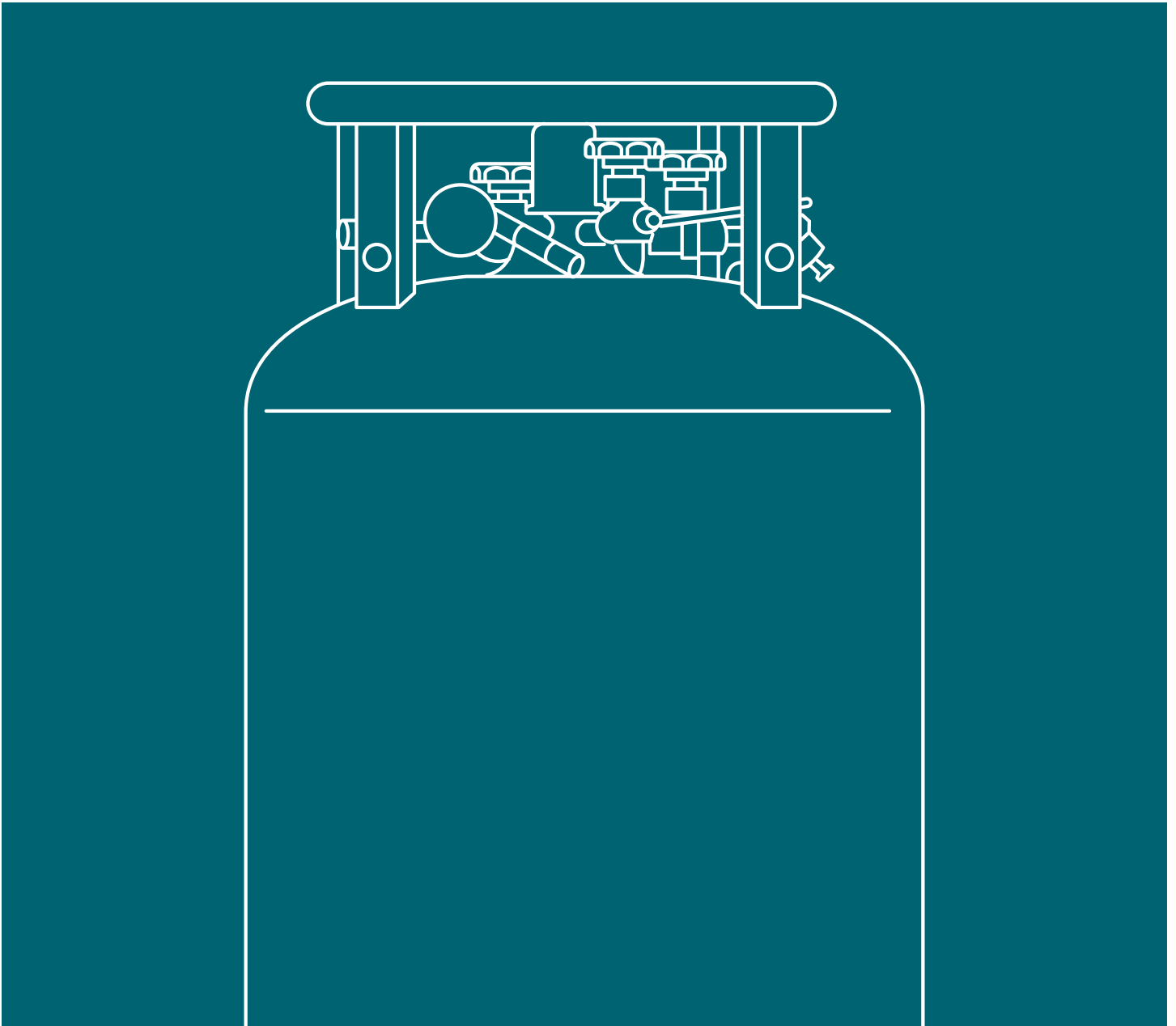


# Airgas®

an Air Liquide company

LIQUID GAS  
CYLINDERS

## Safe and Reliable Liquid Gas Supply



## For your information: defining liquid gas packaging

**Liquefied gases** are gases which are normally loaded into cylinders as liquid and withdrawn as gases from the top head space. Includes gases such as carbon dioxide, hydrogen chloride, propane, propylene, and many others.

**Cryogenic liquid gases** are gases which, through the air separation process, are dropped to temperatures below their liquid boiling point so that they can be delivered in vacuum insulated cryogenic cylinders in their liquid state. Most common are liquid argon (LAR), liquid nitrogen (LIN) and liquid oxygen (LOX). Liquid cylinders can deliver a much higher density product in a smaller package that typical gas cylinders can not maintain. Airgas can also deliver these gases via vacuum insulated transports and load into cryogenic vacuum insulated bulk tanks. For example, these vessels allow for withdrawal of some gas such as liquid for chilling (nitrogen or helium). They are most commonly withdrawn as gases from cryogenic liquid cylinders or bulk tanks via “vaporizer” loops which raise the liquid temperature to its boiling point, so they vaporize (i.e. convert to gas phase). These are often inaccurately referred to colloquially as “dewars”. They are also commonly referred to as VGLs referencing the top 3 connections/outlets on the vessels (Vent, Gas, Liquid).

**Cryogenic dewars** are open top storage vessels for IVF, tissue, or other sample storage. They have no liquid withdrawal capability except to take off the liquid and pour out liquid and essentially perform as thermos bottles with push on rather than screw on tops so that liquid boiling into gas and forming pressure can escape without rupturing from over pressurization.

## Liquid gas cylinders

Airgas supplies liquid gas cylinder packaging with various volume capacities to safely contain liquid gases such as argon, carbon dioxide, nitrogen and oxygen. These gases are stored at extremely low temperatures and in a liquid state. Cryogenic tanks and dewars are also available—please contact your Airgas representative for more information.



230



180



160

Size	DOT Specifications	Service Pressure*		Capacity** (approx)		Outside Diameter	Height	Tare Weight (average)		Internal Water Volume	
		psig	bar	cf	liter			lb	kg	cf	liter
230	4L	230	15.9	5921	167665	26	57	324	147.0	14646	240
180	4L	230	15.9	4835	136913	20	64	260	117.9	11961	176
160	4L	230	15.9	4486	127030	20	64	250	113.4	10740	176

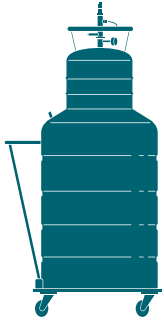
\* Additional delivery pressures are available (such as 22 psig, 350 psig or 500 psig), please contact your Airgas representative.

\*\* Approximate gas volume for oxygen

**Need larger quantities of liquid gas? Ask your Airgas representative about MicroBulk gas supply!**

# Liquid helium containers

Airgas provides light and compact liquid helium containers designed for minimal-loss storage, transport and dispense. Please contact your Airgas representative for more information.



500



250



100



60



30

Size	DOT Specifications	Service Pressure		Liquid Capacity (approx)		Outside Diameter	Height	Tare Weight (average)		Internal Water Volume*	
		psig	bar	cf	liter			in	in	lb	kg
500	n/a	12	0.8	18.0	500	42	71	480	217.7	33563	550
250	n/a	12	0.8	9.0	250	32	67	348	157.9	17392	275
100	n/a	12	0.8	4.0	100	24	59	212	96.2	6857	110
60	n/a	12	0.8	2.0	60	24	50	184	83.5	4028	66
30	n/a	10	0.7	1.1	30	20	48	131	59.3	2075	34

\* Nominal

*Fill Your Potential.™*

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