



^{11}B sous forme de trifluorure de bore gazeux

Description

Le trifluorure de bore gazeux est le dopant idéal pour les plaquettes de silicium destinées à la production de microprocesseurs hautement intégrés et à haute densité. Le $^{11}\text{BF}_3$ permet d'accroître l'efficacité et le rendement de la production, et contribue à rendre les puces plus petites et plus performantes.

Customer	:	
Gas	:	^{11}B Boron Trifluoride, Enriched
Cylinder No.	:	25A050121
P/N	:	20260603-P01-4710
Valve	:	CGA642
Fill Pressure at 70°F(21.1°C)	:	1388 PSIG nominal
Lot No.	:	S1-260603- $^{11}\text{BF}_3$ -01
Cylinder Size	:	47 L
Net weight	:	20,900 g
Filling Date	:	2026.06.03
Expiration Date	:	2028.06.02

ISOTOPIC ENRICHMENT

Item	Symbol	Units	Spec.	Control Limit	Det. Limit	Actual Result	Analysis Method
Boron-11	^{11}B	At. %	>99.992	≥ 99.995	-	99.997	ICP-MS

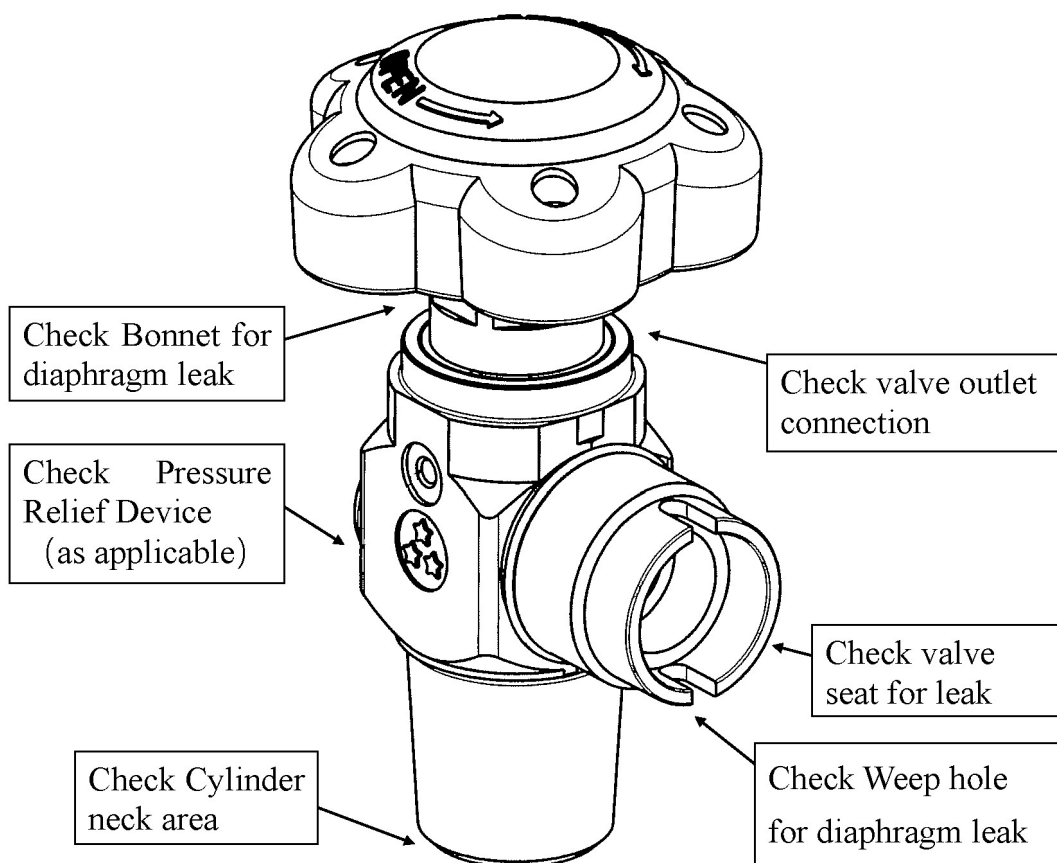


Item	Symbol	Units	Spec.	Control Limit	Det. Limit	Actual Result	Analysis Method
Boron-11	¹¹ B	Wt. %	>99.992	≥99.995	-	99.997	ICP-MS

CHEMICAL PURITY

Item	Formula	Units	Spec.	Control Limit	Det. Limit	Actual Result	Analysis Method
¹¹ BF ₃	¹¹ BF ₃	mol%	>99.999	>99.9995	-	99.9998	-
Oxygen+Argon	O ₂ +Ar	ppmv	1		0.004	0.008	GC/DID
Nitrogen	N ₂	ppmv	2	-	0.0075	0.065	GC/DID
Carbon Dioxide	CO ₂	ppmv	2		0.0028	0.076	GC/DID
Total Air (O ₂ +Ar+N ₂ +CO ₂)		ppmv	5			0.149	
Methane	CH ₄	ppmv	0.5		0.005	0.007	GC/DID
Carbon Monoxide	CO	ppmv	2		0.0081	ND	GC/DID
Sulfur Dioxide	SO ₂	ppmv	1.5	-	0.0071	ND	GC/FPD
Silicon Tetrafluoride	SiF ₄	ppmv	1		0.02	0.32	FTIR
Hydrogen Fluoride	HF	ppmv	2		0.02	1.66	FTIR

* 1.Quantification of isotopic enrichment and metallic ion contents was performed by ICP-MS with certified reference material calibration and instrumental mass bias correction for isotopic ratios, and calibrated with elemental standard solutions for trace metal analysis.



#	Area Checked	Detector	MDL	Result	Pass/Fail
1	Diaphragm (Bonnet)	DOD CLPX BF ₃	98.5 ppb	98.5 ppb	PASS
2	Diaphragm (Weep Hole)	DOD CLPX BF ₃	98.5 ppb	98.5 ppb	PASS
3	Valve Seat	DOD CLPX BF ₃	98.5 ppb	98.5 ppb	PASS
4	Valve Outlet Connection	DOD CLPX BF ₃	98.5 ppb	98.5 ppb	PASS
5	Shank At Valve Neck	DOD CLPX BF ₃	98.5 ppb	98.5 ppb	PASS
6	Pressure Relief Device	N/A	N/A	N/A	N/A