

# Hydrogen Fluoride

# HF

Grade	Semicon 4N5
Purity, %	99.995*
Sulfuric acid	≤25 ppmv
Sulfur Dioxide	≤15 ppmv
Hexafluorosilicic Acid	≤15 ppmv

- \* Inert gases may be found in considerable concentration, as it is used to package the product as sold: please inquire if this represents a concern.
- A lot analysis is provided for each order.
  - Pneumatic valves available upon request.

CYLINDER	Internal Volume	Liters	43.8	17.1	7.3
	<b>Cylinder Sizes &gt;&gt;</b>		<b>QF</b>	<b>GF</b>	<b>UF</b>
	Content	kg	22.7	11.36	1.82
		lbs	50	25	4
	Change Point*	lbs	0.1	0.035	0.015

\*Recommended Cylinder Change Point @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 Fluoride, Anhydrous	UN Number	UN 1052	Shipped as
	DOT Classification	8 Poison Gas Hazard Zone C (Gas Poisonous by Inhalation)	ECCN #	1C350	Liquefied Gas
	DOT Label	POISON GAS INHALATION HAZARD POISON CORROSIVE	Harmonized #	2811.11.0000	

TECHNICAL DATA	Cylinder Pressure @NTP	0.7 psig 1.07 atm
	Specific Volume @NTP	1.20 m <sup>3</sup> /kg 19.3 ft <sup>3</sup> /lb
	CAS No	7664-39-3
	CGA/DISS	660/638
	Molecular Weight	20.01
	TLV	3 ppm

Vapor Pressure	Temp, °C	0.0	15.5	21.0	32.2	43.3
	Press, psig	-7.7	-2.0	0.7	7.9	17.5
	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	729	1391	2871	6405	11043
	Flow, scf/h	2	3	6	14	23

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
QF	ULTRA-LINE®	23x130/134/143	9x51/52.5/56	CS	SS
GF	ULTRA-LINE®	23x66/70/79	9x26/27.5/31	CS	SS
UF	ULTRA-LINE®	15x51/55/64	6x19/20.5/24	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  
CS: Carbon Steel SS: Stainless Steel

