



1-BUTENE 1-C₄H₈

Colorless, flammable, liquefied gas with a mildly aromatic odor.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Butylene
I.D. Number: UN1012
Hazard Class: 2.1
Shipping Labels: Flammable gas

TECHNICAL INFORMATION

Molecular Weight: 56.108
Specific Volume: 6.7 ft³/lb.
CAS Registry: 106-98-9
Safety Data Sheet Reference: 1-Butene

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume (unless otherwise specified) ²		
					H ₂ O	Sulfur	Sum of all Impurities ³
Research	4.0	99.99%	RES	1BU RES-	2	1	100
Instrument	2.5	99.5%	INS	1BU INS-	10	0.5	< 0.5%
Chemical Pure	2.0	99%	CP	1BU CP-	10	0.5	< 1%

Notes: ¹ Complete catalog number by selecting cylinder size code using chart below.
² Liquid Phase Analysis. Specifications are typical results and are subject to change without notice.
³ A complete list of impurities is available upon request.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume lbs. ⁴	Pressure (PSIG) @ 70° F.	Valve Connection CGA ⁵	Gross Weight (lbs.)
Low Pressure Steel Cylinders					
Jumbo	HTN	540	23.5	510 / 555 SIPHON	874
350	LP25	128	23.5	510 / 555 SIPHON	207
LP5	LP5	25	23.5	510 / 555 SIPHON	42

Notes:

⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

⁵ Siphon tube with a CGA 555 for liquid withdrawal is available upon request. Add "S" at end of cylinder size code.

Contact your WestAir representative about equipment recommendations for this product.



1,3 BUTADIENE

C₄H₆

Colorless, flammable, liquefied with a mildly aromatic odor.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Butadienes
I.D. Number: UN1010
Hazard Class: 2.1
Shipping Labels: Flammable gas

TECHNICAL INFORMATION

Molecular Weight: 54.092
Specific Volume: 6.9 ft³/lb.
CAS Registry: 106-99-0
Safety Data Sheet Reference: 1,3 Butadiene

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume ² <i>(unless otherwise specified)</i>
					Sum of all Impurities ³
Chemical Pure	2.0	99%	CP	SG 13BCP-	< 1 %

Notes:

¹ Complete catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Liquid Phase Analysis. Specifications are typical results and are subject to change without notice.

³ A complete list of impurities is available upon request.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume ⁴ lbs.	Pressure (PSIG) @ 70° F.	Valve Connection ⁵ CGA	Gross Weight (lbs.)
Low Pressure Steel Cylinders					
350	LP25	129	21.4	510 / 555	204
LP5	LP5	25	21.4	510 / 555	43
Disposable Non-Refillable Cylinders					
Lecture Bottle	LB*	0.375	21.4	*170	4.4

Notes:

⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

⁵ Siphon tube with a CGA 555 for liquid withdrawal is available upon request. Add "S" at end of cylinder size code.

Contact your WestAir representative about equipment recommendations for this product.



ACETYLENE C2H2

Colorless, highly flammable gas with an ethereal odor.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Acetylene, Dissolved
I.D. Number: UN1001
Hazard Class: 2.1
Shipping Labels: Flammable Gas

TECHNICAL INFORMATION

Molecular Weight: 26.038
Specific Volume: 14.43 ft³/lb.
CAS Registry: 74-86-2
Safety Data Sheet Reference: Acetylene

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume (unless otherwise specified) ²		
					H ₂ S	PH ₃ +AsH ₃	O ₂ +CH ₄
Atomic Absorption	2.6	99.6%	AA	SG ACAA-	25	25	4000

Notes¹ Complete catalog number by selecting cylinder size code using chart below.

² Specifications are typical results and are subject to change without notice.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume ³ ft ³	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
Low Pressure Steel Cylinders					
#5	A5	360	250	510	213
<i>Notes: ³ Approximate fill volume. May vary slightly depending on cylinder manufacturer.</i>					

Contact your WestAir representative about equipment recommendations for this product.



AIR

Colorless, odorless, nonflammable gas.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Air, compressed
 I.D. Number: UN1002
 Hazard Class: 2.2
 Shipping Labels: Nonflammable Gas

TECHNICAL INFORMATION

Molecular Weight: 28.96
 Specific Volume: 13.3 ft³/lb.
 CAS Registry: 132259-10-0
 Safety Data Sheet Reference: Air

PRODUCT GRADE SPECIFICATIONS

Grade Name	Oxygen Content	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by volume (unless otherwise specified) ²						
				H ₂ O	THC (as CH ₄)	CO	CO ₂	NOx	SO ₂	N ₂
Ultra Zero CEM	19.9%-21.9%	UZC	SG AIUZC-	1	0.1	0.1	0.1	0.1	0.1	Balance
CEM Zero	19.9%-21.9%	CEM	SG AICEM-	2	0.5	1	0.5	0.1	0.1	Balance
Vehicle Emission Zero	18%-21%	VEZ	SG AIVEZ-	2	0.5	1	0.5	0.1	0.1	Balance
Ultra Zero	19%-23.5%	UZ	SG AIUZ	2	0.5	0.5	0.5	0.5		Balance
BAR 97 Zero	20.48%-21.31%	ZERO97	SG AIZERO97-		1	1	200	1		Balance
Instrument Grade	19.5%-23.5%	IG	SG AIIG	3	1	1	1			Balance
Zero	19.5%-23.5%	Z	SG AIZ-	2	1					Balance
Dry	19.5%-23.5%	DRY	SG AIDRY-	10						Balance

Notes: ¹ Complete the catalog number by selecting cylinder size code using chart below.

² Specifications are typical results and are subject to change without notice.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume ⁴ ft ³	Pressure (PSIG)	Valve Connection CGA	Gross Weight (lbs.)
High Pressure Carbon Steel Cylinders³					
300	T	309	2640	590	167
200	K	224	2015	590	152
80	Q	84	2200	590	71
35	G	38	2200	590	33
High Pressure Aluminum Cylinders					
150A	DA	144	2000	590	60
80A	QA	89	2200	590	37
33A	GA	32	2200	590	11
Non-Refillable / Disposables⁵					
Lecture Bottle	LBX	1.9	1800	170	4
17L	P	0.6	240	600	1.1
34L	H	1.2	500	600	1.4
103L	J	3.6	1000	C10	2.3
221L	M	7.5	260	165	6.3
550L	E	19.2	2200	590	12.9

Notes: ³ Available in Packs in select sizes and grades.

⁴ Approximate fill volume. May vary slightly depending on cylinder manufacturer.

⁵ Only available in select grades.

Contact your WestAir representative about equipment recommendations for this product.



AMMONIA



Colorless, toxic, corrosive, liquefied, alkaline gas with a pungent and irritating odor.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Ammonia, Anhydrous
 I.D. Number: UN1005
 Hazard Class: 2.2
 Shipping Labels: Nonflammable Gas, Inhalation Hazard

TECHNICAL INFORMATION

Molecular Weight: 17.031
 Specific Volume: 22.6 ft³/lb.
 CAS Registry: 7664-41-7
 Safety Data Sheet Reference: Ammonia

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume (unless otherwise specified) ²					
					O ₂	H ₂ O	THC (as CH ₄)	N ₂	CO	CO ₂
Research	5.0	99.999%	RES	SG AMRES-	1	1	3	3	1	1
CP	2.8	99.8%	CP	SG AMCP-	Sum of Total Impurities <1200ppm					

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Specifications are typical results and are subject to change without notice. Product sold on the basis of total impurities. Individual impurities may vary slightly.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume lbs. ³	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
Low Pressure Steel Cylinders					
150#	LP150	150	114	240	185
High Pressure Carbon Steel Cylinders					
200	K	50	114	240, 705	185
80	Q	15	114	240, 705	80
35	G	8	114	240, 705	38
High Pressure Aluminum Cylinders					
150A	DA	30	114	705	79

Notes: ³ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

Contact your WestAir representative about equipment recommendations for this product.



ARGON Ar

Colorless, odorless, nonflammable inert gas.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Argon, compressed
 I.D. Number: UN1006
 Hazard Class: 2.2
 Shipping Labels: Nonflammable Gas

TECHNICAL INFORMATION

Molecular Weight: 39.948
 Specific Volume: 9.67 ft³/lb.
 CAS Registry: 7440-37-1
 Safety Data Sheet Reference: Argon

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by volume (unless otherwise specified) ²						
					O ₂	H ₂ O	THC (as CH ₄)	N ₂	N ₂ +O ₂	CO ₂	CO
Research	6.0	99.9999%	RES	SG ARRES-	0.2	0.2	0.1	2		0.1	0.1
Ultra Carrier	5.5	99.9995%	UC	SG ARUC-	1	1	0.5	2		0.5	0.5
Lab & Spec	5.5	99.9995%	LSG	SG ARLSG-	1	1	0.5				
Ultra High Purity	5.0	99.999%	UHP	SG ARUHP-	3	3	0.5				
Zero	4.8	99.998%	Z	SG ARZ-	3	3	1				
High Purity	4.8	99.998%	HP	SG ARHP-	5	5					

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Specifications are typical results and are subject to change without notice.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume ³ ft ³	Pressure (PSIG)	Valve Connection CGA	Gross Weight (lbs.)
High Pressure Carbon Steel Cylinders					
6K ⁴	6K	572	6000	677	363
3K ⁴	3K	383	3500	680	230
300 ⁵	T	301	2400	580	178
200 ⁵	K	224	2015	580	160
80	Q	76	2015	580	74
35	G	36	2015	580	34
High Pressure Aluminum Cylinders					
150A	DA	152	2015	580	65
80A	QA	88	2216	580	39
33A	GA	34	2216	580	12
Disposable Non-Refillable Cylinders					
Lecture Bottle	LB	2	1800	170 or 580	4

Notes:

³ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

⁴ Only available in UHP grades or lower.

Also available in other packaging such as:

- ⁵ High capacity cylinders with special pressure ratings in singles and packs
- 6Packs & 15Packs in select sizes and grades
- Refer to Cryogenic Section for Liquid Argon
- Bulk tube trailers

Contact your WestAir representative about equipment recommendations for this product.



ARGON Ar

CRYOGENIC LIQUID

Colorless, odorless, nonflammable cryogenic liquid.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Argon, Refrigerated Liquid
I.D. Number: UN1951
Hazard Class: 2.2
Shipping Labels: Nonflammable Gas

TECHNICAL INFORMATION

Molecular Weight: 39.948
Specific Volume: 9.67 ft³/lb.
CAS Registry: 7440-37-1 (R)
Safety Data Sheet Reference: Liquid Argon

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by volume (unless otherwise specified) ²						
					O ₂	H ₂ O	THC (as CH ₄)	N ₂	N ₂ +O ₂	CO ₂	CO
Ultra High Purity	5.0	99.999%	UHP	SG ARUHP-	3	3	0.5				
High Purity	4.8	99.998%	HP	SG ARHP-	5	5					

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below.

² Specifications are typical results and are subject to change without notice.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume ³ ft ³	Pressure ⁴ (PSIG)	Valve Connection CGA	Gross Weight (lbs.)
Cryogenic Liquid Containers					
230 liter	230	6073	22 / 230 / 350	DUAL 580 & 295	998
180 liter	180	4961	22 / 230 / 350	DUAL 580 & 295	787
160 liter	160	4448	22 / 230 / 350	DUAL 580 & 295	717

Notes:

³ This product is sold by the cylinder. Fill volumes will vary depending on pressure setting and may vary slightly depending on the cylinder manufacturer's specifications. Volumes noted are based on 230psig safety.

⁴ Choose pressure setting. 22 psig is for liquid phase and 230 or 350 is for gas phase.

Also available in other packaging and features such as:

- Micro Bulk
- Bulk
- Telemetry service

Contact your WestAir representative about equipment recommendations for this product.



BORON TRICHLORIDE



Colorless, toxic, corrosive, liquefied gas which fumes in the presence of moist air and has a choking odor.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Boron Trichloride
I.D. Number: UN1741
Hazard Class: 2.3 (8)
Shipping Labels: Inhalation Hazard, Corrosive

TECHNICAL INFORMATION

Molecular Weight: 117.17
Specific Volume: 3.3 ft³/lb.
CAS Registry: 10294-34-5
Safety Data Sheet Reference: Boron Trichloride

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume (unless otherwise specified) ²								
					O ₂	N ₂	CO ₂	CO	CH ₄	Cl ₂	COCl ₂	HCl	SiCl ₄
Electronic Ultra Pure	5.5	99.9995%	EUP	SG BTCEUP-	1	1	0.5	0.3	0.5	0.1	0.1	1	2
Electronic High Purity	5.0	99.999%	EHP	SG BTCEHP-	1	4	2	0.5	0.5	1			
Ultra Pure	4.5	99.995%	UP	SG BTCUP-	9	30	5	3	1	1			
CP Grade	3.0	99.9%	CP	SG BTCCP-	Sum of total impurities < 1,000 ppm								

Notes: ¹ Complete catalog number by selecting cylinder size code using chart below.

² Specifications are typical results and are subject to change without notice. Product sold on the basis of total impurities. Individual impurities may vary slightly.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume lbs. ³	Pressure (PSIG) @ 70° F.	Valve Connection CGA DISS	Gross Weight (lbs.)
High Pressure Carbon Steel Cylinders					
200	K ⁴	110	4.4	CGA 660	DISS 634
10	2L	5	4.4	CGA 660	DISS 634

Notes: ³ This product is sold by the cylinder. Fill volumes are approximate. May vary slightly depending on cylinder manufacturer.

⁴ Short fill options available such as: 100lbs, 70lbs and 40lbs. Pressure varies depending on short filled volumes.

Contact your WestAir representative about equipment recommendations for this product.



BORON TRIFLUORIDE



A colorless, toxic gas. It is shipped as a compressed gas.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Boron Trifluoride
I.D. Number: UN1008
Hazard Class: 2.3 (8)
Shipping Labels: Inhalation Hazard, Corrosive

TECHNICAL INFORMATION

Molecular Weight: 67.81
Specific Volume: 5.6 ft³/lb.
CAS Registry: 7637-07-02
Safety Data Sheet Reference: Boron Trifluoride

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume (unless otherwise specified) ²			
					O ₂ +N ₂ +Ar	CO ₂	SO ₂	Total Impurities
Electronic Ultra Pure	4.5	99.995%	EUP	SG BTFEUP-	10	10	10	30

Notes: ¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Specifications are typical results and are subject to change without notice. Product sold on the basis of total impurities. Individual impurities may vary slightly.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code ³	Volume lbs. ⁴	Pressure (PSIG) @ 70° F.	Valve Connection CGA / DISS	Gross Weight (lbs.)
High Pressure Carbon Steel Cylinders					
10	2L	0.88	700	330 SS / DISS 642	10
10	2L	0.39	400	330 SS / DISS 642	9
Disposable / Non-Refillable Cylinders					
Lecture Bottle	LB	0.08	700	180	7

Notes: ³ Add the letter D at end of cylinder code for DISS valve, except for lecture bottles.

⁴ This product is sold by the cylinder. Fill volumes are approximate. May vary slightly depending on cylinder manufacturer.

Contact your WestAir representative about equipment recommendations for this product.



CARBON MONOXIDE CO

Poisonous, flammable, odorless, high pressure gas.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Carbon Monoxide, compressed
Inhalation Hazard Zone D
I.D. Number: UN1016
Hazard Class: 2.3 (2.1)
Shipping Labels: Inhalation Hazard, Flammable gas

TECHNICAL INFORMATION

Molecular Weight: 28.01
Specific Volume: 13.7 ft³/lb.
CAS Registry 630-08-0
Safety Data Sheet Reference: Carbon Monoxide

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by volume (unless otherwise specified) ²					
					N ₂	O ₂	CO ₂	THC (as CH ₄)	H ₂ O	MAXIMUM TOTAL IMPURITIES
Electronic Process	5.0	99.999%	EP	SG COEP-	5	2	2	2	2	< 10
Research	4.0	99.99%	RES	SG CORES-	80	5	10	10	4	< 100
Ultra High Purity	3.0	99.9%	UHP	SG COUHP-	900	10	50	50	5	< 1000
Chemically Pure	2.5	99.5%	CP	SG COCP-	4500	10	100	100	5	< 5000
Technical Grade	1.85	98.5%	T	SG COT-					10	< 1%

Notes: ¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Specifications are typical results and are subject to change without notice. Product sold on the basis of total impurities. Individual impurities may vary slightly.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume ³ ft ³	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
High Pressure Carbon Steel Cylinders					
300	T	238	1650	350	161
200	K	175	1650	350	148
80	Q	66	1650	350	70
35	G	30	1650	350	31
High Pressure Aluminum Cylinders					
300A	TA	238	2000	350	107
150A	DA	141	2000	350	59
80A	QA	75	2000	350	36
33A	GA	36	2000	350	17
Disposable / Non-Refillable Cylinders					
Lecture Bottle	LBx	2	1800	170	4
Notes: ³ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on cylinder manufacturer.					

Contact your WestAir representative about equipment recommendations for this product.



CHLORINE

Cl₂

Greenish yellow, highly toxic, corrosive, oxidizing, liquefied gas with a suffocating and irritating odor.

SHIPPING INFORMATION			TECHNICAL INFORMATION		
D.O.T. Proper Shipping Name:	Chlorine		Molecular Weight:	70.91 g/mol	
I.D. Number:	UN1017		Specific Volume:	5.4 ft ³ /lb.	
Hazard Class:	2.3 (5.1) (8)		CAS Registry	7782-50-5	
Shipping Labels:	Inhalation Hazard, Oxidizer, Corrosive		Safety Data Sheet Reference:	Chlorine	
PRODUCT GRADE SPECIFICATIONS					
Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume ² (unless otherwise specified)
					Sum of all Impurities ³
Ultra Plus	4.0	99.99%	UP	SG CHLUP-	< 111 PPM
Ultra High Purity	3.0	99.9%	UHP	SG CHLUHP-	< 250 PPM
Chemically Pure	2.5	99.5%	CP	SG CHLCP-	< 0.5%
CAUTION: NOT FOR USE AS PESTICIDE, DISINFECTANT, SLIMICIDE OR ALGAECIDE Regulators for this product is gas phase use only.					
Notes: ¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP". Liquid Phase Analysis. ² Specifications are typical results and are subject to change without notice. ³ A complete list of impurities is available upon request. A certification will be provided upon request for a nominal fee.					

CYLINDER INFORMATION					
Cylinder Size	Cylinder Code	Volume lbs. ⁴	Pressure (PSIG) @ 70° F.	Valve Connection CGA ⁵	Gross Weight (lbs.)
High Pressure Steel Cylinders					
200	K	100	85	660/728	251
80	Q	40	85	660	105
35	G	19	85	660	50
Low Pressure Steel Cylinders					
LP25	CLP	150	85	660	240
Disposable / Portable Cylinders					
Lecture Bottle	LB660	0.5 lbs	85	660	7

⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on cylinder manufacturer's specifications.

⁵ A full length syphon tube for liquid withdrawal is available upon request only, except for lecture bottles.

Ton Containers of Chlorine is available upon request.

Contact your WestAir representative about equipment recommendations for this product.



cis-2-BUTENE C₄H₈

Colorless, flammable, liquefied gas with a mildly aromatic odor.

SHIPPING INFORMATION		TECHNICAL INFORMATION			
D.O.T. Proper Shipping Name:	Petroleum Gases, Liquefied	Molecular Weight:	56.11 g/mol		
I.D. Number:	UN1075	Specific Volume:	6.9 ft ³ /lb.		
Hazard Class:	2.1	CAS Registry	590-18-1		
Shipping Labels:	Flammable gas	Safety Data Sheet Reference:	cis-2-Butene		

PRODUCT GRADE SPECIFICATIONS					
Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume ² <i>(unless otherwise specified)</i>
					Sum of all Impurities ³
Instrument	2.5	99.5%	INS	SG C2BINS-	< 0.5 %
Chemical Pure	2.0	99%	CP	SG C2BCP-	< 1%

Notes:

¹ Complete catalog number by selecting cylinder size code using chart below.

² Liquid Phase Analysis. Specifications are typical results and are subject to change without notice.

³ A complete list of impurities is available upon request.

CYLINDER INFORMATION					
Cylinder Size	Cylinder Size Code	Volume ⁴ lbs.	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
Low Pressure Steel Cylinders					
350	LP25	120	13	510	199
LP5	LP5	20	13	510	40

Notes:

⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

Contact your WestAir representative about equipment recommendations for this product.



DEUTERIUM D₂

Colorless, odorless, flammable gas.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Deuterium, compressed
I.D. Number: UN1957
Hazard Class: 2.1
Shipping Labels: Flammable Gas

TECHNICAL INFORMATION

Molecular Weight: 4.032 g/mol
Specific Volume: 95.9 ft³/lb.
CAS Registry: 7782-39-0
Safety Data Sheet Reference: Deuterium

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by volume <i>(unless otherwise specified)</i> ²
					Sum of all Impurities ³
Research Isotopic Enrichment 99.8%	5.0	99.999%	RES	SG DERES-	< 15 PPM ²
Ultra High Purity Isotopic Enrichment 99.7%	4.5	99.995%	UHP	SG DEUHP-	< 25 PPM ²

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Specifications are typical results and are subject to change without notice. Chemical purity excludes Hydrogen and Deuterium Hydride. A certification will be provided upon request for a nominal fee.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume ³ ft ³	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
Carbon Steel Cylinders					
300	T	251	2500	350	147
200	K	212	1760	350	134
80	Q	35	890	350	75
35	G	18	1090	350	39
Disposable Non-Refillable Cylinders					
Lecture Bottle	LB*	50 Liters	1740	*170 or *350	4

Notes:

³ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

Contact your WestAir representative about equipment recommendations for this product.



ETHANE C₂H₆

Colorless, odorless, flammable liquefied gas.

SHIPPING INFORMATION		TECHNICAL INFORMATION			
D.O.T. Proper Shipping Name:	Ethane	Molecular Weight:	30.07		
I.D. Number:	UN1035	Specific Volume:	12.8 ft ³ /lb.		
Hazard Class:	2.1	CAS Registry	74-84-0		
Shipping Labels:	Flammable gas	Safety Data Sheet Reference:	Ethane		

PRODUCT GRADE SPECIFICATIONS					
Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume (unless otherwise specified) ²
					MAXIMUM TOTAL IMPURITIES ³
Electronic Process	5.5	99.9995%	EP	SG ETEP-	< 5
Research	5.0	99.999%	RES	SG ETRES-	< 10
Ultra High Purity	4.0	99.99%	UHP	SG ETUHP-	<100
Polymer Plus	3.0	99.9%	PP	SG ETTP-	< 0.05%
Instrument	2.5	99.5%	INS	SG ETINS-	< 0.5%
Chemically Pure	2.0	99%	CP	SG ETCP-	< 1%

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Liquid phase analysis. Specifications are typical results and are subject to change without notice.

³ Product sold on the basis of total impurities. Individual impurities may vary slightly.

CYLINDER INFORMATION					
Cylinder Size	Cylinder Size Code	Volume ⁴ Lbs.	Pressure (PSIG) ⁵ @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
High Pressure Carbon Steel Cylinders					
300	T	37	543	350	206
200	K	32	543	350	183
80	Q	12	543	350	83
35	G	5	543	350	38
Disposable Non-Refillable Cylinders					
Lecture Bottle	LB*	227 grams	543	*170 or 350	4

Notes:

⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

⁵ Ethane is shipped as a liquefied gas at its vapor pressure of 543 psig @ 70 degrees Fahrenheit. Ethane may also be offered as a cryogenic refrigerant liquid at -128 degrees Fahrenheit. Please ask your WestAir representative for more information.

Contact your WestAir representative about equipment recommendations for this product.



ETHYLENE C₂H₄

Colorless, flammable gas with a faint sweet and musty odor.

SHIPPING INFORMATION		TECHNICAL INFORMATION			
D.O.T. Proper Shipping Name:	Ethylene	Molecular Weight:	28.064		
I.D. Number:	UN1962	Specific Volume:	13.7 ft ³ /lb.		
Hazard Class:	2.1	CAS Registry	74-85-1		
Shipping Labels:	Flammable gas	Safety Data Sheet Reference:	Ethylene		

PRODUCT GRADE SPECIFICATIONS					
Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume ² (unless otherwise specified)
Electronic Process	5.5	99.9995%	EP	SG EYEP-	< 5
Research	5.0	99.999%	RES	SG EYRES-	< 10
Ultra Plus	4.0	99.99%	UP	SG EYUP-	< 100
Polymer	3.0	99.9%	P	SG EYP-	< 0.1%
Chemically Pure	2.5	99.5%	CP	SG EYCP-	< 0.5%

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Liquid phase analysis. Specifications are typical results and are subject to change without notice.

³ Product sold on the basis of total impurities. Individual impurities may vary slightly.

CYLINDER INFORMATION					
Cylinder Size	Cylinder Size Code ³	Volume lbs. ⁴	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
High Pressure Carbon Steel Cylinders					
300	T	37	1200	350	181
200	K	30	1200	350	165
80	Q	11	1200	350	76
35	G	4	1200	350	33
Non-Refillable / Disposable Lecture Bottle					
Lecture Bottle	LB*	227 Grams	1200	170 or 350	5

Notes:

³ Add a "S" for siphon tube at end of cylinder size code. Ethylene is shipped as a compressed gas under high pressure, but may also be offered as a liquid depending on cylinder pressure and ambient temperature. Ethylene may also be shipped as a cryogenic liquid at -154.8 F. Please contact your WestAir representative for more information.

⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

Contact your WestAir representative about equipment recommendations for this product.



HALOCARBON 14 CF₄

[Synonyms: Tetrafluoromethane; Carbon Tetrafluoride]

Colorless, nonflammable gas.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Tetrafluoromethane
I.D. Number: UN1982
Hazard Class: 2.2
Shipping Labels: Nonflammable Gas

TECHNICAL INFORMATION

Molecular Weight: 88.01 g/mol
Specific Volume: 4.4 ft³/lb.
CAS Registry: 75-73-0
Safety Data Sheet Reference: Halocarbon 14

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume ² <i>(unless otherwise specified)</i>
					Sum of all Impurities ³
Semiconductor	5.0	99.999%	SC	SG TESC-	< 10 PPM

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Specifications are typical results and are subject to change without notice.

³ Product sold on the basis of total impurities. Individual impurities may vary slightly.

CYLINDER INFORMATION

Cylinder Size	Cylinder Code	Volume lbs. ⁴	Pressure (PSIG) @ 70° F.	Valve Connection CGA ⁵	Gross Weight (lbs.)
High Pressure Steel Cylinders					
300	T	78	2000	580	239
200	K	70	2000	580	221
80	Q	25	2000	580	81
35	G	10	2000	580	43
Disposable Non-Refillable Cylinders					
Lecture Bottle	LB*	227 grams	1800	*170 or 580	7

Notes:

⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

⁵ Common CGA connection in a standard high pressure rental cylinder is a CGA 580, but also available in a CGA 320 upon request only. Except lecture bottles.

Contact your WestAir representative about equipment recommendations for this product.



HALOCARBON 23

[Synonyms: Trifluoromethane; Fluoroform]



Colorless, nonflammable gas, liquefied gas with a slight ethereal odor.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Trifluoromethane
I.D. Number: UN1984
Hazard Class: 2.2
Shipping Labels: Nonflammable Gas

TECHNICAL INFORMATION

Molecular Weight: 70.02 g/mol
Specific Volume: 5.59 ft³/lb.
CAS Registry: 75-46-7
Safety Data Sheet Reference: Halocarbon 23

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume ² <i>(unless otherwise specified)</i>
					Sum of all Impurities ³
Semiconductor	5.0	99.999%	SC	SG R23SC-	< 10 PPM

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Specifications are typical results and are subject to change without notice.

³ Product sold on the basis of total impurities. Individual impurities may vary slightly.

CYLINDER INFORMATION

Cylinder Size	Cylinder Code	Volume lbs. ⁴	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
High Pressure Steel Cylinders					
200	K	70	635	660	221
80	Q	20	635	660	76
35	G	9	635	660	42
Disposable / Portable Cylinders					
Lecture Bottle	LB*	227 grams	635	*170 or *660	7

Notes:

⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

Contact your WestAir representative about equipment recommendations for this product.



HALOCARBON 218

[Synonyms: Octafluoropropane]

C₃F₈

Colorless, tasteless, nonflammable, shipped as a liquefied gas under its own vapor with a faintly sweet odor.

SHIPPING INFORMATION		TECHNICAL INFORMATION		
D.O.T. Proper Shipping Name:	Octafluoropropane	Molecular Weight:	188.0193 g/mol	
I.D. Number:	UN2424	Specific Volume:	2.06 ft ³ /lb.	
Hazard Class:	2.2	CAS Registry	76-19-7	
Shipping Labels:	Nonflammable Gas	Safety Data Sheet Reference:	Halocarbon 218	

PRODUCT GRADE SPECIFICATIONS					
Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume ² (unless otherwise specified)
					Sum of all Impurities ³
Research	5.0	99.999%	RES	SG R218RES-	< 15 PPM

Notes: ¹ Complete the catalog number by selecting cylinder size code using chart below.
² Specifications are typical results and are subject to change without notice.
³ A complete list of impurities is available upon request. A certification will be provided upon request for a nominal fee.

CYLINDER INFORMATION					
Cylinder Size	Cylinder Code	Volume lbs. ⁴	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
High Pressure Steel Cylinders					
200	K	88	100	660	239
Low Pressure Steel Cylinders					
Jumbo	HTN	1100	100	660	1500

⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on cylinder manufacturer's specifications.

Contact your WestAir representative about equipment recommendations for this product.



HALOCARBON C318

[Synonyms: Octafluorocyclobutane; Perfluorocyclobutane]

C₄F₈

Colorless, odorless, tasteless, nonflammable, shipped as a liquefied gas under its own vapor.

SHIPPING INFORMATION		TECHNICAL INFORMATION			
D.O.T. Proper Shipping Name:	Octafluorocyclobutane	Molecular Weight:	200.031 g/mol		
I.D. Number:	UN1976	Specific Volume:	1.85 ft ³ /lb.		
Hazard Class:	2.2	CAS Registry	115-25-3		
Shipping Labels:	Nonflammable Gas	Safety Data Sheet Reference:	Halocarbon C318		

PRODUCT GRADE SPECIFICATIONS					
Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume (unless otherwise specified) ²
					Sum of total Impurities ³
Research	5.0	99.999%	R	SG RC318R-	< 15 PPM

Notes: ¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".
² Specifications are typical results and are subject to change without notice.
³ A complete list of impurities is available upon request. A certification will be provided upon request for a nominal fee.

CYLINDER INFORMATION					
Cylinder Size	Cylinder Size Code	Volume lbs. ⁴	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
High Pressure Steel Cylinders					
200	K	100	25	660	251
80	Q	33	25	660	104
40	G40	15	25	660	48
Low Pressure Steel Cylinders					
100#	LP25	100	25	660	177
Disposable / Portable Cylinders					
Lecture Bottle	LB	1	25	170	7

Notes:⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on cylinder manufacturer's specifications.

Contact your WestAir representative about equipment recommendations for this product.



HELIUM

He

Colorless, odorless, nonflammable inert gas.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Helium, compressed
 I.D. Number: UN1046
 Hazard Class: 2.2
 Shipping Labels: Nonflammable Gas

TECHNICAL INFORMATION

Molecular Weight: 4.0026
 Specific Volume: 96.6 ft³/lb.
 CAS Registry: 7440-59-7
 Safety Data Sheet Reference: Helium

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by volume (unless otherwise specified) ²				
					O ₂	H ₂ O	THC (as CH ₄)	CO+CO ₂	N ₂
Research	6.0	99.9999%	RES	SG HERES-	0.1	0.2	0.1	0.2	0.5
Ultra Carrier	5.5	99.9995%	UC	SG HEUC-	1	1	0.5	1	2
Lab & Spec	5.5	99.9995%	LSG	SG HELSG-	1	1	0.5		
Ultra High Purity	5.0	99.999%	UHP	SG HEUHP-	2	2	0.5	1	
Laser Shield Ultra	5.0	99.999%	LSU	SG HELSU-	1	2	0.5		
Laser Shield	4.8	99.998%	LS	SG HELS-	3	3	1		
High Purity	4.5	99.995%	HP	SG HEHP-	5	5			

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Specifications are typical results and are subject to change without notice.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume ³ ft ³	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
Carbon Steel Cylinders					
6K ⁴	6K	496	6000	677	309
3K ⁴	3K	327	3500	680	193
300 ⁵	T	264	2400	580	166
200 ⁵	K	199	2015	580	151
80	Q	68	2015	580	71
35	G	32	2015	580	30
Aluminum Cylinders					
150A	DA	135	2015	580	59
80A	QA	78	2216	580	37
33A	GA	30	2216	580	11
Disposable Non-Refillable Cylinders					
Lecture Bottle	LBX	2	1800	170	4
Notes:			Also available in other packaging such as:		
³ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.			<ul style="list-style-type: none"> • ⁵ High capacity cylinders with special pressure ratings in singles and packs • 6Packs & 15Packs in select sizes and grades • Refer to Cryogenic Section for Liquid Helium • Bulk tube trailers 		
⁴ Only available in UHP grades or lower.					

Contact your WestAir representative about equipment recommendations for this product.



HELIUM He

CRYOGENIC LIQUID

Colorless, odorless, nonflammable cryogenic liquid.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Helium, Refrigerated Liquid
I.D. Number: UN1963
Hazard Class: 2.2
Shipping Labels: Nonflammable Gas

TECHNICAL INFORMATION

Molecular Weight: 4.0026
Specific Volume: 96.6 ft³/lb.
CAS Registry: 7440-59-7 (R)
Safety Data Sheet Reference: Liquid Helium

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by volume (unless otherwise specified) ²			
					O ₂	H ₂ O	THC (as CH ₄)	CO+CO ₂
Ultra High Purity	5.0	99.999%	UHPLIQ	SG HEUHPLIQ-	2	2	0.5	1
Industrial	N/A	N/A	N/A	HE LIQ-			N/A	

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below.

² Specifications are typical results and are subject to change without notice.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume ³ liters	Pressure (PSIG)	Connection for transfer tube ⁴	Approximate Gross Weight (lbs.)
Cryogenic Liquid Containers					
60 liter	60	60	0.5	Coupling for 1/2"	208
100 liter	100	100	0.5	Coupling for 1/2"	237
250 liter	250	250	0.5	Coupling for 3/4"	409
500 liter	500	500	0.5	Coupling for 3/4"	800

Notes:

³ This product is sold by the container. Fill volumes will vary depending on pressure setting and may vary slightly depending on the cylinder manufacturer's specifications. Due to the nature of this product, this product must be stored properly and used quickly. Rates of vaporization vary, depending upon the design of the container and the volume of the stored product.

⁴ Goddard fitting to reduce to 1/2" or 3/8" is not included. Contact WestAir to purchase necessary fittings.

Contact your WestAir representative about equipment recommendations for this product.



HYDROGEN H₂

Colorless, odorless, flammable gas.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Hydrogen, compressed
I.D. Number: UN1049
Hazard Class: 2.1
Shipping Labels: Flammable Gas

TECHNICAL INFORMATION

Molecular Weight: 2.016
Specific Volume: 191.7 ft³/lb.
CAS Registry: 7333-74-0
Safety Data Sheet Reference: Hydrogen

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by volume (unless otherwise specified) ²						
					O ₂	H ₂ O	THC (as CH ₄)	CO+CO ₂	N ₂	CO	CO ₂
Research	6.0	99.9999%	RES	SG HYRES-	0.2	0.5	0.1	0.1	0.3		
Ultra Carrier	5.5	99.9995%	UC	SG HYUC-	0.5	2	0.2		2	0.2	0.1
Lab & Spec	5.5	99.9995%	LSG	SG HYLSG-	1	1	0.5	1	3		
Ultra High Purity	5.0	99.999%	UHP	SG HYUHP-	2	3	0.5		8		
High Purity	4.5	99.995%	HP	SG HYHP-	5	5					

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Specifications are typical results and are subject to change without notice.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume ³ ft ³	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
Carbon Steel Cylinders					
300	T	258	2400	350	145
200	K	193	2000	350	136
80	Q	66	2000	350	65
35	G	32	2000	350	30
Disposable Non-Refillable Cylinders					
Lecture Bottle	LB*	2	1800	*170 or *350	4
Notes: ³ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.				Also available in other packaging such as:	
				<ul style="list-style-type: none">• 6Packs & 15Packs in select sizes and grades.• Bulk & Tube Trailers available.	

Contact your WestAir representative about equipment recommendations for this product.



HYDROGEN BROMIDE

HBr

Odorless, toxic, corrosive, nonflammable, liquefied gas with a very irritating odor..

SHIPPING INFORMATION		TECHNICAL INFORMATION	
D.O.T. Proper Shipping Name:	Hydrogen Bromide, Anhydrous, Inhalation Hazard Zone C	Molecular Weight:	80.912
I.D. Number:	UN1048	Specific Volume:	4.8 ft ³ /lb.
Hazard Class:	2.3 (8)	CAS Registry	10035-10-6
Shipping Labels:	Poison Gas, Inhalation Hazard (Corrosive)	Safety Data Sheet Reference:	Hydrogen Bromide

PRODUCT GRADE SPECIFICATIONS										
Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by volume (unless otherwise specified) ²					
					H2O	THC (as CH4)	CO	CO2	N2	O2
ULSI	5.0	99.999%	ULSI	SG HBRULSI-	4	1.5	0.5	3	3	1
Prepurified	2.8	99.8%	PP	SG HBRPP-	Total impurities < 0.2%					

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below.

² Specifications are typical results and are subject to change without notice.

CYLINDER INFORMATION					
Cylinder Size	Cylinder Size Code	Volume ⁴ Lbs.	Pressure (PSIG)	Valve Connection ⁵	Gross Weight (lbs.)
High Pressure Steel Cylinders					
200 ³	K	130	320	CGA 330 / DISS634	281
Portable & Nonrefillable Steel Cylinders					
Lecture Bottle	LB180	1	320	180	5

Notes:

³ Only available in a special treated rental cylinder.

⁴ This product is sold by the cylinder. Fill volumes will vary depending on pressure setting and may vary slightly depending on the cylinder manufacturer's specifications.

⁵ Hastelloy

Equipment Recommendations

- Valve panels
- Regulators
- Gas Cabinet
- Flow control

Contact your WestAir representative about equipment recommendations for this product.



HYDROGEN CHLORIDE

[Synonyms: Anhydrous Hydrochloric Acid]

HCl

*Colorless, toxic, nonflammable, acidic, liquefied gas with a pungent odor.
Shipped as a liquid under its own vapor pressure.*

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Hydrogen Chloride, Anhydrous
I.D. Number: UN1050
Hazard Class: 2.3 (8)
Shipping Labels: Toxic Inhalation Hazard, Corrosive

TECHNICAL INFORMATION

Molecular Weight: 36.461
Specific Volume: 10.6 ft³/lb.
CAS Registry: 7647-01-0
Safety Data Sheet Reference: Hydrogen Chloride

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume (unless otherwise specified) ²					
					O ₂ +Ar	H ₂ O	THC (as CH ₄)	N ₂	CO	CO ₂
Semiconductor	5.0	99.999%	SC	SG HCLSC-	1	1	1	2	0.5	2

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Specifications are typical results and are subject to change without notice. Product sold on the basis of total impurities. Individual impurities may vary slightly.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume lbs. ³	Pressure (PSIG) @ 70° F.	Valve Connection CGA ⁴	Gross Weight (lbs.)
High Pressure Carbon Steel Cylinders					
200	K	60	613	330 ASB	211
35	G	9	613	330 ASB	42

Disposable Non-Refillable Cylinders

Lecture Bottle	LB*	227 Grams	613	*330 ASB	7
----------------	-----	-----------	-----	----------	---

Notes: ³ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

⁴ CGA 330 ASB (Aluminum Silicon Bronze)

Contact your WestAir representative about equipment recommendations for this product.



iso-BUTANE i-C₄H₁₀

Colorless, flammable, liquefied gas with a mildly aromatic odor.

SHIPPING INFORMATION					TECHNICAL INFORMATION	
D.O.T. Proper Shipping Name:	Isobutane				Molecular Weight:	58.124
I.D. Number:	UN1969				Specific Volume:	6.5 ft ³ /lb.
Hazard Class:	2.1				CAS Registry	75-28-5
Shipping Labels:	Flammable gas				Safety Data Sheet Reference:	Isobutane

PRODUCT GRADE SPECIFICATIONS					
Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume ² <i>(unless otherwise specified)</i>
					Sum of all Impurities ³
Research	4.0	99.99%	RES	SG IBRES-	< 100 PPM
Ultra High Purity	3.0	99.9%	UHP	SG IBUHP-	<1000 PPM
Instrument	2.5	99.5%	INS	SG IBINS-	< 0.5 %
UL Class, R600a Refrigerant	2.5	99.5%	ULC	SG IBULC-	< 0.5 %
Chemical Pure	2.0	99%	CP	SG IBCP-	< 1%

Notes:

¹ Complete catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Liquid Phase Analysis. Specifications are typical results and are subject to change without notice.

³ A complete list of impurities is available upon request.

CYLINDER INFORMATION					
Cylinder Size	Cylinder Size Code	Volume ⁴ lbs.	Pressure (PSIG) @ 70° F.	Valve Connection ⁵ CGA	Gross Weight (lbs.)
Low Pressure Steel Cylinders					
Jumbo	HTN	490	31	Dual 510 & 555	824
350	LP25	116	31	510 / 555	195
LP5	LP5	23	31	510 / 555	4
Disposable Non-Refillable Cylinders					
Lecture Bottle	LB*	0.375	31	*170	5

Notes:

⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

⁵ Siphon tube with a CGA 555 for liquid withdrawal is available upon request. Add "S" at end of cylinder size code.

Contact your WestAir representative about equipment recommendations for this product.



ISOBUTYLENE i-C₄H₈

Colorless, flammable, liquefied gas with a mildly aromatic odor.

SHIPPING INFORMATION					TECHNICAL INFORMATION	
D.O.T. Proper Shipping Name:	Isobutylene				Molecular Weight:	56.11
I.D. Number:	UN1055				Specific Volume:	6.7 ft ³ /lb.
Hazard Class:	2.1				CAS Registry	115-11-7
Shipping Labels:	Flammable gas				Safety Data Sheet Reference:	Isobutylene

PRODUCT GRADE SPECIFICATIONS					
Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume ² <i>(unless otherwise specified)</i>
					Sum of all Impurities ³
Research	4.0	99.99%	RES	SG IYRES-	< 100 PPM
Ultra High Purity	3.0	99.9%	UHP	SG IYUHP-	<1000 PPM
Instrument	2.5	99.5%	INS	SG IYINS-	< 0.5 %
Chemical Pure	2.0	99%	CP	SG IYCP-	< 1%

Notes:

¹ Complete catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Liquid Phase Analysis. Specifications are typical results and are subject to change without notice.

³ A complete list of impurities is available upon request.

CYLINDER INFORMATION					
Cylinder Size	Cylinder Size Code	Volume ⁴ lbs.	Pressure (PSIG) @ 70° F.	Valve Connection ⁵ CGA	Gross Weight (lbs.)
Low Pressure Steel Cylinders					
Jumbo	HTN	530	24	Dual 510 & 555	864
350	LP25	126	24	510 / 555	205
LP5	LP5	25	24	510 / 555	42
Disposable Non-Refillable Cylinders					
Lecture Bottle	LB*	0.375	24	*170	5

Notes:

⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

⁵ Siphon tube with a CGA 555 for liquid withdrawal is available upon request. Add "S" at end of cylinder size code.

Contact your WestAir representative about equipment recommendations for this product.



KRYPTON

Kr

Colorless, odorless, nonflammable inert gas.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Krypton, compressed
 I.D. Number: UN1056
 Hazard Class: 2.2
 Shipping Labels: Nonflammable Gas

TECHNICAL INFORMATION

Molecular Weight: 83.80
 Specific Volume: 4.61 ft³/lb.
 CAS Registry: 7439-90-9
 Safety Data Sheet Reference: Krypton

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume ² <i>(unless otherwise specified)</i>
					Sum of all Impurities ³
Research	5.0	99.999%	RES	SG KRRES-	< 10 PPM

Notes:

¹ Complete catalog number by selecting cylinder size code using chart below.

² Specifications are typical results and are subject to change without notice. Product sold on the basis of total impurities. Individual impurities may vary slightly.

³ A complete list of impurities is available upon request.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume Liters	Pressure (PSIG) ⁶ @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
High Pressure Steel Cylinders					
300 ⁴	T	10,000	2218	580	244
200 ⁴	K	7,000	1790	580	209
80 ⁵	Q	2,000	1550	580	88
Disposable Non-Refillable Cylinders⁵					
D4	D4	300	1460	580	15
D8	D8	100	1300	580	12
Lecture Bottle	LB50	50	1120	580	12
Lecture Bottle	LB25	25	646	110	6

Notes:

⁴ This product is sold by the liter in larger cylinder sizes 300 and 200.

⁵ This product in smaller cylinders are sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

⁶ Cylinder fill pressures are approximate and can vary as this product is filled gravimetrically.

Contact your WestAir representative about equipment recommendations for this product.



METHANE CH₄

Colorless, odorless, flammable compressed gas.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Methane, compressed
 I.D. Number: UN1971
 Hazard Class: 2.1
 Shipping Labels: Flammable gas

TECHNICAL INFORMATION

Molecular Weight: 28.064
 Specific Volume: 23.7 ft³/lb.
 CAS Registry: 74-82-8
 Safety Data Sheet Reference: Methane

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume (unless otherwise specified) ²
					MAXIMUM TOTAL IMPURITIES ³
Research	5.0	99.999%	RES	SG MERES-	< 10
Ultra Plus	4.0	99.99%	UP	SG MEUP-	< 100
Chemically Pure	2.5	99.5%	CP	SG MECP-	< 0.5%
Commercial ⁴		n/a	COM	SG MECOM-	CH ₄ 98% ⁴
CNG (Odorized) ^{4 5}		n/a	CNG	SG MECNG-	CH ₄ 93% ⁴

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Specifications are typical results and are subject to change without notice.

³ Product sold on the basis of total impurities. Individual impurities may vary slightly.

⁴ Commercial and CNG grade products are industrial grade products which there is no guarantee in minimum purity. Percentage of CH₄ is approximate.

⁵ CNG grade methane is the only product that is Odorized. All other grades above CNG grade are Unodorized.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume scf ⁶	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
High Pressure Carbon Steel Cylinders					
300	T	360	2400	350	176
200	K	300	2000	350	161
80	Q	100	2000	350	81
35	G	40	2000	350	43
Non-Refillable / Disposable Lecture Bottle					
Lecture Bottle	LB170	2	1800	170	4.5
Notes:					
⁶ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.					

Contact your WestAir representative about equipment recommendations for this product.



n-BUTANE C₄H₁₀

Colorless, flammable, liquefied gas with a mildly aromatic odor.

SHIPPING INFORMATION					TECHNICAL INFORMATION			
D.O.T. Proper Shipping Name:	Butane				Molecular Weight:	58.124		
I.D. Number:	UN1011				Specific Volume:	6.4 ft ³ /lb.		
Hazard Class:	2.1				CAS Registry	106-97-8		
Shipping Labels:	Flammable gas				Safety Data Sheet Reference:	n-Butane		
PRODUCT GRADE SPECIFICATIONS								
Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume ² <i>(unless otherwise specified)</i>			
					Sum of all Impurities ³			
Research	4.0	99.99%	RES	SG NBRES-	< 100 PPM			
Instrument	2.5	99.5%	INS	SG NBINS-	<5000 PPM			
Chemical Pure	2.0	99%	CP	SG NBCP-	< 1 %			
Notes:								
¹ Complete catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".								
² Liquid Phase Analysis. Specifications are typical results and are subject to change without notice.								
³ A complete list of impurities is available upon request.								

CYLINDER INFORMATION					
Cylinder Size	Cylinder Size Code	Volume ⁴ lbs.	Pressure (PSIG) @ 70° F.	Valve Connection ⁵ CGA	Gross Weight (lbs.)
Low Pressure Steel Cylinders					
Jumbo	HTN	510	16.3	Dual 510 & 555	825
350	LP25	120	16.3	510 / 555	199
LP5	LP5	24	16.3	510 / 555	41
Disposable Non-Refillable Cylinders					
Lecture Bottle	LB*	0.375	16.3	*170	5
Notes:					
⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.					
⁵ Siphon tube with a CGA 555 for liquid withdrawal is available upon request. Add "S" at end of cylinder size code.					

Contact your WestAir representative about equipment recommendations for this product.



NEON Ne

Colorless, odorless, nonflammable inert gas.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Neon, compressed
I.D. Number: UN1065
Hazard Class: 2.2
Shipping Labels: Nonflammable Gas

TECHNICAL INFORMATION

Molecular Weight: 20.183
Specific Volume: 19.21 ft³/lb.
CAS Registry: 7440-01-9
Safety Data Sheet Reference: NEON

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume ² <i>(unless otherwise specified)</i>
					Sum of all Impurities ³
Research	5.0	99.999%	RES	SG NERES-	< 10 PPM

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² All specifications refer to "Typical Analysis" of the usual product composition and should not be interpreted as the individual component specifications. Guarantee is for Total Purity.

³ Specifications are typical results and are subject to change without notice. A complete list of impurities is available upon request.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume Liters	Approximate Pressure (PSIG) ⁶ @ 70° F.	Valve Connection CGA or DISS	Gross Weight (lbs.)
High Pressure Steel Cylinders					
300 ⁴	T	7,500	2371	580 or 178	275
200 ⁴	K	5,000	1745	580 or 178	242
80 ⁵	Q	1,500	1545	580 or 178	95
35 ⁵	G	500	700	580 or 178	39
Disposable Non-Refillable Cylinders⁵					
DC	DC	500	1800	580	20
DB	DB	300	1930	580	10
DA	DA	100	1675	580	6
Lecture Bottle	LB50	50	1600	580	6
Lecture Bottle	LB25	25	800	580	5

Notes:

⁴ This product is sold by the liter in larger cylinder sizes 300 and 200.

⁵ This product is sold by the cylinder in smaller cylinders. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

⁶ Cylinder fill pressures are approximate and can vary as this product is filled gravimetrically.

Contact your WestAir representative about equipment recommendations for this product.



NITRIC OXIDE NO

Colorless, toxic, nonflammable gas, with a slight irritating odor.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Nitric Oxide, compressed
I.D. Number: UN1660
Hazard Class: 2.3 (5.1) (8)
Shipping Labels: Inhalation Hazard, Oxidizer, Corrosive

TECHNICAL INFORMATION

Molecular Weight: 30.01
Specific Volume: 13 ft³/lb.
CAS Registry: 10102-43-9
Safety Data Sheet Reference: Nitric Oxide

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume (unless otherwise specified) ²
					MAXIMUM TOTAL IMPURITIES ³
Chemically Pure	2.5	99.5%	CP	SG NOCP-	< 0.5%

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below.

² Specifications are typical results and are subject to change without notice. A list of impurity specifications are available upon request.

³ Product sold on the basis of total impurities. Individual impurities may vary slightly.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code ⁴	Volume ⁵ ft ³	Pressure (PSIG) @ 70° F.	Valve Connection CGA / DISS	Gross Weight (lbs.)
High Pressure Carbon Steel Cylinders					
200	K	56	500	660 / 728	155

Notes:

⁴ Add the letter D at end of cylinder code for DISS valve.

⁵ This product is sold by the cylinder. Fill volumes are approximate. May vary slightly depending on cylinder manufacturer.

Contact your WestAir representative about equipment recommendations for this product.



NITROGEN N₂

Colorless, odorless, nonflammable inert gas.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Nitrogen, compressed
 I.D. Number: UN1066
 Hazard Class: 2.2
 Shipping Labels: Nonflammable Gas

TECHNICAL INFORMATION

Molecular Weight: 28.013
 Specific Volume: 13.3 ft³/lb.
 CAS Registry: 7727-37-9
 Safety Data Sheet Reference: Nitrogen

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Maximum Impurity Specifications in PPM by volume (unless otherwise specified) ¹							
				O2	H2O	THC (as CH4)	CO2	CO	CO2	NOx	SO2
Research	6.0	99.9999%	RES	0.2	0.2	0.1	0.1	0.1			
CEM Zero	5.5	99.9995%	CEM	0.5	2	0.5		1	0.5	0.1	0.1
Ultra Carrier	5.5	99.9995%	UC	1	1	0.5	1				
Lab & Spec	5.5	99.9995%	LAB	1	1	0.5					
Ultra High Purity	5.0	99.999%	UHP	2	2	0.5					
Laser Shield Ultra	5.0	99.999%	LSU	1	2	0.5					
Laser Shield	4.8	99.998%	LS	5	3	0.5					
High Purity	4.8	99.998%	HP	5	3						

Notes: ¹ Specifications are typical results and are subject to change without notice.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume ² ft ³	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
Carbon Steel Cylinders					
6K ³	6K	493	6000	677	340
3K ³	3K	341	3500	680	215
300	T	300	2640	580	166
200	K	225	2200	580	151
80	Q	76	2200	580	71
35	G	37	2200	580	33
Aluminum Cylinders					
150A	DA	141	2015	580	59
80A	QA	81	2200	580	37
33A	GA	31	2200	580	11
Non-Refillable Cylinders					
Lecture Bottle	LBX	1.8	1800	170	4
Notes:				<i>Also available in other packaging such as:</i>	
² Approximate fill volume. May vary slightly depending on cylinder manufacturer.				<ul style="list-style-type: none"> • 6Packs & 15Packs in select sizes and grades • Refer to Cryogenic Section for Liquid Nitrogen Dewars • Microbulk & Bulk trailers 	
³ Only available in UHP grades or lower.					

Contact your WestAir representative about equipment recommendations for this product.



NITROGEN N₂

CRYOGENIC LIQUID

Colorless, odorless, nonflammable cryogenic liquid.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Nitrogen, Refrigerated Liquid
I.D. Number: UN1977
Hazard Class: 2.2
Shipping Labels: Nonflammable Gas

TECHNICAL INFORMATION

Molecular Weight: 28.013
Specific Volume: 13.3 ft³/lb.
CAS Registry: 7727-37-9 (R)
Safety Data Sheet Reference: Liquid Nitrogen

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by volume (unless otherwise specified) ²						
					O ₂	H ₂ O	THC (as CH ₄)	CO+ CO ₂	CO	CO ₂	
Ultra High Purity	5.0	99.999%	UHP	SG NIUHP-	2	2	0.5				
High Purity	4.8	99.998%	HP	SG NIHP-	5	3					

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below.

² Specifications are typical results and are subject to change without notice.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume ³ ft ³	Pressure ⁴ (PSIG)	Valve Connection CGA	Gross Weight (lbs.)
Cryogenic Liquid Containers					
230 liter	230	5024	22 / 230 / 350	DUAL 580 & 295	697
180 liter	180	4099	22 / 230 / 350	DUAL 580 & 295	580
160 liter	160	3685	22 / 230 / 350	DUAL 580 & 295	531

Notes:

³ This product is sold by the cylinder. Fill volumes will vary depending on pressure setting and may vary slightly depending on the cylinder manufacturer's specifications. Volumes noted are based on 230psig safety.

⁴ Choose pressure setting. 22 psig is for liquid phase and 230 or 350 is for gas phase.

Also available in other packaging and features such as:

- Micro Bulk
- Bulk
- Telemetry service

Contact your WestAir representative about equipment recommendations for this product.



NITROUS OXIDE

N₂O

Colorless, odorless, nontoxic, liquefied nonflammable gas with a slightly sweet taste and odor.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Nitrous Oxide
 I.D. Number: UN1070
 Hazard Class: 2.2 (5.1)
 Shipping Labels: Nonflammable Gas, Oxidizer

TECHNICAL INFORMATION

Molecular Weight: 44.013
 Specific Volume: 8.79 ft³/lb.
 CAS Registry: 10024-97-2
 Safety Data Sheet Reference: Nitrous Oxide

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by volume (unless otherwise specified) ²								
					H ₂ O	THC (as CH ₄)	CO + CO ₂	CO ₂	CO	N ₂	NO ₂	NOx	NH ₃
Electronic	5.5	99.9995%	EL	SG NXEL-	1	0.1		0.2	0.3	0.3	0.3	0.1	0.1
Ultra Plus	5.0	99.999%	UP	SG NXUP-	2	0.2		0.5	2	2	0.2	0.3	0.5
Lab & Spec	4.5	99.995%	LSG	SG NXLSG-	5	5	5			20	1	1	
Ultra High Purity	4.0	99.99%	UHP	SG NXUHP-	5	1		100	5		1	1	5
Atomic Absorption	2.6	99.6%	AA	SG NXAA-	5	20		300					25

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below.

² Liquid Phase Analysis. Specifications are typical results and are subject to change without notice. Product sold on the basis of total impurities. Individual impurities may vary slightly.

CYLINDER INFORMATION

Cylinder Size ³	Cylinder Size Code	Volume ⁴ Lbs.	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
Carbon Steel Cylinders					
200	K	56	745	326	207
80	Q	20	745	326	85
Aluminum Cylinders					
150A	DA	40	745	326	44
30A	GA	6	745	326	10
<i>Notes:</i>			<i>Also available in medical and food grades. Contact your WestAir representative for details.</i>		
³ Syphon Tubes are available upon request for liquid withdrawal for select sizes and grades. Add "S" after cylinder size code					
⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on cylinder manufacturer.					

Contact your WestAir representative about equipment recommendations for this product.



OXYGEN O₂

Colorless, odorless, tasteless, highly oxidizing gas.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Oxygen, compressed
 I.D. Number: UN1072
 Hazard Class: 2.2 (5.1)
 Shipping Labels: Nonflammable Gas, Oxidizer

TECHNICAL INFORMATION

Molecular Weight: 31.999
 Specific Volume: 12.1 ft³/lb.
 CAS Registry 7782-44-7
 Safety Data Sheet Reference: Oxygen

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by volume (unless otherwise specified) ²						
					H2O	THC (as CH4)	CO	CO2	Ar	N2	Kr
Research	5.0	99.999%	RES	SG OXRES-	0.5	0.2	0.5	0.5	3	5	2
Ultra High Purity	4.3	99.993%	UHP	SG OXUHP-	2	0.5	1	1	35	15	
Laser	4.0	99.99%	L	SG OXL-	5	1					
High Purity	2.8	99.8%	HP	SG OXHP-	5	50	1	10		100	
Zero (THC <0.5ppm)	2.6	99.6%	Z	SG OXZ-	3	0.5					

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Specifications are typical results and are subject to change without notice.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume ³ ft ³	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
Carbon Steel Cylinders					
300 ⁴	T	303	2400	540	172
200 ⁴	K	225	2015	540	155
80	Q	76	2015	540	72
35	G	37	2015	540	33
Disposable Non-Refillable Cylinders					
Lecture Bottle	LB*	2	1800	*170	4
Notes:					
³ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.				<i>Also available in other packaging such as:</i>	
				<ul style="list-style-type: none"> • ⁴ High capacity cylinders with special pressure ratings in singles and packs • 6Packs & 15Packs in select sizes and grades • Refer to Cryogenic Section for Liquid Oxygen • Bulk tube trailers 	

Contact your WestAir representative about equipment recommendations for this product.



OXYGEN O₂

CRYOGENIC LIQUID

Light blue, odorless, highly oxidizing cryogenic liquid.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Oxygen, Refrigerated Liquid
I.D. Number: UN1073
Hazard Class: 2.2 (5.1)
Shipping Labels: Nonflammable Gas, Oxidizer

TECHNICAL INFORMATION

Molecular Weight: 31.999
Specific Volume: 12.1 ft³/lb.
CAS Registry: 7782-44-7 ®
Safety Data Sheet Reference: Liquid Oxygen

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by volume (unless otherwise specified) ²						
					H2O	THC (as CH4)	CO	CO2	Ar	N2	Kr
Ultra High Purity	4.3	99.993%	UHP	SG OXUHP-	2	0.5	1	1	35	15	
High Purity	2.8	99.8%	HP	SG OXHP-	5	50	1	10		100	

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below.

² Specifications are typical results and are subject to change without notice.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume ³ ft ³	Pressure ⁴ (PSIG)	Valve Connection CGA	Gross Weight (lbs.)
Cryogenic Liquid Containers					
230 liter	230	6244	22 / 230	DUAL 540 & 440	866
180 liter	180	5096	22 / 230	DUAL 540 & 440	701
160 liter	160	4577	22 / 230	DUAL 540 & 440	640

Notes:

³ This product is sold by the cylinder. Fill volumes will vary depending on pressure setting and may vary slightly depending on the cylinder manufacturer's specifications. Volumes noted are based on 230psig safety.

⁴ Choose pressure setting. 22 psig is for liquid phase and 230 is for gas phase.

Also available in other packaging and features such as:

- Micro Bulk
- Bulk
- Telemetry service

Contact your WestAir representative about equipment recommendations for this product.



PROPANE C₃H₈

Colorless, flammable liquefied gas.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Propane
I.D. Number: UN1978
Hazard Class: 2.1
Shipping Labels: Flammable Gas

TECHNICAL INFORMATION

Molecular Weight: 44.1
Specific Volume: 8.5 ft³/lb.
CAS Registry: 74-8-6
Safety Data Sheet Reference: PROPANE

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume ² <i>(unless otherwise specified)</i>
					Sum of all Impurities ²
Research	4.0	99.99%	RES	SG PRRES-	< 100 PPM
Instrument	2.5	99.5%	INS	SG PRINS-	<5000 PPM
Chemical Pure	2.0	99%	CP	SG PRCP-	< 1 %

Notes:

¹ Complete catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² Liquid Phase Analysis. Specifications are typical results and are subject to change without notice.

³ A complete list of impurities is available upon request.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume ⁴ lbs.	Pressure (PSIG) @ 70° F.	Valve Connection ⁵ CGA	Gross Weight (lbs.)
Low Pressure Steel Cylinders					
Jumbo	HTN	420	109	Dual 510 & 555	735
350	LP25	100	109	510 / 555	170
LP5	LP5	20	109	510 / 555	37
Disposable Non-Refillable Cylinders					
Lecture Bottle	LB*	0.375	109	*170	5

Notes:

⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

⁵ Siphon tube with a CGA 555 for liquid withdrawal is available upon request. Add "S" at end of cylinder size code.

Contact your WestAir representative about equipment recommendations for this product.



SULFUR DIOXIDE SO₂

Odorless, toxic, corrosive, nonflammable, liquefied gas with a very irritating odor..

SHIPPING INFORMATION					TECHNICAL INFORMATION				
D.O.T. Proper Shipping Name:	Sulfur Dioxide, Inhalation Hazard Zone C				Molecular Weight:	64.07			
I.D. Number:	UN1079				Specific Volume:	5.99 ft ³ /lb.			
Hazard Class:	2.3 (8)				CAS Registry	7446-09-5			
Shipping Labels:	Inhalation Hazard (Corrosive)				Safety Data Sheet Reference:	Sulfur Dioxide			
					Permissible Exposure Limit (TLV)	2 ppm			
PRODUCT GRADE SPECIFICATIONS									
Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by volume (unless otherwise specified) ²				
Anhydrous Grade	3.8	99.98%	ANH	SG SDANH-	Total Impurities < 200 ppm				
Notes: ¹ Complete the catalog number by selecting cylinder size code using chart below. ² Specifications are typical results and are subject to change without notice. Liquid Phase, weight/weight %									

CYLINDER INFORMATION					
Cylinder ³ Size	Cylinder Size Code	Volume ⁴ Lbs.	Pressure (PSIG)	Valve Connection	Gross Weight (lbs.)
High Pressure Steel Cylinders					
LP150	CL	150	34	CGA 660	210
200	K	100	34	CGA 660	251
80	Q	40	34	CGA 660	114
35	G	15	34	CGA 660	54
4	F	5	34	CGA 660	27
Portable & Nonrefillable Steel Cylinders					
Lecture Bottle	LB180	1	34	CGA 180	6
Notes:			Equipment Recommendations:		
³ Available with full length siphon tube for liquid withdrawal, upon request only. Except for lecture bottle. Note: The letter "S" at end of part number will designate "siphon tube".			<ul style="list-style-type: none">• Valve panels• Special Purpose Regulators• Gas Cabinet• Flow control		
⁴ This product is sold by the cylinder. Fill volumes will vary depending on pressure setting and may vary slightly depending on the cylinder manufacturer's specifications.					

Contact your WestAir representative about equipment recommendations for this product.



SULFUR HEXAFLUORIDE

SF₆

Colorless, flammable, liquefied gas with a mildly aromatic odor.

SHIPPING INFORMATION			TECHNICAL INFORMATION					
D.O.T. Proper Shipping Name:	Sulfur Hexafluoride		Molecular Weight:	146.05				
I.D. Number:	UN1080		Specific Volume:	2.5 ft ³ /lb.				
Hazard Class:	2.2		CAS Registry	2551-62-4				
Shipping Labels:	Nonflammable Gas		Safety Data Sheet Reference:	SF6				
PRODUCT GRADE SPECIFICATIONS								
Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume (unless otherwise specified) ²			
					O ₂ + N ₂	H ₂ O	CF ₄	Acidity (HF)
Electronic	5.0	99.999%	EL	SG SHEL-	6 ppmw	2	5 ppmw	0.3
Research	5.0	99.999%	RES	SG SHRES-	6 ppmw	2	5 ppmw	0.3
Ultra Plus	4.0	99.99%	UP	SG SHUP-	50 ppmw	8	40 ppmw	0.3
Chemical Pure	3.0	99.9%	CP	SG SHCP-	500 ppmw	8	350 ppmw	0.3

Notes: ¹ Complete the catalog number by selecting cylinder size code using chart below.
2 Specifications are typical results and are subject to change without notice.

Certification is available upon request for a nominal fee.

CYLINDER INFORMATION					
Cylinder Size	Cylinder Size Code	Volume lbs. ³	Pressure (PSIG) @ 70° F.	Valve Connection CGA ⁴	Gross Weight (lbs.)
High Pressure Steel Cylinders					
200	K	115	320	590	240
80	Q	40	320	590	91
40	G40	20	320	590	55
High Pressure Aluminum Cylinders					
150A	DA	70	320	590	139
80A	QA	40	320	590	80
Disposable Non-Refillable Cylinder (NRC)					
DC	DC	3.5	320	590	8
Lecture Bottle ⁴	LB	0.4	320	590	5

Notes: ³ Product is sold by the cylinder. Approximate fill volumes are typical and may vary slightly depending on cylinder manufacturer.
4 Standard CGA for lecture bottle is CGA 590. Lecture bottle CGA 170 or 180 is available upon request.

Contact your WestAir representative about equipment recommendations for this product.



trans-2-BUTENE C4H8

Colorless, flammable, liquefied gas with a mildly aromatic odor.

SHIPPING INFORMATION						TECHNICAL INFORMATION	
D.O.T. Proper Shipping Name:	Petroleum Gases, Liquefied					Molecular Weight:	56.11 g/mol
I.D. Number:	UN1075					Specific Volume:	6.7 ft ³ /lb.
Hazard Class:	2.1					CAS Registry	624-64-6
Shipping Labels:	Flammable gas					Safety Data Sheet Reference:	trans-2-Butene
PRODUCT GRADE SPECIFICATIONS							
Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume ² <i>(unless otherwise specified)</i>		
					Sum of all Impurities ³		
Instrument	2.5	99.5%	INS	SG T2BINS-	< 0.5 %		
Chemical Pure	2.0	99%	CP	SG T2BCP-	< 1%		
Notes: ¹ Complete catalog number by selecting cylinder size code using chart below. ² Liquid Phase Analysis. Specifications are typical results and are subject to change without notice. ³ A complete list of impurities is available upon request.							

CYLINDER INFORMATION					
Cylinder Size	Cylinder Size Code	Volume ⁴ lbs.	Pressure (PSIG) @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
Low Pressure Steel Cylinders					
350	LP25	120	15	510	199
LP5	LP5	20	15	510	40

Notes:

⁴ This product is sold by the cylinder. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

Contact your WestAir representative about equipment recommendations for this product.



XENON Xe

Colorless, odorless, nonflammable inert gas.

SHIPPING INFORMATION

D.O.T. Proper Shipping Name: Xenon
 I.D. Number: UN2036
 Hazard Class: 2.2
 Shipping Labels: Nonflammable gas

TECHNICAL INFORMATION

Molecular Weight: 131.30
 Specific Volume: 2.9 ft³/lb.
 CAS Registry: 7440-63-3
 Safety Data Sheet Reference: XENON

PRODUCT GRADE SPECIFICATIONS

Grade Name	Grade	Minimum Purity	Grade Code	Catalog Number ¹	Maximum Impurity Specifications in PPM by Volume ² <i>(unless otherwise specified)</i>
					Sum of all Impurities ³
Research	5.0	99.999%	RES	SG XERES-	< 10 PPM

Notes:

¹ Complete the catalog number by selecting cylinder size code using chart below. Except for Disposables, "SG" will be replaced with "DSP".

² All specifications refer to "Typical Analysis" of the usual product composition and should not be interpreted as the individual component specifications. Guarantee is for Total Purity.

³ Specifications are typical results and are subject to change without notice. A complete list of impurities is available upon request.

CYLINDER INFORMATION

Cylinder Size	Cylinder Size Code	Volume Liters	Approximate Pressure (PSIG) ⁶ @ 70° F.	Valve Connection CGA	Gross Weight (lbs.)
High Pressure Steel Cylinders					
300 ⁴	T	10,000	970	580	288
200 ⁴	K	5,000	1250	580	242
80 ⁵	Q	2,000	1000	580	95
35 ⁵	G	500	575	580	39
Disposable Non-Refillable Cylinders (NRC) ⁵					
DE	DE	500	850	580	20
DD	DD	300	700	580	10
DC	DC	200	690	580	9
DB	DB	150	690	580	8
DA	DA	100	690	580	8
Lecture Bottle	LB50	50	800	580	6
Lecture Bottle	LB25	25	530	580	5
Lecture Bottle	LB10	10	266	580	5

Notes:

⁴ This product is sold by the liter in larger cylinder sizes 300 and 200.

⁵ This product is sold by the cylinder in smaller cylinders. Fill volumes are approximate and may vary slightly depending on the cylinder manufacturer's specifications.

⁶ Cylinder fill pressures are approximate and can vary as this product is filled gravimetrically.

Contact your WestAir representative about equipment recommendations for this product.