



Argon (Ar, R-740)

CAS: 7440-37-1 UN: 1006

Argon Baseline 5.0				H2O 3
Purity (%)	99,999			
Impurities (ppm)	O ₂ 2	N ₂ 5	CnHm 0,5	
Typical Filling Pressure	20°C: 200 bar(a)			



Characteristics

- Colourless and odourless gas
- Non-reactive
- Inert.

Health Risks

- Asphyxiant at high concentrations.

Transport

ADR Class 2, 1 A



DOT Class 2.2



Product Description	Size (kg)	Grade	Material Number	Valve Connection	Recommended Regulator
Argon Baseline 5.0	17,4	Instrument Grade	512203-SE-C	5/8" BSP RH Int	W019110 or W019210
Argon Baseline 5.0	3,5	Instrument Grade	512203-IE-C	5/8" BSP RH Int	W019110 or W019210
Argon Baseline MCP	15 x 17,4	Instrument Grade	512203-ME-C	5/8" BSP RH Int	W019110 or W019210
Argon Baseline PCC	200	Instrument Grade	512203-PA-C	5/8" BSP RH Int	W019110 or W019210
Argon HP PCC	200	High Purity	512102-PA-N	5/8" BSP RH Int	W019110 or W019210
Argon PCC Uncertified	200	High Purity	512101-PA-N	5/8" BSP RH Int	W019110 or W019210

Physical Data

Molecular Weight	39,948
Boiling Point at 1,013 bar [°C]	-185,87
Density at 1,013 bar, 20°C [kg/m ³]	1,662
Vapour Pressure at 0°C [bar]	-
Vapour Pressure at 20°C [bar]	-
Flammability Range in Air [% volume]	Non-combustible
Specific Volume at 1,013 bar, 20°C [m ³ /kg]	0,602

Material Compatibility

Aluminium	Brass	Butyl	Carbon	Copper	Neoprene	Nylon	Polythene	PVC	Stainless	Teflon	Viton
●	●	●	●	●	●	●	●	●	●	●	●

Legend: ● Good | Fair ■ Avoid

Source

- The most common source of argon is an air separation plant. Air contains approx. 0,93% (vol.) argon. A crude argon stream containing up to 5% oxygen is removed from the main air separation column via a secondary ('side-arm') column. The crude argon is then further purified to produce the various commercial grades required.

- Argon is used, often in combination with nitrogen and/or carbon dioxide, as a clean fire extinguishing gas, since Chemicals the inert properties do not damage any materials extinguished.

Applications

- Argon is one of the most common carrier gases in gas chromatography. Argon is used as a carrier gas in sputtering, plasma etching and ion implantations, and as a blanket atmosphere in crystal growth.
- Argon is also the choice gas for ICP spectroscopy (Inductively Coupled Plasma spectroscopy).
- Argon is used in atomic absorption spectrometry as a blanket gas in the graphite furnace.
- One of the most common applications of argon, either pure or in various mixtures, is as a shielding gas for arc welding.
- Many Geiger-counting tubes contain argon or argon mixed with organic vapours or other gases, for example 10% methane in argon.
- Argon is used in blends with, for example, fluorine and helium in excimer lasers.
- Argon is one of the principal gases used for filling incandescent (filament) lamps, generally in a mixture with nitrogen, krypton or neon, for phosphorescent tubes in mixtures with neon.
- Argon is used as an insulation gas in high-efficiency multi-pane windows to improve thermal insulation.
- The argon-oxygen decarburising (AOD) process is the most common method of refining stainless steel and uses large quantities of both gases supplied either in liquid form or via pipeline from an on-site plant.
- Argon is used in the iron and steel industry to prevent oxidation of molten metals and alloys as well as for degassing and desulphurisation of molten steel and iron baths.
- The pharmaceutical industry uses argon to displace oxygen in the top of intravenous drug containers, extending product shelf-life.
- Argon is used, often in a mixture with hydrogen, as a protective atmosphere for the heat treatment of certain metals, particularly those which are susceptible to nitriding when treated in a nitrogen-based atmosphere. This includes stainless steels and many different specialised and therefore small-scale applications.
- Argon is used for wine preservation to eliminate air by the heavier argon, to prevent oxidation and extend the product quality for opened bottles and barrels.
- Liquid argon is used in cryosurgery, e.g. cryoablation to destroy cancer cells.
- Argon, R-740, is used in gas mixtures for non-CFC ultra-low temperature refrigeration applications.
- Argon is, sometimes in combination with nitrogen, used to inflate airbags.