



Cylinder & Valve Specifications: Helium-3

Helium-3 can be delivered in single-ended aluminum cylinders or stainless steel, USDOT-compliant cylinders. Cylinders conform to Shipping Container Specifications stipulated in *U.S. Code of Federal Regulations, Title 49, or Bureau of Explosives, Tariff No. BOE 6000*.

Helium-3 is available in cylinders with water volumes of 150, 300, 500, 1000, 1200, 1700 and 4000 milliliters (mL). Recommended cylinder and valve configurations are listed below. Depending upon volume and initial pressure requirements, larger cylinders are recommended in order to minimize internal pressures and potential leakage coincident with higher pressures. Customer-supplied cylinders are also acceptable.

Aluminum Cylinders

The following recommended cylinder options are DOT-3AL / TC-3ALM rated with service pressures exceeding at 2200 psig (152 bar) and are fitted with CGA-580 valves:

Cylinder	Internal Water Volume (in ³ / ml)	Cylinder Dimensions			Recommended vs. <u>Maximum</u> Fill			
		Diameter (in / mm)	Length (in / mm)	Weight (lbs / kgs)	Liters of He-3 (STP)		Pressure (PSIA)	
					Rec	Max	psia / bar Rec	psia / bar Max
ISO-03	18 / 300	2.5 / 63.5	5.9 / 149	0.75 / 0.34	3.6	24	174 / 12	1200 / 82
ISO-10	61 / 1000	3.21 / 81.5	11.8 / 300	2.3 / 1.0	12	82	174 / 12	1200 / 82
ISO-12	73 / 1200	4.38 / 111.3	7.9 / 200	2.9 / 1.3	14.4	98	174 / 12	1200 / 82
ISO-17	103 / 1700	4.38 / 111.3	10.9 / 277	3.8 / 1.7	20.4	139	174 / 12	1200 / 82
ISO-40	244 / 4000	5.3 / 133	17.1 / 435	8.8 / 4.0	48	328	174 / 12	1200 / 82

We offer five aluminum cylinder sizes:



For aluminum cylinders with CGA580 outlet valves, we offer two outlet configurations:



Cylinder Configuration A
Valve+Plug

Cylinder Configuration B
2 Valves+Gauge+Plug

Stainless Steel Cylinders

Single-Ended Cylinders

DOT-4B 500 cylinders are hydrostatically proof tested at 1000 psig (69 bar) minimum.

Cylinder	Internal Water Volume (in ³ / ml)	Cylinder Dimensions			Recommended vs. Maximum Fill			
		Diameter (in / mm)	Length (in / mm)	Weight (lbs / kgs)	Liters of He-3 (STP)		Pressure (PSIA)	
					Rec	Max	psia / bar Rec	psia / bar Max
ISO-05	31 / 500	2 / 51	13.6 / 345	2.6 / 1.2	6	17	174 / 12	500 / 34
ISO-015	9 / 150	2 / 51	5 / 128	1.01 / 0.46	2	5	174 / 12	500 / 34



For stainless steel cylinders with 1/4" NPT outlet valves we offer two outlet configurations:



Cylinder Configuration C
Valve+Plug



Cylinder Configuration D
2 Valves+Gauge+Plug

Customer-Supplied Cylinders & Valves

ISOFLEX USA will accept customer cylinders and valves for filling. By providing such cylinders and valves, customer certifies such items as fully serviceable and leak-proof, subject to reasonable care and handling by ISOFLEX USA during the filling procedure. Please refer to Special Terms & Conditions of Sale - Helium-3, which governs all He-3 sales made by ISOFLEX USA.

Important Notes

- All gas volumes are stated in terms of Standard Temperature and Pressure (STP). STP refers to 0 °C (32 °F) and an absolute pressure of 1 bar (14.504 psi; 0.986 atm).
- Fill volumes are within ± 5%, STP. Customer will be invoiced for actual volume shipped.