

SEMI C3.42-90

STANDARD FOR ARGON (Ar), VLSI GRADE, BULK (PROVISIONAL)

This Standard was technically approved by the Gases Global Technical Committee. This edition was approved for publication by the global Audits and Reviews Subcommittee. Originally published in 1990.

NOTICE: This Document is no longer supported by the global technical committee. It has been replaced by SEMI C57.

1 Description

1.1 Argon is the most abundant member of the noble gas family. It is monatomic and is characterized by its extreme chemical inactivity. Argon is a colorless, odorless and tasteless gas which is somewhat soluble in water.

2 Specifications

2.1 PURITY: 99.99990%

<i>Impurities</i>	<i>Maximum Acceptable Level (ppb)^{#1}</i>
Carbon Dioxide (CO ₂)	50
Carbon Monoxide (CO)	50
Hydrogen (H ₂)	100
Nitrogen (N ₂)	500
Oxygen (O ₂)	50
Particles	^{#2}
Total Hydrocarbons (as CH ₄)	100
Water (H ₂ O) (v/v)	100
TOTAL IMPURITIES	950

^{#1} An analysis of significant figures has not been considered. The number of significant figures will be based on analytical accuracy and the precision of the provided procedure.

^{#2} To be determined between supplier and user.

3 Physical Constants (for information only)

	<i>Metric Units</i>	<i>US Units</i>
Molecular weight	39.444	39.444
Boiling point at 1 atm	−185.9°C	−302.6°F
Density of gas at 21.1°C (70°F) and 1 atm	1.656 kg/m ³	0.1034 lb/ft ³
Specific gravity of gas at 21.1°C and 1 atm (air = 1)	1.38	1.38
Density of liquid at boiling point	1393 kg/m ³	86.98 lb/ft ³

NOTE 1: A purifier is allowed to be used to meet this specification.



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