

# Arsine



Grade	ULSI 5N5	ULSI 6N	ULTIMA 6N5	ULTIMA II 6N5
Purity, %	99.9995	99.9999	99.99995	99.99995
Water	≤2.0 ppmv	≤350 ppbv	≤100 ppbv	≤100 ppbv
Nitrogen	≤2.0 ppmv	≤250 ppbv	≤50 ppbv	≤50 ppbv
Oxygen	≤1.0 ppmv	≤40 ppbv	≤20 ppbv	≤20 ppbv
Carbon Dioxide	≤0.5 ppmv	≤40 ppbv	≤10 ppbv	≤10 ppbv
Carbon Monoxide	≤0.1 ppmv	≤10 ppbv	≤10 ppbv	≤10 ppbv
Methane	≤0.5 ppmv			
C <sub>1</sub> - C <sub>2</sub>		≤500 ppbv	≤100 ppbv	≤50 ppbv
C <sub>3</sub> - C <sub>5</sub>				≤50 ppbv
Argon			≤50 ppbv	≤20 ppbv
Germane		≤50 ppbv	≤50 ppbv	≤10 ppbv
Hydrogen Sulfide		≤50 ppbv	≤50 ppbv	≤50 ppbv
Silane			≤50 ppbv	≤10 ppbv
Phosphine				≤25 ppbv
Carbonyl Sulfide				≤25 ppbv
Nitrous Oxide				≤20 ppbv

• All cylinders are individually analyzed

Hall Mobility		> 120,000 (cm <sup>2</sup> /Vs)	> 160,000 (cm <sup>2</sup> /Vs)	> 180,000 (cm <sup>2</sup> /Vs)
Carrier Concentration		< 5x10 <sup>14</sup> (cm <sup>-3</sup> )	< 1x10 <sup>14</sup> (cm <sup>-3</sup> )	< 5x10 <sup>13</sup> (cm <sup>-3</sup> )

• Performance data above is typical for 10um GaAs/GaAs with growth conditions of V/III ratio: 150 and temperature of 650C. 77K measurements  
 • Pneumatic valves and DIN and JIS connections are available upon request.

CYLINDER	Internal Volume	Liters	47.5	29.5
	<b>Cylinder Sizes &gt;&gt;</b>		<b>QZ</b>	<b>QH*</b>
	Content	kg	29/18.2*	12.7*
		lbs	60/40*	28*
Change Point**	lbs	5.5	3.4	

\* Fills available for ULTIMA Grade only

\*\*Recommended Cylinder Change Point at NTP, based on Phase Break, or the amount of product left in the cylinder when the liquid phase has completely evaporated and only gaseous product is left (estimate based on ideal gas behavior).

SHIP	DOT Shipping Name	Arsine	UN Number	UN 2188	Shipped as
	DOT Classification	2.3 (2.1) Poison Gas	ECCN #	3C004	Liquefied Gas
	DOT Label	POISON GAS / INHALATION HAZARD, FLAMMABLE GAS	Harmonized #	2850.00.0000	

TECHNICAL DATA	Cylinder Pressure @NTP	204.6 psig 15.4 atm	Vapor Pressure	Temp, °C	0.0	15.5	21.0	32.2	43.3
	Specific Volume @NTP	0.31 m <sup>3</sup> /kg 5.0 ft <sup>3</sup> /lb		Press, psig	116.2	178.2	204.6	265.1	336.7
	CAS No	7784-42-1		Temp, °F	32	60	70	90	110
	CGA/DISS/JIS	350/632/W22-14L	RFO Data	Size, mm	0.254	0.3556	0.508	0.762	1.016
	Molecular Weight	77.95 g/mol		Size, inches	0.010	0.014	0.020	0.030	0.040
	TLV	0.05 ppmv		Flow, sccm	5326	10168	20981	46805	80698
	LFL in Air	4.5%		Flow, scf/h	11.3	21.5	44.5	99.2	171.0

NTP = 21°C or 70°F and 101.3 kPa or 1 atm

Cylinder	Treatment	Nominal Diameter (OD)xHeight*		Material of Construction	
		cm	Inches	Cylinder	Valve
QZ	ULTRA-LINE II®	25x137/141/149	10x54/55.5/59	Aluminum	SS
QH	ULTRA-LINE®	20x122/126/135	8x48/49.5/53	Aluminum	SS

\*Height is reported as the distance from the bottom of the cylinder to the cylinder neck/ center of the valve outlet/ top of the handwheel

CS: Carbon Steel SS: Stainless Steel

