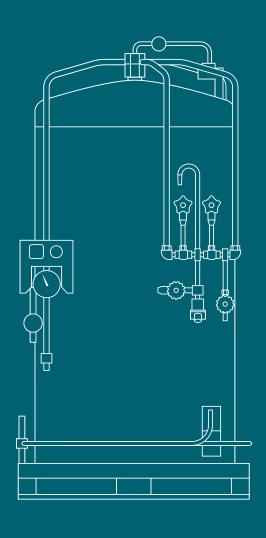


# The right amount of gas



## Impactful changes

## Improve safety

- Eliminate cylinder handling and free up valuable floor space
- Minimize exposure to pressurized and cryogenic gases
- Reduce total number of deliveries at your facility

## Increase reliability

- No residual product returned
- · No cylinder or dewar change-outs
- Consistent and constant supply and filled on-site
- Reduce contamination risks
- · Simplify inventory management

# Enhance facility Opex and profitability

- · Save time and labor by eliminating cylinder change-outs
- Decrease machine downtime
- Eliminate material and product loss

## Optimal supply modes

Improving your manufacturing process is your primary focus. We can help – tap into the expertise of Airgas, an Air Liquide company, to determine the cost-effective supply mode that will enhance your profitability and improve your production. Whether it is cylinders, MicroBulk, large bulk or on-site gas generation, we can specify and engineer the most optimal gas supply solution for your particular process.

# MicroBulk from Airgas

Tangible growth potential.

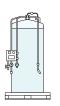
Maximum safety.

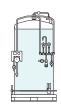
Reduced operational costs.

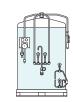












Tank Specifications			450 Liter		1,000 Liter	1,500 Liter		2,000 Liter		3,000 Liter		5,500 Liter
Pressure style			VHP		HP	HP	VHP	HP	VHP	HP	VHP	VHP
Capacity	gross	liters	450 420		1,056	1,550	1,550	2,042	2,042	2,911	2,911	5,434
	net	liters			950	1,455	1,455	1,945	1,945	2,707	2,707	5,110
MAWP		psig	500		350	350	500	350	500	350	500	500
Preset operating pressure	maximum	psig	450		300	300	450	300	450	300	450	450
Design specifications			DOT	ASME	ASME	ASME	ASME	ASME	ASME	ASME	ASME	ASME
Storage capacity <sup>(1)</sup>	N <sub>2</sub>	SCF	7,922	10,332	24,350	35,790	35,790	47,847	47,847	66,592	66,592	125,000
	O <sub>2</sub>	SCF	11,124	12,760	30,070	44,220	44,220	59,089	59,089	82,239	82,239	154,900
	Ar	SCF	10,812	12,478	29,400	43,220	43,220	57,786	57,786	80,425	80,425	151,700
	CO <sub>2</sub>	SCF	n/a	n/a	19,960	29,340	n/a	38,048	n/a	52,954	n/a	n/a
		lbs.	n/a	n/a	2,283	3,356	n/a	4,352	n/a	6,058	n/a	n/a
Thermal performance (2)	N <sub>2</sub>	NER%/day	1.9%	1.6%	1%	1%	1%	1%	1%	1%	1%	0.7%
	O <sub>2</sub> ,Ar	NER%/day	1.2%	1%	0.62%	0.62%	0.62%	0.62%	0.62%	0.62%	0.62%	0.43%
	CO <sub>2</sub>	NER%/day	n/a		0.3%	0.3%	n/a	0.3%	n/a	0.3%	n/a	n/a
Gas delivery rate	LIN/LAR/LOX	SCFH	575		960	1,350	1,350	1,350	2,000(3)	1,350	2,000(3)	3,500/5,000
	CO <sub>2</sub>	SCFH	n/a		320	450	n/a	450/667	n/a	450/667	n/a	n/a
		lbs./H	n/a		36	51	n/a	51/76	n/a	51/76	n/a	n/a
Dimensions	diameter	inches	30		42	48	48	48	48	59	59	80
	height*	inches	69		82	92	91	118.5	119.5	122	122.5	119
	tare weight**	lbs.	1,077		1,765	2,200	2,500	2,600	2,950	3,300	4,250	9,100

<sup>1)</sup> Values are based on net capacity at 0 psig for ASME vessels. CO<sub>2</sub> vessels are based on net capacity at 300 psig (20.7 barg). DOT vessels are per code.

<sup>2)</sup> Values are based on gross capacity.

<sup>3)</sup> Optional 3,500 SCFH flow kit available.

<sup>\*</sup>All dimensions are measured from the floor to the top of the highest plumbing component.

<sup>\*\*</sup> Weight includes lab bases (265 lbs.)



#### MicroBulk from Airgas

Delivered, connected and ready for the first fill by Airgas, all on the same day.

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