.
- Protection during firefighting : **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

No additional information available

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Try to stop release. 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

No additional information available

### 6.4. Reference to other sections

See also sections 8 and 13.

## 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.

### 7.3. Specific end use(s)

None.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Butane (106-97-8)		
ACGIH	ACGIH TLV-STEL (ppm)	1000 ppm
AU SWA TWA PPM	TWA (ppm)	800 ppm
AU SWA TWA MGM3	TWA (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
AU SWA STEL MGM3	STEL (mg/m <sup>3</sup> )	1900 mg/m <sup>3</sup>
USA OSHA	Not established	

### 8.2. Exposure controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Alarm detectors should be used when toxic gases may be released. Product to be handled in a closed system. Ensure exposure is below occupational exposure limits (where available). 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.

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 or liquefied gas.
Molecular mass	: 58 g/mol
Color	: Colorless
Odor	: No data available
Odor threshold	: No data available
pH	: Not applicable.
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: Not applicable.
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 272.65 K
Flash point	: -60 °C
Critical temperature	: 425.5 K
Auto-ignition temperature	: 560 K
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: Not applicable.
Critical pressure	: 3758 kPa
Relative vapor density at 20 °C	: No data available
Relative 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.
Explosive properties	: Not applicable.
Oxidizing properties	: None.
Explosion limits	: No data available

### 9.2. Other information

No additional information available

## 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
- 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**

Ecology - general : HARMFUL TO AQUATIC LIFE.

**12.2. Persistence and degradability**

<b>PTG-4066 (106-97-8)</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.

**12.3. Bioaccumulative potential**

<b>PTG-4066 (106-97-8)</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.

**12.4. Mobility in soil**

<b>PTG-4066 (106-97-8)</b>	
Mobility in soil	No data available.
<b>Butane (106-97-8)</b>	
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

**12.5. Other adverse effects**

Effect on ozone layer : None.

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

- Waste treatment methods : Do not attempt to dispose of residual or unused quantities. Return container to supplier.  
 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) : UN1011  
 Proper Shipping Name (ADG) : BUTANE  
 Class (ADG) : 2.1 - Class 2.1 - Flammable gas  
 Danger labels (ADG) : 2.1 - Flammable gases



#### In accordance with DOT

- Transport document description : UN1011 Butanes, 2.1  
 UN-No.(DOT) : UN1011  
 Proper Shipping Name (DOT) : Butanes  
 Class (DOT) : 2.1 - Class 2.1 - Flammable gas  
 Hazard labels (DOT) : 2.1 - Flammable gas



- DOT Special Provisions (49 CFR 172.102) : 19 - For domestic transportation only, the identification number UN1075 may be used in place of the identification number specified in column (4) of the 172.101 table. The identification number used must be consistent on package markings, shipping papers and emergency response information.  
 T50 - When portable tank instruction T50 is referenced in Column (7) of the 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of 173.313 of this subchapter.

#### Additional information

- Emergency Response Guide (ERG) Number : 115  
 HazChem code : 2YE.  
 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) : 1011  
 Proper Shipping Name (IMDG) : BUTANE  
 Class (IMDG) : 2 - Gases





# PTG-4066

## Safety Data Sheet PTG-4066

Prepared in accordance with the model Work Health and Safety Regulations

Date of issue: 05/18/2015 Revision date: 09/25/2019 Version: 1.1

Limited quantities (IMDG) : None.  
 EmS-No. (1) : F-D  
 MFAG-No : 310  
 EmS-No. (2) : S-U

### Air transport

UN-No. (IATA) : 1011  
 Proper Shipping Name (IATA) : Butane  
 Class (IATA) : 2  
 Instruction "cargo" (ICAO) : 200  
 Instruction "passenger" (ICAO) : FORBIDDEN  
 Instruction "passenger" - Limited quantities (ICAO) : FORBIDDEN

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

No additional information available

### 15.2. International regulations

#### CANADA

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

Listed on the Canadian DSL (Domestic Substances List)

### EU-Regulations

#### 15.2.2. National regulations

No additional information available

### 15.3. US State regulations

#### PTG-4066(106-97-8)

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

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

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	

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

U.S. - Massachusetts - Right To Know List  
 U.S. - New Jersey - Right to Know Hazardous Substance 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.

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.

The opinions expressed herein are those of qualified experts within Praxair, 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 Praxair, Inc, it is the user's obligation to determine the conditions of safe use of the product.

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