

Experis® ultra-high purity gases

Technical specification

Helium



Air Products' Experis speciality gases range includes a number of UHP (ultra-high purity) Helium 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

	Helium Technical (4.6)	Helium Premier (5.2)	Helium BIP® (6.0)	Helium BIP® ECD (6.0)	Helium BIP® Plus (6.7)
Purity	99.996%	99.9992%	99.9999%	99.9999%	99.99997%
Analytical verification*	N/A	Batch	Batch	Batch	Individual
Oxygen (ppm)	<3	<1	<0.01	<0.01	<0.01
Nitrogen (ppm)	<20	<5	<1	<1	<0.1
CO+CO ₂ (ppm)	-	-	<0.1	<0.1	<0.05
Water (ppm)	<3	<2	<0.02	<0.02	<0.02
THC (ppm)	-	<0.5	<0.1	<0.1	<0.05
CFC (ppm)	-	-	-	<0.001	-
Hydrogen (ppm)	-	-	-	-	<0.1

Physical properties

Molecular weight	4.0
State of product in cylinder	Gas
Boiling point at 1 atm (°C)	-268.9
Liquid density at boiling point (g/ml)	0.124
Gas density at 20°C (g/l)	0.169
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.

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 that stated, every time.

Helium BIP Plus features even higher overall purity, based on improved specifications of other often critical impurities such as total hydrocarbons, CO, CO₂, N₂, and H₂.

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

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.

Helium specifications

Product	Product code	Size	Valve	Pressure (bar g)	Contents (m³)
Helium Premier 5.2 (D02)	27367	x47s	BS3	200	8
Helium Premier 5.2 (D02)	27369	11x47s	BS3	200	89
Helium BIP 6.0 (D02)	53961	x10s	BS3	200	2
Helium BIP 6.0 (D02)	27350	x47s	BS3	200	8
Helium BIP 6.0 (D09)	27357	12x50s	BS3	200	103
Helium BIP 6.0 (D09)	154415	18x50s	BS3	300	154
Helium BIP ECD 6.0 (D02)	25918	x47s	BS3	200	8
Helium BIP Plus 6.7 (D02)	25938	x47s	BS3	200	8
Helium BIP Plus 6.7 (D09)	18318	12x50s	BS3	200	103
Helium BIP Plus 6.7 (D09)	48031	18x50s	BS3	300	154

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

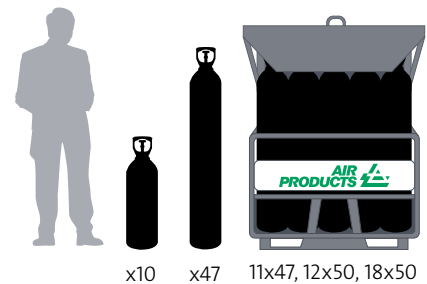
For further information on these gases please see individual data sheets.

Cylinder and pack specifications

Size	Pressure (bar g)	Height (mm)	Diameter (mm)	Width (mm)	Length (mm)	Empty weight (kg)	Full weight (kg)
x10s	200	655	176	-	-	20	23
x47s	200	1525	230	-	-	67	83
11x47s	200	1963	-	680	1000	1046	1217
12x50s	200	1900	-	965	735	1026	1225
18x50s	300	1900	-	862	1190	1688	1714

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

Helium is available in the following cylinder size options:



Recommended control equipment*

Type	Model	Product code
Pressure regulator	Two stage, brass, high purity, low flow rates	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