Experis® ultra-high purity gases Technical specification

Argon

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

	Argon Technical	Argon Premier (5.2)	Argon BIP® (6.0)	Argon BIP® Plus (6.6)
Purity	99.998%	99.9992%	99.9999%	99.99996%
Analytical verification*	N/A	Batch	Batch	Individual
Oxygen (ppm)	<3	<1.5	<0.01	<0.01
Nitrogen (ppm)	-	<4	<1	<0.3
$CO+CO_2$ (ppm)	-	-	<0.1	<0.05
Water (ppm)	<1	<2	<0.02	<0.02
THC (ppm)	-	<0.1	<0.1	<0.05

Physical properties

Molecular weight	**39.95**
State of product in cylinder	**Gas**
Boiling point at 1 atm (°C)	**-185.9**
Liquid density at boiling point (g/ml)	**1.39**
Gas density at 20°C (g/l)	**1.662**
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 meaning no initial purchase costs, less analyser downtime, no maintenance costs, no purifier disposal issues, no purifier saturation, more accurate analysis, and 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.

Argon BIP Plus features even higher overall purity based on improved specifications of other often critical impurities such as total hydrocarbons, CO, CO_2 and N_2.

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

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 H_2O, and < 20 parts per billion O_2**

For ICP:

- The low level of THC impurities in Argon BIP result in less shielding effects on signals for some metals. It also means less carbon deposits on mirrors - another cause of reduced signal.
- Ideal for instruments with 'cooled chip' technology which can be damaged by H_2O contamination.
- Perfect for **ICP-MS** based on its ultra-low impurities of H_2O, O_2, THCs and N_2 which can all have interfering effects. A 0.5 micron particle filter within the valve eliminates interfering particles that contain metals.

Argon specifications

Product	Product code	Size	Valve	Pressure (bar g)	Contents (m^3)
Argon **Premier** 5.2 (D02)	26032	x47s	BS3	200	10
Argon **Premier** 5.2 (D02)	25928	11x47s	BS3	200	104
Argon **BIP** 6.0 (D02)	53959	x10s	BS3	200	2
Argon **BIP** 6.0 (D02)	25919	x47s	BS3	200	10
Argon **BIP** 6.0 (D09)	36045	12x50s	BS3	200	120
Argon **BIP Plus** 6.6 (D02)	18854	x47s	BS3	200	10

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

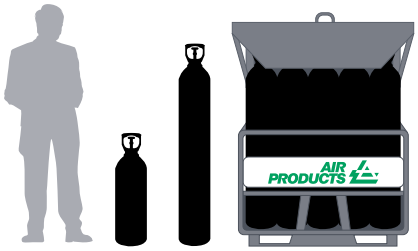
For further information on these gases please see individual data sheets.

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

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

Argon is available in the following cylinder size options:



x10 x47 11x47, 12x50

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.

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