

# Hydrogen Bromide

# HBr

Grade	ULSI 5N	Gigabit 5N5				
Purity, %	99.999	99.9995	Metals, ppbw			
Oxygen	≤1.0 ppmv	≤1.0 ppmv	Al	≤5	Mg	≤1
Nitrogen	≤3.0 ppmv	≤1.0 ppmv	Ca	≤5	Na	≤5
Carbon Dioxide	≤3.0 ppmv	≤1.0 ppmv	Cr	≤5	Ni	≤10
Carbon Monoxide	≤0.5 ppmv	≤0.5 ppmv	Cu	≤1	Pb	≤1
Methane	≤1.5 ppmv	≤1.0 ppmv	Fe	≤10	Zn	≤1
Water	≤4.0 ppmv	≤1.0 ppmv	Mn	≤1	Co	≤1
Hydrogen Chloride*		≤50 ppmv				
Hydrogen*		≤50 ppmv				

• A lot analysis is provided for each order. – Individual analysis is also available upon request.

• Pneumatic valves, JIS connections available upon request.

\*Not included in Assay calculation

CYLINDER	Internal Volume	Liters	43.8
	<b>Cylinder Sizes &gt;&gt;</b>		<b>QN</b>
	Content	kg	54.55
		lbs	130
	Change Point*	lbs	11.0

\*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	Hydrogen Bromide, Anhydrous	UN Number	UN 1048	Shipped as
	DOT Classification	2.3 Poison Gas Hazard Zone C (Gas Poisonous by Inhalation)	ECCN #	EAR99	Liquefied Gas
	DOT Label	POISON GAS INHALATION HAZARD CORROSIVE GAS	Harmonized #	2811.19.0000	

TECHNICAL DATA	Cylinder Pressure	320 psig
	@NTP	23.5 atm
	Specific Volume	0.3 m <sup>3</sup> /kg
	@NTP	4.8 ft <sup>3</sup> /lb
	CAS No	10035-10-6
	CGA/DISS/JIS	330/634/W22-14L
	Molecular Weight	80.91
TLV	3 ppm	

Vapor Pressure	Temp, °C	0.0	15.5	21.0	32.2	43.3
	Press, psig	173	269	320	405	517
	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	7950	15177	31317	69862	120451
	Flow, scf/h	17	32	66	148	255

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
QN	ULTRA-LINE®	23x130/134/143	9x51/52.5/56	CS/Ni-lined	Hst

\*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 Hst: Hastelloy

⚠ WARNING: This product can expose you to chemicals including Carbon Monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

