



Hydrogen

Description

Formula: H₂

Gas Data

Molecular Weight: 2.02
 Density: 0.08235 kg/m³ @ 25°C, 101.325 kPa
 0.00521 lb/ft³ @ 77°F, 14.696 psia
 Specific Volume: 12.0 m³/kg @ 21.1°C, 101.325 kPa
 192 ft³/lb @ 70°F, 14.696 psia

Safety Information

LFL in Air: 4%
 UFL in Air: 74%

Shipping Information

CAS Registry Number: 1333-74-0
 UN Number: UN 1049
 ECCN Number: 1C980
 DOT Proper Shipping Name: Hydrogen, Compressed
 DOT Classification: 2.1 (Flammable Gas)
 DOT Label: FLAMMABLE GAS
 TC Shipping Name: Hydrogen, Compressed
 TC Classification: 2.1
 TC Label: FLAMMABLE GAS

Cylinder Specifications

Cylinder Size	Valve Outlet CGA No.	Pressure		Approximate Ship Weight	
		psig @ 70°F	kPa @ 21.1°C	lb	kg
1H	695	3,500	24,132	198	90
1L	350	2,400	16,547	148	67
1A	350	2,200	15,168	132	60
2	350	2,000	13,790	74	34
3	350	2,000	13,790	39	18
4	350	2,000	13,790	22	10
6	350	1,585	10,928	20	9
7B	350	1,650	11,376	6	3
7A	350	825	5,688	6	3
7	350	225	1,551	6	3
LB	170	1,775	12,238	6	3

Gas Grade Purity Specifications

Hydrogen, Research Purity 99.9999%

Guaranteed Specifications

Impurity	Limit
Carbon Dioxide	< 0.1 ppm
Carbon Monoxide	< 0.1 ppm
Nitrogen	< 0.5 ppm
Oxygen	< 0.1 ppm
THC	< 0.1 ppm
Water	< 0.5 ppm

Product Code	Cylinder Size	Content US	Content Metric
G2146101	1A	213 ft ³	6.03 m ³
G2146140	2	76 ft ³	2.15 m ³
G2146150	3	30 ft ³	0.85 m ³
G2146165	4	10 ft ³	0.28 m ³
G2146178	6	3.53 ft ³	100 L
G2146183	7B	1.77 ft ³	50 L
G2146182	7A	0.88 ft ³	25 L
G2146181	7	0.25 ft ³	7 L

Equipment Recommendations

Dual Stage Reg.	Consult Factory
Single Stage Reg.	Consult Factory
Cross Purge	Consult Factory
Flash Arrestor	6104A
Leak Detector	8057
Leak Detector	8066
Leak Detector	8081A
Detector Tube	8014-137U
Cyl. Valve Wrench	TW-5

A Certificate of Analysis is available on request at a nominal charge.

Hydrogen, Matheson Purity 99.9995%

Guaranteed Specifications

Impurity	Limit
Argon	< 2 ppm
Carbon Dioxide	< 1 ppm
Carbon Monoxide	< 1 ppm
Nitrogen	< 3 ppm
Oxygen	< 1 ppm
THC	< 0.5 ppm
Water	< 1 ppm

Product Code	Cylinder Size	Content US	Content Metric
G1851112	1L	258 ft ³	7.31 m ³
G1851101	1A	213 ft ³	6.03 m ³
G1851140	2	76 ft ³	2.15 m ³
G1851150	3	30 ft ³	0.85 m ³
G1851165	4	10 ft ³	0.28 m ³

Dual Stage Reg.	Series 3810-350
Single Stage Reg.	Series 3610A-350
Cross Purge	4774-350
Flash Arrestor	6104A
Leak Detector	8057
Leak Detector	8066
Leak Detector	8081A
Detector Tube	8014-137U
Cyl. Valve Wrench	TW-5

A Certificate of Analysis is available on request at a nominal charge.

Hydrogen, UHP Enable 99.999%

Guaranteed Specifications

Impurity	Limit
CO + CO ₂	< 1 ppm
Nitrogen	< 4 ppm
Oxygen	< 1 ppm
THC	< 1 ppm
Water	< 1 ppm

Product Code	Cylinder Size	Content US	Content Metric
G2671453	1L	258 ft ³	7.31 m ³
G2671092	1A	213 ft ³	6.03 m ³

Dual Stage Reg.	Series 3810-350
Single Stage Reg.	Series 3610A-350
Cross Purge	4774-350
Flash Arrestor	6104A
Leak Detector	8057
Leak Detector	8066
Leak Detector	8081A
Detector Tube	8014-137U
Cyl. Valve Wrench	TW-5

A Certificate of Analysis is available on request at a nominal charge.



Hydrogen (continued)

Gas Grade Purity Specifications		Product Code	Cylinder Size	Content		Equipment Recommendations	Model No.
				US	Metric		
Hydrogen, Ultra High Purity 99.999%		G1939112	1L	258 ft ³	7.31 m ³	Dual Stage Reg.	Series 3810-350
<i>Guaranteed Specifications</i>		G1939101	1A	213 ft ³	6.03 m ³	Single Stage Reg.	Series 3610A-350
Nitrogen	< 7 ppm	G1939140	2	76 ft ³	2.15 m ³	LB Regulator	Series 3570-170
Oxygen	< 2 ppm	G1939150	3	30 ft ³	0.85 m ³	Cross Purge	4774-350
THC	< 0.5 ppm	G1939165	4	10 ft ³	0.28 m ³	Flash Arrestor	6104A
Water	< 3 ppm	G1939175	LB	2 ft ³	56 L	Leak Detector	8057
						Leak Detector	8066
						Leak Detector	8081A
						Detector Tube	8014-137U
						Cyl. Valve Wrench	TW-5
<i>A Certificate of Conformance will be provided on request.</i>							
<i>A lot analysis is available at a nominal charge.</i>							
Hydrogen, Zero Gas 99.99%		G2040112	1L	258 ft ³	7.31 m ³	Dual Stage Reg.	Series 3120-350
<i>Guaranteed Specifications</i>		G2040101	1A	213 ft ³	6.03 m ³	Single Stage Reg.	Series 3530-350
Oxygen	< 5 ppm	G2040140	2	76 ft ³	2.15 m ³	LB Regulator	Series 3550-170
THC	< 0.5 ppm	G2040150	3	30 ft ³	0.85 m ³	Tee Purge	4753-350
Water	< 10 ppm	G2040165	4	10 ft ³	0.28 m ³	Flash Arrestor	6103A-F
						Leak Detector	8057
						Leak Detector	8066
						Leak Detector	8081A
						Detector Tube	8014-137U
						Cyl. Valve Wrench	TW-5
<i>A lot analysis is available on request. Please inquire for individual cylinder analysis.</i>							
Hydrogen, Prepurified 99.99%		G1150112	1L	258 ft ³	7.31 m ³	Dual Stage Reg.	Series 3120-350
		G1150101	1A	213 ft ³	6.03 m ³	Single Stage Reg.	Series 3530-350
		G1150140	2	76 ft ³	2.15 m ³	LB Regulator	Series 3550-170
		G1150150	3	30 ft ³	0.85 m ³	Tee Purge	4753-350
		G1150165	4	10 ft ³	0.28 m ³	Flash Arrestor	6103A-F
		G1150175	LB	2 ft ³	56 L	Leak Detector	8057
						Leak Detector	8066
						Leak Detector	8081A
						Detector Tube	8014-137U
						Cyl. Valve Wrench	TW-5
<i>A Certificate of Conformance will be provided on request.</i>							
Hydrogen, Extra Dry 99.9%		G1150212	1L	258 ft ³	7.31 m ³	Dual Stage Reg.	Series 1250-350
		G1150201	1A	213 ft ³	6.03 m ³	Single Stage Reg.	Series 3530-350
		G1150240	2	76 ft ³	2.15 m ³	LB Regulator	Series 3550-170
		G1150250	3	30 ft ³	0.85 m ³	Tee Purge	4753-350
		G1150265	4	10 ft ³	0.28 m ³	Flash Arrestor	6103A-F
		G1150275	LB	2 ft ³	56 L	Leak Detector	8057
						Leak Detector	8066
						Leak Detector	8081A
						Detector Tube	8014-137U
						Cyl. Valve Wrench	TW-5
<i>A Certificate of Conformance will be provided on request.</i>							
Hydrogen, 3500 psig 99.95%		G1150308	1H	322 ft ³	9.12 m ³	Single Stage Reg.	Series 3060-695
						Leak Detector	8057
						Leak Detector	8066
						Leak Detector	8081A
						Detector Tube	8014-137U
<i>A Certificate of Conformance will be provided on request.</i>							



Hydrogen (continued)

Gas Grade Purity Specifications	Product Code	Cylinder Size	Content		Equipment Recommendations	Model No.
			US	Metric		
Hydrogen, CP Grade 99.0%	G1362012	1L	258 ft ³	7.31 m ³	Dual Stage Reg.	Series 81-350
	G1362138	1Lx6	1548 ft ³	43.83 m ³	Single Stage Reg. Tee Purge Flash Arrestor Leak Detector Leak Detector Leak Detector Detector Tube Cyl. Valve Wrench	Series 18-350 4753-350 6103A-F 8057 8066 8081A 8014-137U TW-5

⚠ WARNING: This product can expose you to chemicals including Carbon Monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.