

Experis® ultra-high purity gases

Technical specification

Nitrogen



Air Products' Experis speciality gases range includes a number of UHP (ultra-high purity) Nitrogen products with specifications intended to deliver peace of mind whatever your application. Whether it is chemical analysis or process control, our experts are on hand to help you select the right gas for your requirements. The range includes gas with unrivalled specifications of critical impurities and a comprehensive range of package options.

Overview of grades and analytical verification

	Nitrogen Technical (5.0)	Nitrogen Premier (5.2)	Nitrogen Pharma	Nitrogen BIP® (6.0)	Nitrogen BIP® ECD (6.0)	Nitrogen BIP® Plus (6.8)
Purity	99.999%	99.9992%	99.9992%	99.9999%	99.9999%	99.99998%
Analytical verification*	N/A	Batch	EP GMP Part II	Batch	Batch	Individual
Oxygen (ppm)	<5	<3	<3	<0.01	<0.01	<0.01
Hydrogen (ppm)	-	-	-	<0.2	<0.2	<0.05
CO+CO ₂ (ppm)	-	-	<1+1	<0.5	<0.5	<0.05
Water (ppm)	<3	<2	<2	<0.02	<0.02	<0.02
THC (ppm)	-	<0.5	-	<0.1	<0.1	<0.05
CFC (ppm)	-	-	-	-	<0.001	-
NO _x (ppm)	-	-	-	<0.1	-	<0.02
SO ₂ (ppm)	-	-	-	-	-	<0.02

Physical properties

Molecular weight	28.01
State of product in cylinder	Gas
Boiling point at 1 atm (°C)	-195.8
Liquid density at boiling point (g/ml)	0.808
Gas density at 20°C (g/l)	1.168
Vapour pressure at 20°C (bar g)	n/a
Flammability limits in air (vol % in air)	Inert

*Explanation of terminology

Batch – Air Products carries out statistical batch analysis on cylinders from the same batch to verify conformance to the advertised specification.

Individual – Each cylinder is individually analysed to verify conformance to the advertised specification.

EP, GMP part II – Pharma grade gases are delivered with hard copy certificates of analysis as standard and are fully compliant with the monographs of the European, US and Japanese pharmacopoeias.

All work is carried out within the scope of our ISO:9001 2008 accredited Quality Management System. All analytical results are retained for quality control and auditing purposes. The full product specification is shown on the cylinder label together with a unique lot number delivering traceability to the filling location, raw material batch, and quality control records.

Benefits of Air Products' BIP® technology

Elimination of external inline purifiers – No initial purchase costs, less analyser downtime, no maintenance costs, no purifier disposal issues, no purifier saturation and a more accurate analysis. No external inline purifiers results in a more environmentally friendly solution for delivering ultra-high purity gas.

More useable gas per cylinder – Reduced gas costs, and less cylinder changeovers.

Consistent gas supply – No 'rogue' cylinders, built in purifier ensures gas purity is as stated, every time.

Nitrogen BIP Plus features even higher overall purity, based on improved specifications of other often critical impurities such as total hydrocarbons, CO, CO₂, and H₂.

Certificates of conformity are available on request for all grades of ultra-high purity Nitrogen.

Ideal for analytical applications

BIP technology removes oxygen and moisture from ultra-high purity gas making it ideal for any application where these are critical impurities.

Benefits include: **< 10 parts per billion H₂O, and < 20 parts per billion O₂**

Resulting in:

- **Reduced GC column bleed and longer column life** – Resulting in lower expenditure on column replacement, less analyser down time, and lower maintenance costs.
- **Reduced baseline noise, and elimination of extra peaks** – Providing a more accurate analysis, greater sensitivity, and lower limits of detection.
- **Perfect detector gas for many types of detector** – Also available is a low THC specification and a unique 'ECD' grade for electron capture detectors.

Nitrogen specifications

Product	Product code	Size	Valve	Pressure (bar g)	Contents (m ³)
Nitrogen Premier 5.2 (D02)	26050	x2A	BS3	200	0.4
Nitrogen Premier 5.2 (D02)	401673	x7A	BS3	200	1.3
Nitrogen Premier 5.2 (D02)	26052	x47s	BS3	200	9
Nitrogen Pharma (D02)	133996	x47s	BS3	200	9
Nitrogen Pharma (D09)	143678	12x50s	BS3	200	108
Nitrogen BIP 6.0 (D02)	53960	x10s	BS3	200	2
Nitrogen BIP 6.0 (D02)	25883	x47s	BS3	200	9
Nitrogen BIP 6.0 (D09)	28691	12x50s	BS3	200	108
Nitrogen BIP ECD 6.0 (D02)	25917	x47s	BS3	200	9
Nitrogen BIP Plus 6.8 (D02)	25884	x47s	BS3	200	9
Nitrogen BIP Plus 6.8 (D09)	56757	12x50s	BS3	200	108

Other UHP gases available from the speciality gases product portfolio include: Acetylene, Argon, Carbon Dioxide, Helium, Hydrogen, Oxygen and Synthetic Air.

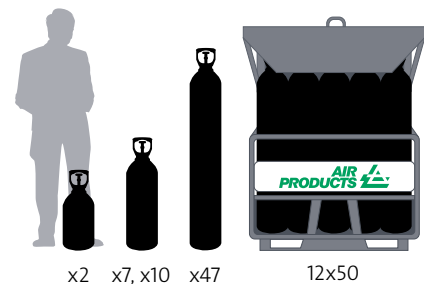
For further information on these gases please see individual data sheets.

Cylinder and pack specifications

Size	Pressure (bar g)	Height (mm)	Diameter (mm)	Width (mm)	Length (mm)	Empty weight (kg)	Full weight (kg)
x2A	200	510	100	-	-	3	4
x7A	200	730	152	-	-	10	12
x10s	200	655	176	-	-	20	22
x47s	200	1525	230	-	-	67	77
12x50s	200	1900	-	965	735	1026	1151

Dimensions and weights are approximate, actual cylinder values may differ.

Nitrogen is available in the following cylinder size options:



Recommended control equipment*

Type	Model	Product code
Pressure regulator	Two stage, brass, high purity, low flowrates	R300
Pressure regulator	Single stage, brass, high purity	R400
Pressure regulator	Two stage, brass, high purity	R500
Manifold	Single wing, high purity	M1000
Manifold	Two wing, manual changeover, high purity	M2000
Manifold	Two wing, automatic changeover, high purity	M3000

*Please refer to the **Equipment Centre Selection Tool** for full equipment information.

For more information please contact us at:

Air Products PLC

T 0800 389 0202

E apukinfo@airproducts.com
airproducts.co.uk

Air Products Ireland Ltd.

T 1800 99 50 29

E ieinfo@airproducts.com
airproducts.ie



tell me more
airproducts.co.uk
airproducts.ie