University of Michigan – Dearborn
Maximum Allowable Quantities
Compressed Gas Cylinders
Based on Lab Square Footage *(See footnotes 1, 2, 3)*

	100ft^2	200ft^2	300ft^2	400ft^2	500ft^2	600ft^2	700ft^2	800ft^2	900ft^2	≥1000 ft^2
Flammable Gas (e.g., Hydrogen, Acetylene)	1 "A" size Cylinders	2 "A" size Cylinders	3 "A" size Cylinders	4 "A" size Cylinders	5 "A" size Cylinders	6 "A" size Cylinders	7 "A" size Cylinders	8 "A" size Cylinders	9 "A" size Cylinders	10 "A" size Cylinders
Oxidizing Gas (e.g., Oxygen, NO2)	1 "A" size Cylinders	2 "A" size Cylinders	3 "A" size Cylinders	4 "A" size Cylinders	5 "A" size Cylinders	6 "A" size Cylinders	7 "A" size Cylinders	8 "A" size Cylinders	9 "A" size Cylinders	10 "A" size Cylinders
Toxic Gas (Health Hazard rating of 3 or 4 or 2 without physiological warning. e.g., arsine, fluorine, carbon monoxide	1 Lecture Bottle	2 Lecture Bottle	3 Lecture Bottle	4 Lecture Bottle	5 Lecture Bottle	6 Lecture Bottle	7 Lecture Bottle	8 Lecture Bottle	9 Lecture Bottle	10 Lecture Bottle
Pyrophoric Gas	1 Lecture Bottle	2 Lecture Bottle	3 Lecture Bottle	4 Lecture Bottle	5 Lecture Bottle	6 Lecture Bottle	7 Lecture Bottle	8 Lecture Bottle	9 Lecture Bottle	10 Lecture Bottle

Maximum of 25 lecture bottles of all gases combined is specified for any laboratory.
Cylinders not "in use" shall not be stored in laboratory. One backup cylinder for each gas is acceptable.

1. **Quantities are listed for sprinklered areas - for unsprinklered spaces, divide the amount allowed by a factor of two. Note: Pyrophoric gases are not allowed in unsprinklered areas.**
2. **Refer to the entire EHSEM Guideline on Compressed Gas Cylinders for additional requirements for gas usage.**
3. **Provided for general guidance only; Consult with EHSEM for review of lab operations and other requirements that may be necessary if quantities are above the MAQ.**
4. **"A" size cylinders have an internal water volume of 1.55 cu.ft. and are equivalent to an Air Liquide #44, Airgas 200, Linde 44 (K), Matheson 1A, or Praxair K/UK.**
5. **Lecture Bottles have an internal water volume of 0.02 cu.ft. and are designated LB, LBX, LBR, or LX**

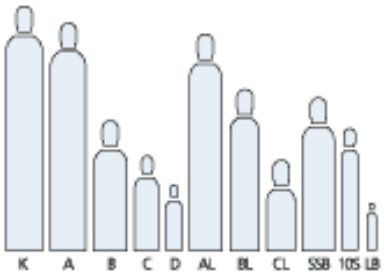
Standard Cylinder Reference Information

Nominal Dimension Diameter x Length		
cm	**in**	**ft3**
23 x 132	**9 x 52**	**1.54**
30 x 109	**12 x 43**	**2.15**
38 x 137	**15 x 54**	**4.46**
38 x 117	**15 x 46**	**3.87**
25 x 122	**10 x 48**	**1.97**
36 x 150	**14 x 59**	**4.46**
25 x 140	**10 x 55**	**1.73**
30 x 135	**12 x 53**	**3.00**
20 x 122	**8 x 48**	**1.04**
20 x 135	**8 x 53**	**1.37**
51 x 305	**20 x 120**	**15.50**
25 x 130	**10 x 51**	**1.54**
25 x 122	**10 x 48**	**1.92**
23 x 142	**9 x 56**	**1.72**
20 x 69	**8 x 27**	**0.59**
18 x 48	**7 x 19**	**0.30**
20 x 64	**8 x 25**	**0.54**
23 x 56	**9 x 22**	**0.54**
16 x 85	**7 x 38**	**0.55**
15 x 53	**6 x 21**	**0.24**
13 x 61	**5 x 24**	**0.24**
23 x 33	**9 x 13**	**0.25**
15 x 53	**9 x 21**	**0.25**
18 x 43	**7 x 17**	**0.24**
10 x 36	**4 x 14**	**0.08**
8 x 32	**3 x 12.5**	**0.033**
5 x 38	**2 x 15**	**0.016**

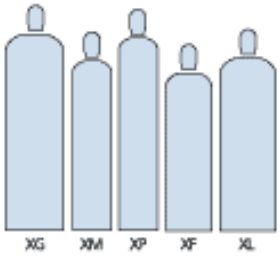
Standard Cylinder Sizes:

Cylinder Size	Nominal Size* Dia X Height (in.)	Nominal* Tare Weight (lbs.)	Water Capacity (lbs.)	Internal Volume @ 70°F (21°C) 1 ATM (liters/cubic ft.)	US DOT SPECS
K	9.25 X 60	135	110	1.76	3AA2400
A	9 X 56	115	96	1.55	3AA2015
B	8.5 X 31	60	37.9	0.61	3AA2015
C	6 X 24	27	15.2	0.24	3AA2015
D	4 X 18	12	4.9	0.08	3AA2015
AL	8 X 53	52	64.8	1.04	3AL2015
BL	7.25 X 39	33	34.6	0.55	3AL2216
CL	7 X 21	19	13	0.21	3AL2216
XL	14.5 X 50	75	238	3.83	4BA240
SSB	8 X 37	95	41.6	0.67	3A1800
10S	4 X 31	21	8.3	0.13	3A1800
LB	2 X 15	4	1	0.016	3E1800
XF	12 X 46	180	--	2.15	8AL
XG	15 X 56	149	278	4.46	4AA480
XM	10 X 49	90	120	1.92	3A480
XP	10 X 554	55	124	1.98	4BA300
QT	3 X 14**	2.5**	2.0	0.0318	4B-240ET
LP5	12.25 X 18.25	18.5	47.7	0.76	4BW240

*** Includes 5.5 inches or 4.5 lbs. for valve and cap.**
**** ** Includes 4.5 inches or 1.5 lbs for valve**



High Pressure Cylinders



Low Pressure Cylinders

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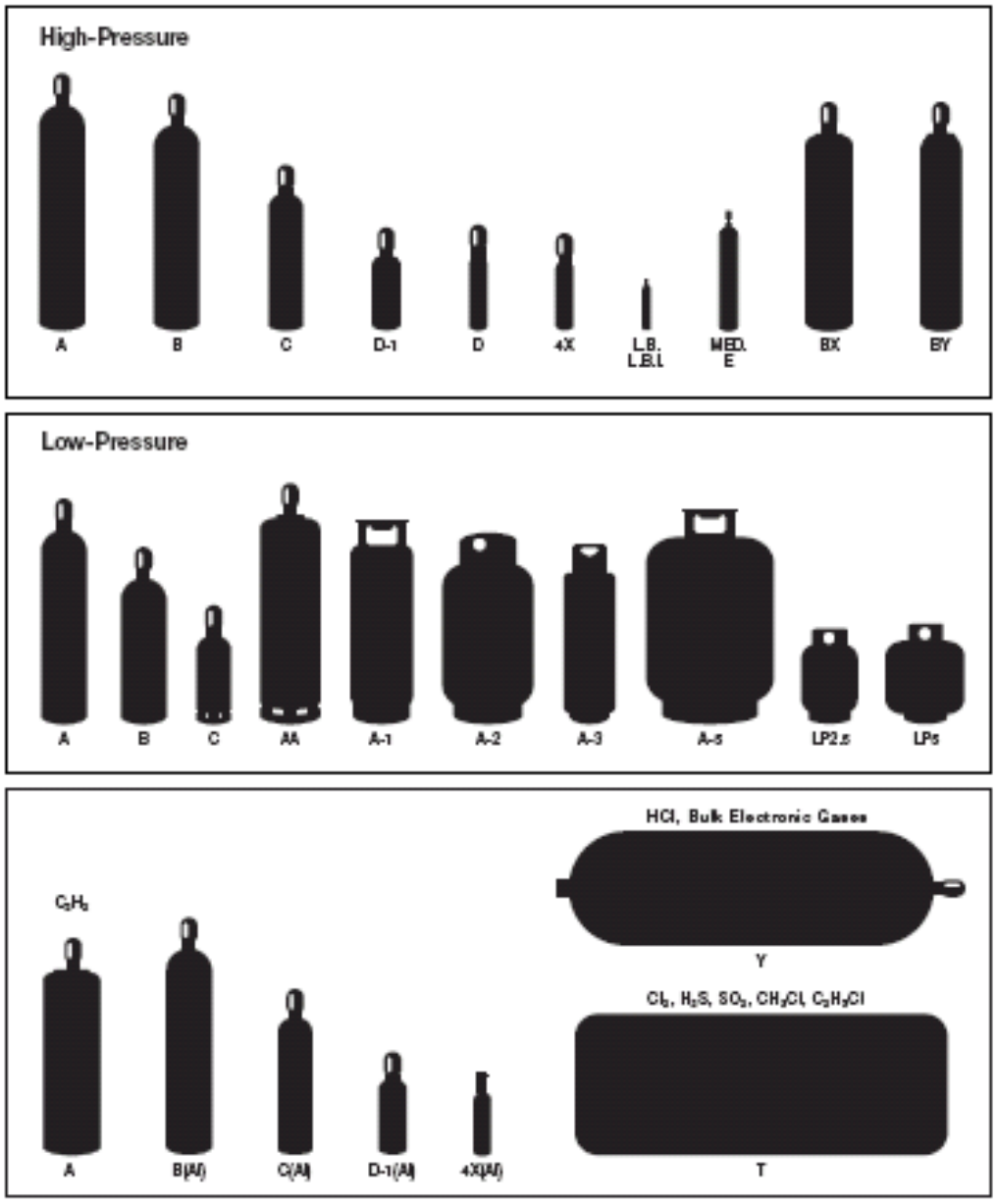
High-Pressure
A
B
C
D-1
D
4X
L.B.
L.B.L
MED.
E
BX
BY
Low-Pressure
A
B
C
AA
A-1
A-2
A-3
A-5
LP2.5
LP5
C_2H_2
A
B(Al)
C(Al)
D-1(Al)
4X(Al)
HCl, Bulk Electronic Gases
Y
Cl_2, H_2S, SO_2, CH_3Cl, C_2H_3Cl
T