

SEMICONDUCTOR GAS PRESSURE GUIDE

Gas Pressure Recommendations for Semiconductor Gases: Choosing the Ideal Regulator Solutions for Point-of-Use Applications, Gas Cabinets, VMBs, and Distribution Systems

Parker | Veriflo

				Gas Source Location		Distribution Source Location	
Gas	**Cylinder Pressure (PSIG)**	**Hazards**	**UHP CGA/ DISS (Nipple, Nut, Gasket)**	**Applied Flow Range (SLPM)**	**Gas Cabinet Regulator**	**Applied Flow Range (SLPM)**	**VMB Regulator**
Acetylene C2H2	250	Flammable	510	3 50 75	959W FR1400 FR1200	3 6 50 75 95 95	FR1000 FR1000 FR1400 FR1200 FR1200 FR1300
Air	100		346	30 100 200 800	959W 959W FR1400 FR1400H	30 50 150 400 600 600	FR1000 FR1000 FR1400 FR1200 FR1200 FR1300
Ammonia NH3	114	Toxic Flammable Corrosive	660/720	5 50 75 400 600 1100	959W FR1400 FR1200 FR1200 FR1200 BFR5K	5 30 60 125 250 250 500 1000	FR1000 FR1000 FR1400 FR1200 FR1200 FR1300 FR1200 BFR5K
Argon Ar	150-2640	Asphyxiant	580/718	10 100 350 600	959W 959W 959W2 FR1400H	10 25 50 100 200 200 400 1000	FR1000 FR1000 FR1400 FR1200 FR1200 FR1300 FR1200 BFR5K
Arsine AsH3	150-205	Toxic Flammable	350/632	5 40	959W FR1400	5 20	FR1000 FR1000
Arsine Mixtures (Nitrogen Balance)	205	Toxic Flammable	350/632	15 50 150	959W FR1200 FR1400	15 50 150	FR1000 FR1000 FR1400
Boron Trichloride BCl3	4.4	Toxic Corrosive	660/634	6	FR1403SA	0.4 6	NPR4000 FR1403SA
Boron Trifluoride BF3	1000	Toxic	330/642	5 25	959W FR1400	5 10 25	FR1000 FR1000 FR1400
Boron-11 Trifluoride Enriched B11,F3	850	Toxic Corrosive	330/642	5 25	959W FR1400	5 10 25	FR1000 FR1000 FR1400

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Butadiene C4H6	21.4	Flammable	510	3 40	FR1400	3 5	FR1000 FR1400
Butane (normal) C4H10	0.4	Flammable	510	3 40	959W FR1400	3 5	FR1000 FR1000
Butene-1 C4H8	85	Flammable	510	4 50	959W FR1400	3 5	FR1000 FR1000
Carbon Dioxide CO2	830	Asphyxiant	320/716	3 75 150 500 1000	959W FR1400 FR1200 FR1200HS12V BFR5K	8 20 40 100 160 160 325 800	FR1000 FR1000 FR1400 FR1200 FR1200 FR1300 FR1200 BFR5K
Carbon Monoxide CO	1650	Toxic Flammable	350/724	5 15 50	959W 959W FR1400	5 15 50	FR1000 FR1000 FR1400
Carbonyl Fluoride COF3	814	Toxic	660	5 25	959W FR1400	3 10	FR1000 FR1000
Chlorine Cl2	86	Toxic Corrosive	660/728	3 50 75 200	959W FR1400 FR1200HD12V FR1200	5 15 30 75 125 125 250	FR1000 FR1000 FR1400 FR1200 FR1200 FR1300 FR1200
Chlorine Trifluoride ClF3	7	Toxic Corrosive Reactive	670/728	6	FR1403SA	.5 6	NPR4000 FR1403SA
Diborane B2H6	2200	Toxic Flammable	350/632	25		10 20	FR1000 FR1000
Dichlorosilane SiH2CL2	9.5	Toxic Flammable Corrosive	678/636	7	FR1403SA	1 7	NPR4000 FR1403SA
Diethyltelluride C2H5(2 TE		Flammable Toxic	726	3 4 25	959W 959W FR1400	3 5 25	FR1000 FR1000 FR1400

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Difluoroethylene C2H2F2	652	Flammable	350	3 50 75	959W FR1400 FR1200	3 6 50 75	FR1000 FR1000 FR1400 FR1200
Dimethylsilane C2SiH8		Flammable		3 50 75	959W FR1400 FR1200	3 50 75	FR1000 FR1400 FR1200
Disilane Si2H6	33	Toxic Flammable Corrosive	510/632	1 7	FR1000 FR1403SA	1 7	FR1000 FR1403SA
Ethylene C2H4	692	Flammable	350/724	3 50 75	959W FR1400 FR1200	3 5 50 75	FR1000 FR1000 FR1400 FR1200
Fluorine F2	150-300	Toxic Corrosive Oxidizer	679	Consult Factory		Consult Factory	
Germane GeH4	53	Toxic Flammable	350/632	1 7	FR1000 FR1400	1 7	FR1000 FR1400
Germane Mixtures (Nitrogen Balance)	53	Toxic Flammable		10 20 50	959W 959W FR1400	10 20 50	FR1000 FR1000 FR1400
Halocarbon-12 Dichlorodiflomethane CCl2F2	70	Asphyxiant	660/716	3 50	959W FR1400	3 5 50	FR1000 FR1000 FR1400
Halocarbon 12B2 CBr2F2	2	Asphyxiant		5	FR1403SA	0.5 5	NPR4000 FR1403SA
Halocarbon-13 Chlorotrifluoromethane CClF3	460	Asphyxiant	660/716	3 50	959W FR1400	3 50 50	FR1000 FR1000 FR1400
Halocarbon 13B1 CBrF3	200	Asphyxiant		3 50	959W FR1400	3 5 50	FR1000 FR1000 FR1400

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Halocarbon-14 Tetrafluoromethane CF4	150-2000	Asphyxiant	320/716	10 40 80 500	959W 959W 959W2 FR1200	5 15 30 60 100 250 500	FR1000 FR1000 FR1400 FR1200 FR1200 FR1200 BFR5K
Halocarbon 21 CHCl2 F	8.4	Asphyxiant		5	FR1403SA	0.5 5	NPR4000 FR1403SA
Halocarbon-23 Fluoroform CHF3	635	Asphyxiant	660/716	10 50	959W FR1400	10 20 50	FR1000 FR1000 FR1400
Halocarbon 32 CH2F2	232	Asphyxiant		3 50 75	959W FR1400 FR1200	3 6 50 75	FR1000 FR1000 FR1400 FR1200
Halocarbon 114 C2ClF4		Asphyxiant		7	FR1403SA	0.5 1 7	NPR4000 FR1000 FR1403SA
Halocarbon-115 Chloropentafluoroethane C2ClF5	101	Asphyxiant	660/716	3 50 75	959W FR1400 FR1200	3 5 50 75	FR1000 FR1000 FR1400 FR1200
Halocarbon-116 Hexafluoroethane C2F6	445	Asphyxiant	660/716	3 50 75 125	959W FR1400 FR1200 FR1200HS12K	3 10 25 50 90 90 175 450	FR1000 FR1000 FR1400 FR1200 FR1200 FR1300 FR1200 BFR5K
Halocarbon 125 C2HF5	175	Asphyxiant		3 25 75	959W FR1400 FR1200	3 5 25 75	FR1000 FR1000 FR1400 FR1200
Halocarbon 134A C2H2F4	35-160	Asphyxiant	660/716	3 50 75	959W FR1400 FR1200	3 5 50 75	FR1000 FR1000 FR1400 FR1200

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Halocarbon R218 C3F8	114	Asphyxiant	660/716	3 50 75	959W FR1400 FR1200	3 5 50 75	FR1000 FR1000 FR1400 FR1200
Halocarbon C318 C4F8	25	Asphyxiant	660/716	6	FR1403SA	1 6	NPR4000 FR1403SA
Halocarbon C1418 (Octafluorocyclopentene) C5F8	14.7	Asphyxiant		0.2 3	NPR4000 FR1403SA	Regulator not required	
Helium He	150 - 2600	Asphyxiant	580/718	125 500 625 2000	959W 959W 959W2 FR1400H	65 125 275 625 900 1200 2500	FR1000 FR1000 FR1400 FR1200 FR1200 FR1200 BFR5K
Hexafluoropropane C3H2F6	39	Asphyxiant	350/724	6	FR1403SA	6	FR1403SA
Hexafluoropropylene C3F6	100	Asphyxiant	660/716	30 50 75	959W FR1400 FR1200	3 5 50 75	FR1000 FR1000 FR1400 FR1200
Hydrogen H2	150-2600	Flammable	350/724	125 500 625 900 1200	959W 959W 959W FR1400H FR1400H	65 125 275 625 900 1200 1300	FR1000 FR1000 FR1400 FR1200 FR1200 FR1200 BFR5K
Hydrogen Bromide HBr	320	Toxic Corrosive	330/634	1 30 50	959W FR1400 FR1200	1 2 30 50	FR1000 FR1000 FR1400 FR1200
Hydrogen Chloride HCl	613	Toxic Corrosive	330/634	2 90 150 600 2000	959W FR1400 FR1200 FR1200HS12K BFR5K	8 20 40 85 160 300 800	FR1000 FR1000 FR1400 FR1200 FR1300 FR1200 BFR5K

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Hydrogen Fluoride HF	0.9	Toxic Corrosive	660/638	5	FR1403SA	5	FR1403SA
Hydrogen Selenide H2Se	125	Toxic Flammable	350/632	5 40	959W FR1400	5 20 40	FR1000 FR1000 FR1400
Hydrogen Selenide Mixtures (Nitrogen Balances)	125	Toxic Flammable		10 20 50	959W 959W FR1400	10 20 50	FR1000 FR1000 FR1400
Hydrogen Sulfide H2S	253	Toxic Flammable Corrosive	330/732	5 40	FR1400	5 10 40	FR1000 FR1000 FR1400
Krypton Kr	800	Asphyxiant	580/718	20 60	959W FR1400	20 30 60	FR1000 FR1000 FR1400
Methane CH4	150-2265	Flammable Asphyxiant	350	10 20 40	959W 959W FR1400	10 20 40	FR1000 FR1000 FR1400
Methanol CH3OH	16	Flammable		3 50	959W FR1400	3 5	FR1000 FR1000
Methyl Bromide CH3Br	45	Flammable Toxic	330	5	FR1403SA	5	FR1403SA
Methyl Chloride CH3CL	59	Toxic Flammable	660	1 10	FR1000 FR1403SA	10	FR1403SA
Methysilane CH3SiH3	192	Flammable	350/632	3 50 75	959W FR1400 FR1200	3 5 50 75	FR1000 FR1000 FR1400 FR1200
Methyl Fluoride CH3F	435	Flammable	350/724	5 50	959W FR1400	5 10 50	FR1000 FR1000 FR1400
Neon Ne	150-850	Asphyxiant	580/718	20 40 300	959W 959W FR1400H	20 40 100	FR1000 FR1000 FR1400

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Nitrogen N2	150-2600	Asphyxiant		50 200 250 1000	959W FR1000 FR1000 FR1400H	25 50 150 250 300 300 400 1000	FR1000 FR1000 FR1400 FR1200 FR1200 FR1300 FR1200 BFR5K
Nitrogen Dioxide NO2	17.56	Toxic Oxidizer	660	4 45	959W FR1400	4 6	FR1000 FR1000
Nitrogen Trifluoride NF3	150-1450	Toxic Oxidizer	330/640	5 60 150 1000	959W FR1400 FR1400 BFR5K	6 15 30 75 125 125 250 600	FR1000 FR1000 FR1400 FR1200 FR1200 FR1300 FR1200 BFR5K
Nitric Oxide NO	939	Toxic Oxidizer	580/718	3 50 75	959W FR1400 FR1200	3 6 50 75	FR1000 FR1000 FR1400 FR1200
Nitrous Oxide N2O	745	Oxidizer	327/712	3 60 100 150 500 1000	959W FR1400 FR1200 FR1200 FR1200HS12V BFR5K	8 20 35 85 160 160 320 800	FR1000 FR1000 FR1400 FR1200 FR1200 FR1300 FR1200 BFR5K
Octafluorocyclopentene C5F8	614	Toxic	660/716	5	FR1403SA	0.3 5	NPR4000 FR1403SA
Oxygen O2	150-2600	Oxidizer	540/714	10 80 150 1000	959W 959W 959W FR1200	10 25 50 120 200 200 400 1000	FR1000 FR1000 FR1400 FR1200 FR1200 FR1300 FR1200 BFR5K

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Perfluoropropane C3F8	100	Asphyxiant	660/716	2 20	959W FR1400	2 4 20	FR1000 FR1000 FR1400
Perfluorobutadiene C4F6	15	Toxic Flammable		5	FR1403SA	0.5 5	NPR4000 FR1403SA
Phosphine PH3	592	Toxic Flammable	660/632	5 40	959W FR1400	5 10	FR1000 FR1000
Phosphine Mixtures (Nitrogen Balance)	592	Toxic Flammable		10 20 50	959W 959W FR1200	10 20	FR1000 FR1000
Phosphorus Pentafluoride PH5	400	Toxic Corrosive	330/642	10 20 50	959W 959W FR1200	10 20	FR1000 FR1000
Propane C3H8	92	Flammable	350/632	3 50	959W FR1400 & FR1200	3 5 50	FR1000 FR1000 FR1400
Silane SiH4	1250	Toxic Irritant Flammable	350/632	5 40 50 60 100 500	959W FR1400 FR1400 FR1200 FR1200 FR1200HS12K	10 25 50 120 200 200 400 1000	FR1000 FR1000 FR1400 FR1200 FR1200 FR1300 FR1200 BFR5K
Silane Mixtures (Nitrogen Balance)	1250	Toxic Irritant Flammable		10 20 40	959W 959W FR1400	10 20 40	FR1000 FR1000 FR1400
Silicon Tetrachloride SiCl4	3.8	Toxic	636	2	FR1403SA	0.2 2	NPR4000 FR1403SA
Silicon Tetrafluoride SiF4	1000	Toxic Corrosive	330/642	10 40	959W FR1400	10 20 40	FR1000 FR1000 FR1400
Sulfur Dioxide SO2	34	Toxic Corrosive	660	1 6	FR1000 FR1403SA	6	FR1403SA

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Sulfur Hexafluoride SF6	320	Asphyxiant	590/716	3 40 60 150 500	959W FR1400 FR1200 FR1200 BFR5K	5 12 25 60 90 90 180 400	FR1000 FR1000 FR1400 FR1200 FR1200 FR1300 FR1200 BFR5K
Sulfur Tetrafluoride SF4	140	Toxic Corrosive	330	3 15	959W FR1400	3 5 15	FR1000 FR1000 FR1400
Trichlorosilane SiHCl3	20	Flammable	636	10	FR1403SA	0.5 10	NPR4000 FR1403SA
Trimethylsilane (CH3)3 SiH	10	Flammable	350/632	7	FR1403SA	0.5 7	NPR4000 FR1403SA
Tungsten Hexafluoride WF6	2.4	Toxic Corrosive	670/638	5	FR1403SA	0.3 7	NPR4000 FR1403SA
Xenon Xe	645	Asphyxiant	580/718	5 25	959W FR1400	5 10 25	FR1000 FR1000 FR1400

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