

# Ammonia



Grade	Semicon 5N	ULSI 5N5	ULTIMA 6N4
Purity, %	99.999	99.9995	99.99994
Oxygen		≤0.5 ppmv	(+Ar): ≤100 ppbv
Nitrogen	≤5 ppmv	≤1.5 ppmv	
Carbon Dioxide		≤0.4 ppmv	≤100 ppbv
Carbon Monoxide	≤2 ppmv	≤0.1 ppmv	≤50 ppbv
Hydrogen			≤100 ppbv
Methane	≤2 ppmv	≤0.1 ppmv	≤50 ppbv
Water	(+O <sub>2</sub> ): 5 ppmv	≤2.0 ppmv	≤200 ppbv*

- \*Water is measured by sampling the liquid phase, as this method has been found to produce more repeatable data. Using the partition coefficient of 200, a reported liquid phase value of 200 ppbv corresponds to 1 ppbv in the vapor phase of a full cylinder.
- A lot analysis is provided for each order – Individual analysis is provided for ULTIMA grade and available upon request for other grades.
  - Pneumatic valves, JIS connections available upon request

CYLINDER	Internal Volume	Liters	49.0	43.8	439
	<b>Cylinder Sizes &gt;&gt;</b>		<b>QK</b>	<b>QB/QF</b>	<b>QI</b>
	Content	kg	25.0	22.73	227.3
		lbs	55.0	50.0	500
Change Point**	lbs	0.74	0.67	6.67	

\*\*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	Ammonia, Anhydrous	UN Number	UN 1005	Shipped as
	DOT Classification	2.2 (Non-Flammable Gas)	ECCN#	1C980	Liquefied Gas
	DOT Label	NON-FLAMMABLE GAS	Harmonized #	2814.10.0000	

TECHNICAL DATA	Cylinder Pressure @NTP	113.9 psig 9.0 atm
	Specific Volume @NTP	1.41 m <sup>3</sup> /kg 22.6 ft <sup>3</sup> /lb
	CAS No	7664-41-7
	CGA/DISS/JIS	660/720/W22-14R
	Molecular Weight	17.03 g/mol
	TLV	25 ppm
	LFL-UFL in Air	16 - 25 %

Vapor Pressure	Temp, °C	0.0	15.5	21.0	32.2	43.3
	Press, psig	47.6	92.8	113.9	165.7	232.0
	Temp, °F	32	60	70	90	110

RFO Data	Size, mm	0.254	0.3556	0.508	0.762	1.016
	Size, inches	0.010	0.014	0.020	0.030	0.040
	Flow, sccm	6634	12665	26134	58298	100514
	Flow, scf/h	14.0	26.8	55.4	123.5	213.0

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
QK	ULTRA-LINE®	25x140/144/153	10x55/56.5/60	CS	SS
QB	ULTRA-LINE II®	23x130/134/143	9x51/52.5/56	CS	SS
QF	ULTRA-LINE®	23x130/134/143	9x51/52.5/56	CS	SS
QI	ULTRA-LINE®	61x211	24x83	CS	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  
 ASB: Aluminum Silicon Bronze CS: Carbon Steel SS: Stainless Steel



**MATHESON**  
ask. . .The Gas Professionals™