

HELIUM (He)

Synonyms : Helium 4



Gas Description

Helium is an extremely light gas and is therefore very volatile. It is colourless, odourless, non-flammable and completely inert. It cannot sustain life and has a gas density of STP 0.169 kg/m³. Helium is abundant in the Sun's atmosphere (hence its name from helios), and is found at trace level in the Earth's atmosphere. Helium can be supplied in cylinders or liquified gas vessel.

Typical applications :

Shielding gas for welding
Purging, pressurization and leak detection
Carrier gas in chromatography
Mixed with hydrocarbons as quenching gas in nuclear counters
Mixed with oxygen for diving or for patients with pulmonary edema
Balloon filling

Transport Regulations :

UN Number : 1046
Shipping Name : HELIUM, COMPRESSED
Class : 2.2 : Non-Flammable Gas / Non-Toxic
CAS Number : 7440-59-7
Hazchem : 2[T]

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

Physical Properties

Chemical symbol : He
Molecular weight : 4.003
Specific gravity (Air=1) : 0.138
Specific volume (m³/kg) : 6.00
Critical temperature : -268°C
Boiling point : -269°C

Melting Point : -272.2°C
Critical pressure (bar) : 2.29
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

The most commonly gas used as carrier in gas chromatography.

Space and Aeronautics

The oxygen tank of the Ariane 5 launch vehicle is pressureized by a liquid helium subsystem.

Other

Balloon inflation, leak detection.
Liquid Helium is used for cooling of superconducting magnets.
Used as a blanket gas to exclude air from certain fabrication processes (optic fibres).
Helium is used as a heat transfer material.

[Click here](#) for more information

Typical Specification Comparison Table

Grade	Purity	Typical Impurities (ppm molar)					
		H ₂ O	O ₂	THC	H ₂	CO	CO ₂
Alphagaz 2	99.9995%	<0.5	<0.5	<0.2	<0.1	<0.5	<0.5
Alphagaz 1	99.999%	<3	<2	<0.5			
Alphagaz HP	99.995%	<10	<5	<1	<50		

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Helium : **Alphagaz 2**

Min Purity 99.9995%

<u>Gas</u>		<u>Cylinder information</u>			
Typical impurities (ppm molar)		Cylinder Size	Valve Connection	Pressure (kPa)	Contents (m ³)
H ₂ O	< 0.5ppm	G	AS 2473 T 10	20,000	8.8
O ₂	< 0.5ppm				
THC	< 0.2ppm				
H ₂	< 0.1ppm				
CO	< 0.5ppm				
CO ₂	< 0.5ppm				

Recommended Equipment

Dual stage chrome plated brass body regulator with a stainless steel diaphragm.
For further information [Contact](#) the specialty gases representative in your region.

Helium : **Alphagaz 1**

Min Purity 99.999%

<u>Gas</u>		<u>Cylinder information</u>			
Typical impurities (ppm molar)		Cylinder Size	Valve Connection	Pressure (kPa)	Contents (m ³)
H ₂ O	< 3ppm	G	AS 2473 T 10	20,000	8.8
O ₂	< 2ppm				
THC	< 0.5ppm				

Recommended Equipment

Dual stage chrome plated brass body regulator with a stainless steel diaphragm.
For further information [Contact](#) the specialty gases representative in your region.

Helium : **Alphagaz HP**

Min Purity 99.995%

<u>Gas</u>		<u>Cylinder information</u>			
Typical impurities (ppm molar)		Cylinder Size	Valve Connection	Pressure (kPa)	Contents (m ³)
H ₂ O	< 20ppm	G	AS 2473 T 10	16,600	7.2
O ₂	< 5ppm				
THC	< 50ppm				
H ₂	< 1ppm				

Recommended Equipment

Dual stage chrome plated brass body regulator with a stainless steel diaphragm.
For further information [Contact](#) the specialty gases representative in your region.