

# ARGON (Ar)



## Gas Description

Argon is an odourless, tasteless, non-flammable, inert non-toxic, asphyxiant with a gas density of STP 0.167 kg/m<sup>3</sup>. The atmosphere contains about 9.0% Argon. A neutral and colourless gas like nitrogen, it does not exist in nature other than in air. It cannot sustain life, but is highly used in certain industrial applications due to its high level of chemical inertness and relative ease with which it can be produced.

### Typical applications :

Used in emission spectrometry (ICP)  
 Used pure or mixed with methane as quenching gas (spark spectrometers, electron capture detectors)  
 Zero, diluting and carrier gas for analysis  
 Filling gas for Incandescent lamp industry  
 Purging and shielding gas for welding  
 Inerting gas in metallurgy semi-conductor industry  
 Used with hydrocarbon in plasma jet torches

### Transport Regulations :

UN Number : 1006  
 Shipping Name : ARGON, COMPRESSED  
 Class : 2.2 : Non-Flammable Gas / Non-Toxic  
 CAS Number : 7440-37-1  
 Hazchem : 2[T]

[Click here](#) for MSDS  
[Click here](#) for more information

## Physical Properties

Chemical symbol : Ar  
 Molecular weight : 39.95  
 Specific gravity (Air=1) : 1.38  
 Specific volume (m<sup>3</sup>/kg) : 0.60  
 Critical temperature : -123°C  
 Boiling point : -185.9°C

Melting Point : -189.4°C  
 Critical pressure (bar) : 48.66  
 Major hazards : High Pressure, Suffocation  
 Toxicity : Simple Asphyxiant  
 Flammability Range : Non-Flammable  
 Odour : None

[Click here](#) for more information

## Application

### INDUSTRY

### APPLICATION

Laboratories and Analysis

Used pure and in mixtures for industrial and hospital analysis and quality control.

Machine and Metal Construction

Used for the protection of welds against oxidation & the reduction of welding emissions.

Other Applications

Used for the inflation of car air bags.

Semiconductors

Used ultra-pure to protect against impurities.

Iron and Steel

Stainless steel production in AOD (Argon Oxygen Carbonisation) process.

[Click here](#) for more information

## Typical Specification Comparison Table

Grade	Purity	Typical Impurities (ppm molar)						
		H <sub>2</sub> O	O <sub>2</sub>	THC	H <sub>2</sub>	CO	CO <sub>2</sub>	N <sub>2</sub>
<b>Alphagaz 2</b>	99.9995%	<0.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1
<b>Alphagaz 1</b>	99.999%	<3	<2	<0.5				
<b>Alphagaz 1000</b>	99.999%	<3	<2	<0.5				
<b>Alphagaz HP</b>	99.995%	<3	<5					

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## Argon : **Alphagaz 2**

Standard Purity 99.9995% excl N<sub>2</sub>

<u>Gas</u>		<u>Cylinder information</u>			
Typical impurities (ppm molar)		Cylinder Size	Valve Connection	Pressure (kPa)	Contents (m <sup>3</sup> )
H <sub>2</sub> O	< 0.5ppm	B 50	NF B	20,000	10.5
O <sub>2</sub>	< 0.5ppm				
THC	< 0.1ppm				
H <sub>2</sub>	< 0.1ppm				
CO	< 0.1ppm				
CO <sub>2</sub>	< 0.1ppm				
N <sub>2</sub>	< 1.0ppm				
<u>Recommended Equipment</u>					
Dual stage chrome plated brass body regulator with a stainless steel diaphragm. For further information <a href="#">Contact</a> the specialty gases representative in your region.					

## Argon : **Alphagaz 1**

Standard Purity 99.999% excl N<sub>2</sub>

<u>Gas</u>		<u>Cylinder information</u>			
Typical impurities (ppm molar)		Cylinder Size	Valve Connection	Pressure (kPa)	Contents (m <sup>3</sup> )
H <sub>2</sub> O	< 3ppm	G	AS 2473 T 10	16,600	10.3
O <sub>2</sub>	< 2ppm				
THC	< 0.5ppm				
<u>Recommended Equipment</u>					
Dual stage chrome plated brass body regulator with a stainless steel diaphragm. For further information <a href="#">Contact</a> the specialty gases representative in your region.					

## Argon : **Alphagaz HP**

Standard Purity 99.995% excl N<sub>2</sub>

<u>Gas</u>		<u>Cylinder information</u>			
Typical impurities (ppm molar)		Cylinder Size	Valve Connection	Pressure (kPa)	Contents (m <sup>3</sup> )
H <sub>2</sub> O	< 5ppm	G	AS 2473 T 10	16,600	8.3
O <sub>2</sub>	< 5ppm				
<u>Recommended Equipment</u>					
Dual stage chrome plated brass body regulator with a stainless steel diaphragm. For further information <a href="#">Contact</a> the specialty gases representative in your region.					