SAFETY DATA SHEET

Pro Refrigerated Nitrogen

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830 AS AMENDED BY UK REACH REGULATIONS SI 2019/758

Date of issue: 09/03/2026
Version: 1.0

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name	Pro Refrigerated Nitrogen
Product storage	Stored and supplied in bulk cryogenic tanks
CAS No.	7727-37-9
EC No.	231-783-9
REACH Registration No.	This substance is exempted from Registration according to the provisions of Article 2(7)a and Annex IV of REACH

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

Identified Use(s)	Industrial and professional uses. Perform risk assessment prior to use. Cryogenic refrigerant for industrial and laboratory cooling processes. Freezing, chilling, and cryogenic preservation in food, research, and manufacturing applications. Inerting and blanketing gas (after vaporization). Purge and pressurizing gas (after vaporization). Carrier or calibration gas in laboratory and analytical systems (after vaporization). Process gas in industrial operations (after vaporization).
Uses advised against	Anything other than the above.

1.3 Details of the supplier of the safety data sheet

Company Identification	Pro Gases UK 28 Forth Street, Bootle, Liverpool, United Kingdom, L20 8JW
Telephone	0151 922 1118
E-mail (competent person)	info@progasesuk.com

1.4 Emergency telephone number

Emergency Phone No.	+44 (0) 127356 9048	Available 24/7
Language(s) spoken:	English	

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 The retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain

Press. Gas (Ref. Liq.); H281

2.2 Label elements

According to the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain

Product description: Pro Refrigerated Nitrogen

Hazard Pictogram(s)

Signal Word(s): WARNING

Hazard Statement(s): H281: Contains refrigerated gas; may cause cryogenic burns or injury.

	Precautionary Statement(s)	P282: Wear cold insulating gloves and either face shield or eye protection. P336+P315: Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention. P403: Store in a well-ventilated place.
2.3	**Other hazards**	Asphyxiant in high concentrations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

SUBSTANCE	CAS No.	EC No.	REACH Registration No.	%W/W
Nitrogen	7727-37-9	231-783-9	Exemptions apply	100

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Self-protection of the first aider

No action should be taken involving personal risk. Ensure adequate ventilation. In poorly ventilated areas or confined spaces, use an airline respirator or self-contained breathing apparatus. Danger of suffocation: High concentrations of gas can create an oxygen-deficient environment. Ensure that direct skin contact is avoided. Wear cold insulating gloves and either face shield or eye protection.

Inhalation

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Apply artificial respiration if breathing has ceased or shows signs of failing. In high concentration the gas may cause a suffocation. Victim may not be aware of asphyxiation. Keep warm and at rest.

Skin contact

IF ON SKIN: May cause frost-bite. Do not attempt to remove clothing that adheres to the skin due to freezing. Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.

Eye contact

IF IN EYES: May cause corneal damage. Immediately flush eyes for at least 15 minutes using lukewarm water. Do not rub affected area. Obtain prompt consultation, preferably from an ophthalmologist.

Ingestion

Oral exposure is considered to be not relevant.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Seek immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed

In high concentration the gas may cause a suffocation. Victim may not be aware of asphyxiation. Headaches and dizziness may occur, proceeding to fainting or unconsciousness; large doses may result in coma and death.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Treat cold burns as frostbite. Thaw frosted parts with lukewarm water. Do not rub affected area.

Notes to a physician: Asphyxiant in high concentrations. Treat cold burns as frostbite.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Not flammable. In case of fire use extinguishing media appropriate to surrounding conditions. Foam, CO2 or dry powder

Unsuitable extinguishing media

Do not use water jet. Direct water jet may spread the fire.

5.2 Special hazards arising from the substance or mixture

Not flammable. Does not support combustion.

Compressed gas

Contains gas under pressure; may explode if heated. Sealed containers may rupture explosively if hot. Do not pierce or burn, even after use.

5.3	**Advice for firefighters**	Fight fire with normal precautions from a reasonable distance. Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Keep containers cool by spraying with water if exposed to fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1	**Personal precautions, protective equipment and emergency procedures**	No action should be taken involving personal risk. Wear appropriate personal protective equipment, avoid direct contact. Wear cold insulating gloves and face shield with eye protection. (See Section: 8) Shut off source of leak if safe to do so. Eliminate all ignition sources if safe to do so. Ensure adequate ventilation. In case of inadequate ventilation wear respiratory protection. Contaminated clothing should be thoroughly cleaned.
6.2	**Environmental precautions**	Presents no hazard to the environment. Avoid release to the environment.
6.3	**Methods and material for containment and cleaning up**	Only trained and properly protected personnel must be involved in clean-up operations. Provided it is safe to do so, isolate the source of the leak. Ensure adequate ventilation. Isolate the area and allow gas to disperse.
	Small scale	Allow gas to disperse naturally in a well-ventilated area. Prevent access until ventilation has restored safe oxygen level. (>19.5% O_2).
	Large scale	Evacuate area. Fight fire remotely due to the risk of explosion. Notify police and fire brigade as soon as possible. Prevent access until ventilation has restored safe oxygen level. (>19.5% O_2).
6.4	**Reference to other sections**	See sections 8 and 13

SECTION 7: HANDLING AND STORAGE

7.1	**Precautions for safe handling**	Workers in the risky process/areas identified should be trained. The vapour is heavier than air; beware of pits and confined spaces. Avoid inhalation of high concentrations of gas. Ensure adequate ventilation. In case of inadequate ventilation wear respiratory protection. Wear cold insulating gloves and face shield with eye protection. (See Section: 8). Use only approved transfer equipment .Do not open valve until connected to equipment prepared for use. Do not eat, drink or smoke at the work place. Wash contaminated clothing before reuse. Wash hands before breaks and after work.
7.2	**Conditions for safe storage, including any incompatibilities**	Storage systems must be designed, installed, and maintained in accordance with PSSR 2000 and BGCA CP 36. For bulk storage, ensure compliance with EIGA Doc 115. Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources. Keep container in an upright position. Opened containers should be carefully resealed and stored in an upright position.
	storage temperature	Keep in a cool, well ventilated place. Protect from sunlight.
	Incompatible materials	Cryogenic liquids can cause embrittlement of some metals and alter the physical properties of other materials. No reaction with any common materials in dry or wet conditions.
7.3	**Specific end use(s)**	See Section: 1.2

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1	**Control parameters**	
8.1.1	**Occupational exposure limits**	Not established.
8.1.2	**Biological Limit Value**	Not established.
8.1.3	**PNECs and DNELs**	Not applicable
8.2	**Exposure controls**	
8.2.1	**Appropriate engineering controls**	Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources. Oxygen detectors should be used when asphyxiating gases may be released. Provide adequate ventilation, including appropriate local extraction, to ensure that the occupational exposure limit is not exceeded. Systems under pressure should be regularly checked for leakages. Preferably

use permanent leak tight connections (eg. welded pipes). Guarantee that the eye flushing systems and safety showers are located close to the working place.

8.2.2 Individual protection measures, such as personal protective equipment

Fuels are typically used, transferred and transported in closed systems. Keep good industrial hygiene. Wear cold insulating gloves and either face shield or eye protection. Do not eat, drink or smoke at the work place.

Eye / face protection

Wear full face shield (8-inch minimum) combined with splash-proof safety google with side protection (EN ISO 16321). Eyewash bottles should be available.

Skin protection

Hand protection:
Protective gloves should comply with EN ISO 21420 and EN 511.
Cryogenic-rated, insulated protective gloves specifically designed for handling liquefied gases should be worn. (Water Penetrability - Level 1)
Ensure the gloves are loose-fitting, thermally insulated, non-absorbent, and designed to allow rapid removal in the event of liquid contact. Ordinary work gloves, rubber gloves, or absorbent materials should not be used.

Body protection: Wear cryogenic-rated lab coat or apron conforming to EN ISO 13688 providing full coverage to torso and arms. Wear protective shoes. (EN ISO 20345)

Respiratory protection

In case of inadequate ventilation wear respiratory protection.
Recommended: Use self-contained breathing apparatus. Container device with compressed air (DIN EN 137)

Thermal hazards

May cause frostbite. If there is a risk of contact with the liquid, all protective equipment should be suitable for extremely low temperatures.

8.2.3 Environmental exposure controls

Presents no hazard to the environment. Avoid release to environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Colourless Refrigerated liquefied gas
Odour	Odourless
Odour threshold	Do not depend on odor to detect presence of gas.
pH	Not applicable
Melting point/freezing point	-210.01 °C
Initial boiling point and boiling range	-196 °C
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not flammable
Upper/lower flammability or explosive limits	Not applicable
Vapour pressure	No data available
Vapour Density (Air=1)	0.97
Relative density	0.8
Solubility(ies)	Water solubility (g/L): 0.061
Partition coefficient: n-octanol/water	Not established
Auto-ignition temperature	Not applicable
Decomposition temperature	Not established
Viscosity	Not applicable
Explosive properties	Not explosive
Oxidising properties	Not oxidising.

9.2 Other information

Molecular weight (g/mol)	28.014
Critical Temperature (°C)	-147°C

SECTION 10: STABILITY AND REACTIVITY

10.1	**Reactivity**	Stable under normal conditions.
10.2	**Chemical stability**	Chemically inert noble gas**.** Stable under normal conditions.
10.3	**Possibility of hazardous reactions**	No hazard expected under normal conditions of use.
10.4	**Conditions to avoid**	Keep away from heat and sources of ignition. Sealed containers may rupture explosively if hot. Use only in well-ventilated areas.
10.5	**Incompatible materials**	Cryogenic liquids can cause embrittlement of some metals and alter the physical properties of other materials. No reaction with any common materials in dry or wet conditions.
10.6	**Hazardous decomposition products**	Does not decompose under normal conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity - Ingestion	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: LD50 >2000 mg/kg bw
Acute toxicity - inhalation	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: LC50 > 20,000 ppm (Gases)
Acute toxicity - Skin contact	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: LD50 >2000 mg/kg bw
Skin corrosion/irritation	Based upon the available data, the classification criteria are not met.
Serious eye damage/irritation	Based upon the available data, the classification criteria are not met.
Respiratory or skin sensitisation	Based upon the available data, the classification criteria are not met.
Germ cell mutagenicity	Based upon the available data, the classification criteria are not met.
Carcinogenicity	Based upon the available data, the classification criteria are not met.
Reproductive toxicity	Based upon the available data, the classification criteria are not met.
STOT - single exposure	Based upon the available data, the classification criteria are not met.
STOT - repeated exposure	Based upon the available data, the classification criteria are not met.
Aspiration hazard	Based upon the available data, the classification criteria are not met.

11.2 Other information

In high concentration the gas may cause a suffocation. Victim may not be aware of asphyxiation. Headaches and dizziness may occur, proceeding to fainting or unconsciousness; large doses may result in coma and death.

SECTION 12: ECOLOGICAL INFORMATION

12.1	**Toxicity**	Based upon the available data, the classification criteria are not met. LC50 (Fish): > 100 mg/l/96h
12.2	**Persistence and degradability**	No data available
12.3	**Bioaccumulative potential**	No data available
12.4	**Mobility in soil**	No data available
12.5	**Results of PBT and vPvB assessment**	Not classified as PBT or vPvB.
12.6	**Other adverse effects**	None Known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1	**Waste treatment methods**	Disposal should be in accordance with local, state or national legislation.
	Waste classification according to Directive 2008/98/EC (Waste Framework Directive)	Not hazardous
13.2	Additional information	Refer to the EIGA code of practice (Doc.30 "Disposal of Gases", downloadable at http://www.eiga.org) for more guidance on suitable disposal methods. Dispose of container via supplier only. Discharge, treatment, or disposal may be subject to national, state, or local laws.

Waste code: 16 05 05: Gases in pressure containers other than those mentioned in 16 05 04.

SECTION 14: TRANSPORT INFORMATION

		ADR/RID	IMDG	IATA/ICAO
14.1	**UN number**	1977	1977	1977
14.2	**UN proper shipping name**	NITROGEN, REFRIGERATED LIQUID	NITROGEN, REFRIGERATED LIQUID	NITROGEN, REFRIGERATED LIQUID
14.3	**Transport hazard class(es)**	2	2	2
14.4	**Packing group**	None assigned	None assigned	None assigned
14.5	**Environmental hazards**	Not classified	Not classified as a Marine Pollutant.	Not classified
14.6	**Special precautions for user**	See Section: 2		
14.7	**Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable	Not applicable	Not applicable
14.8	**Additional information**			

Special Provisions	345, 346, 593
Limited Quantities	120 mL
Transport category	3
Tunnel restriction code	(C/E)

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1	**EU regulations**	
	Authorisations and/or restrictions on use	Not restricted
15.1.2	**National regulations**	
	UK Authorisations and/or restrictions on use	Not restricted
15.2	**Chemical Safety Assessment**	This substance is exempted from Registration according to the provisions of Article 2(7)a and Annex IV of REACH

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Not applicable – V1.0

References:
Existing Safety Data Sheet (SDS)
EU classification and labelling inventory for Nitrogen (CAS No. 7727-37-9).

Classification: This Safety Data Sheet was prepared in accordance with EC Regulation (EC) 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830. Compiled in accordance with REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

Legend

CAS	Chemical Abstracts Service
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DIN	Deutsches Institut für Normung e.V. (German Institute for Standardization)
DNEL	Derived no effect level
EC	European Community
EN	European Standard
EU	European Union
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO/IATA	ICAO: International Civil Aviation Organization / IATA: International Air Transport Association
IMDG	International Maritime Dangerous Goods
ISO	International Organization for Standardization
LC50	Lethal concentration at which 50% of the population is killed
LD50	Lethal dose at which 50% of the population is killed
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No Effect Concentration

REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
UK	United Kingdom
UN	United Nations
vPvB	Very persistent and very bioaccumulative

Hazard classification / Classification code:
Press. Gas (Ref. Liq.); Gases under pressure (Refrigerated liquefied gas)

Hazard Statement(s)
H281: Contains refrigerated gas; may cause cryogenic burns or injury.

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

For detailed guidance on safe handling, storage, and transport of cryogenic liquids in the UK, refer to industry standards such as:

1. BCGA Code of Practice 36 (CP 36): Cryogenic liquid storage at users' premises
2. BCGA Code of Practice 30 (CP 30): The Safe Use of Liquid Nitrogen Dewars
3. BCGA Guidance Note 11 (GN 11): Reduced Oxygen - The Hazards.
4. EIGA Doc 115: Storage of Cryogenic Air Gases at Users' Premises.

Training on cryogenic hazards and safe operation of cryogenic transfer systems is recommended for all personnel. Relevant standards include:

1. BCGA GN 23: Guidance on the safe filling of gas cylinders and cryogenic vessels.
2. EIGA Doc 24: Vacuum Insulated Vessels, Pressure and Level Indicators – Calibration and Testing.

Disclaimers

Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose. Pro Gases UK gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law. Pro Gases UK accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.