

## Gas Permeability Rates

Gas or Liquid	Elastomer	Temperature		Permeability <sup>(1)</sup> x 10 <sup>-8</sup>	Source <sup>(2)</sup>
		°C	°F		
Acetone	Silicone	25	77	14,850	I
Acetylene	Butyl	25	77	1.26	I
Acetylene	Butyl	50	122	5.74	I
Acetylene	Natural	25	77	74.5	I
Acetylene	Natural	50	122	192	I
Acetylene	Nitrile	25	77	18.7	I
Acetylene	Nitrile	50	122	67.4	I
Air	Butyl	Room		0.2	DC
Air	Butyl	200	392	100	DC
Air	Fluorosilicone	Room		48.4	DC
Air	Natural	Room		6.7	DC
Air	Natural	200	392	262	DC
Air	Silicone	Room		18.0 to 25.6	DC
Air	Silicone	200	392	74	DC
Air	Polyurethane	Room		0.5	DC
Ammonia	Silicone	25	77	4396	I
Argon	Butyl (B0318-70)	35	95	1.19	A
Argon	Butyl (B0318-70)	82	180	9.04	A
Argon	Butyl (B0318-70)	124	255	36.1	A
Argon	Ethylene Propylene	38	100	11.3 to 22.9	A
Argon	Ethylene Propylene (E0529-65)	40	104	22.9	A
Argon	Ethylene Propylene (E0692-75)	38	100	15.58	A
Argon	Ethylene Propylene	93	200	57.0 to 108.7	A
Argon	Ethylene Propylene (E0529-65)	94	202	105	A
Argon	Ethylene Propylene (E0692-75)	93	199	77	A
Argon	Ethylene Propylene	149	300	170 to 375	A
Argon	Ethylene Propylene (E0529-65)	155	311	375	A
Argon	Ethylene Propylene (E0692-75)	149	300	280	A
Argon	Fluorocarbon-Viton <sup>(4)</sup>	93	200	31	A
Argon	Natural	25	77	17.2	I
Argon	Neoprene	36	97	0.67	I
Argon	Neoprene	38	100	18	A
Argon	Neoprene	52	126	1.42	I
Argon	Neoprene	86	187	6.46	I
Argon	Nitrile	38	100	1.60 to 3.88	A
Argon	Nitrile (N0741-75)	39	103	2.06	A
Argon	Nitrile	79	175	6.39 to 16.7	A
Argon	Nitrile (N0741-75)	80	176	7.36	A
Argon	Nitrile	121	250	13.7 to 62.3	A
Argon	Nitrile (N0741-75)	118	245	34	A
Argon	Polyacrylate (A0607-70)	38	100	8.28	A
Argon	Polyacrylate (A0607-70)	91	195	40.66	A
Argon	Polyacrylate (A0607-70)	153	307	327	A
Argon	Polyurethane (P0642-70)	39	103	1.5	A
Argon	Polyurethane (P0648-90)	39	102	0.99	A
Argon	Polyurethane (P0642-70)	66	151	5.45	A
Argon	Polyurethane (P0648-90)	67	152	4.07	A
Argon	Polyurethane (P0642-70)	94	202	20.8	A
Argon	Polyurethane (P0648-90)	94	201	7.3	A
Argon	SBR	38	100	1.09 to 5.24	A
Argon	SBR (G0244-70)	38	101	5.24	A

(1) Std cc cm/cm<sup>2</sup> sec. bar

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(3) "NR" Temperature not reported.

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Gas or Liquid	Elastomer	Temperature		Permeability <sup>(1)</sup> x 10 <sup>-8</sup>	Source <sup>(2)</sup>	
		°C	°F			
Argon	SBR (G0244-70)	84	183	25.5	A	
Argon	SBR (G0244-70)	122	251	138	A	
Argon	Silicone	38	100	230 to 487	A	
Argon	Silicone (S0684-70)	38	101	347	A	
Argon	Silicone	93	200	454 to 1500	A	
Argon	Silicone (S0684-70)	91	195	454	A	
Argon	Silicone	149	300	566 to 2840	A	
Argon	Silicone (S0684-70)	156	313	1020	A	
Argon	Silicone	Room		450	I	
Argon	PTFE	149	300	12	A	
Benzene	Silicone	25	77	14300	I	
Butane	Silicone	25	77	6750	I	
Butane	Silicone	30	86	12980	I	
Butane	Silicone	40	104	12380	I	
Butane	Silicone	50	122	11630	I	
Butane	Silicone	60	140	11030	I	
Butane	Silicone	70	158	11330	I	
iso-Butane	Silicone	30	86	7250 to 12980	I	
iso-Butane	Silicone	40	104	7058 to 12380	I	
iso-Butane	Silicone	50	122	6861 to 11630	I	
iso-Butane	Silicone	60	140	6691 to 11030	I	
iso-Butane	Silicone	70	158	6541 to 11330	I	
Carbon Dioxide	Butadiene	25	77	36.3 to 103.6	I	
Carbon Dioxide	Butadiene	30	86	103.5	I	
Carbon Dioxide	Butadiene	50	122	197.4	I	
Carbon Dioxide	Fluorosilicone	Room		514	DC	
Carbon Dioxide	Fluorosilicone	26	79	444	I	
Carbon Dioxide	Natural	25	77	98.3 to 116	I	
Carbon Dioxide	Natural	30	86	98.3	I	
Carbon Dioxide	Natural	50	122	218	I	
Carbon Dioxide	Neoprene	22.3	72	9.98	I	
Carbon Dioxide	Neoprene	25	77	13.9 to 19.2	I	
Carbon Dioxide	Neoprene	30	86	14.0 to 18.8	I	
Carbon Dioxide	Neoprene	50	122	47.6	I	
Carbon Dioxide	Nitrile	20	68	5.63	I	
Carbon Dioxide	Nitrile	30	86	47.7	I	
Carbon Dioxide	Polysulfide	23	73	7.95	I	
Carbon Dioxide	Polysulfide	25	77	2.37	I	
Carbon Dioxide	Polyurethane	20	68	10.5	I	
Carbon Dioxide	Polyurethane	30	86	5.4 to 30.0	I	
Carbon Dioxide	Silicone	20.5	69	1028 to 1530	I	
Carbon Dioxide	Silicone	25	77	2280	I	
Carbon Dioxide	Silicone	32	90	1025 to 1545	I	
Carbon Dioxide	Silicone	43.5	110	1043 to 1538	I	
Carbon Dioxide	SBR	25	77	92.8	I	
Carbon Dioxide	SBR	30	86	93.0	I	
Carbon Dioxide	FEP PTFE	25	77	7.51	I	
Carbon Monoxide	Butadiene	25	77	4.64	I	
Carbon Monoxide	Natural	25	77	11.8	I	
Carbon Monoxide	Silicone	Room		255	I	
Carbon Tetrachloride	Silicone	Room		52500	I	

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		°C	°F		
Carbonyl Chloride	Silicone	Room		11250	I
Ethane	Butadiene	25	77	24.97	I
Ethane	Silicone	25	77	1875	I
Ethylene	Silicone	Room		1013	I
Formaldehyde	Silicone	Room		8830	I
Freon 11	Silicone	25	77	11250	I
Freon 12	Butyl	25	77	1.05 to 55.5	I
Freon 12	Fluorocarbon	25	77	2.4 to 63	I
Freon 12	Neoprene	25	77	8.78	I
Freon 12	Nitrile	25	77	.3 to 5.5	I
Freon 12	Polyurethane	25	77	14.55	I
Freon 12	Silicone	25	77	1035	I
Freon 22	Butyl	25	77	3.0	I
Freon 22	Fluorocarbon	25	77	57	I
Freon 22	Neoprene	25	77	19.5	I
Freon 22	Nitrile	25	77	353	I
Freon 22	Polyurethane	25	77	225	I
Helium	Butadiene	25	77	11.8	I
Helium	Butyl (B0612-70)	25	77	6.5	P
Helium	Butyl (B0612-70)	80	176	52.0	P
Helium	Butyl (B0612-70)	150	302	240	P
Helium	EP (E0515-80)	25	77	19.7	P
Helium	EP (E0515-80)	80	176	61.0	P
Helium	EP (E0515-80)	150	302	320	P
Helium	Fluorocarbon	30	86	12.8	I
Helium	Fluorocarbon (V0747-75)	25	77	12.7	P
Helium	Fluorocarbon (V0747-75)	80	176	131	P
Helium	Fluorocarbon (V0747-75)	150	302	490	P
Helium	Fluorosilicone (L0449-65)	25	77	143	P
Helium	Fluorosilicone (L0449-65)	80	176	461	P
Helium	Fluorosilicone (L0449-65)	150	302	973	P
Helium	Natural	25	77	17.25 to 32.3	I
Helium	Natural	30	86	27.0	I
Helium	Natural	34	93	43.0	I
Helium	Natural	50	122	51.6	I
Helium	Neoprene	0	32	1.7	I
Helium	Neoprene	25	77	.6 to 7.5	I
Helium	Neoprene (C0557-70)	25	77	6.5	P
Helium	Neoprene	30.4	87	5.9	I
Helium	Neoprene	41.5	107	11.8	I
Helium	Neoprene	57	135	26.3	I
Helium	Neoprene	73	163	36.0	I
Helium	Neoprene (C0557-70)	80	176	59.6	P
Helium	Neoprene	101.3	214	70.5	I
Helium	Neoprene (C0557-70)	150	302	187	P
Helium	Nitrile	25	77	7.40	I
Helium	Nitrile (N0674-70)	25	77	8.0	P
Helium	Nitrile	50	122	19.3	I
Helium	Nitrile (N0674-70)	80	176	65.9	P
Helium	Nitrile (N0674-70)	150	302	252	P
Helium	Nitroso	NR3		1050	I

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Gas or Liquid	Elastomer	Temperature		Permeability <sup>(1)</sup> x 10 <sup>-8</sup>	Source <sup>(2)</sup>
		°C	°F		
Helium	Polyacrylate (A0607-70)	25	77	16.3	P
Helium	Polyacrylate (A0607-70)	80	176	110	P
Helium	Polyacrylate (A0607-70)	150	302	310	P
Helium	Polyurethane (P0642-70)	25	77	3.6	P
Helium	Polyurethane (P0642-70)	80	176	33.5	P
Helium	SBR	25	77	17.3	I
Helium	Silicone	25	77	263	I
Helium	Silicone (S0604-70)	25	77	238	P
Helium	Silicone	30	86	173	I
Helium	Silicone (S0604-70)	80	176	560	P
Helium	Silicone (S0604-70)	150	302	1250	P
Helium	TFE PTFE	25	77	523 (sic)	I
Helium	TFE PTFE	30	86	90.0	I
Helium	TFE PTFE	50	122	128	I
Helium	FEP PTFE	25	77	30.1	I
Helium	FEP PTFE	30	86	46.5	I
Helium	FEP PTFE	50	122	58.5	I
Helium	FEP PTFE	75	167	94.4	I
Helium	FEP PTFE	100	212	157	I
Hexane	Silicone	25	77	7050	I
Hydrogen	Butadiene	25	77	31.6	I
Hydrogen	Butadiene	50	122	76.0	I
Hydrogen	Butyl (B0318-70)	35	95	16.1	A
Hydrogen	Butyl (B0318-70)	82	180	68.2	A
Hydrogen	Butyl (B0318-70)	124	255	273	A
Hydrogen	Ethylene Propylene	38	100	28.9 to 111	A
Hydrogen	Ethylene Propylene (E0529-65)	40	104	111	A
Hydrogen	Ethylene Propylene (E0692-75)	38	100	45.3	A
Hydrogen	Ethylene Propylene	93	200	187 to 544	A
Hydrogen	Ethylene Propylene (E0529-65)	94	202	544	A
Hydrogen	Ethylene Propylene (E0692-75)	94	201	252	A
Hydrogen	Ethylene Propylene	152	306	599 to 1730	A
Hydrogen	Ethylene Propylene (E0529-65)	155	311	1730	A
Hydrogen	Ethylene Propylene (E0692-75)	151	304	591	A
Hydrogen	Fluorocarbon-Viton4	93	200	160	A
Hydrogen	Neoprene	38	100	180	A
Hydrogen	Nitrile	38	100	10.3 to 32.1	A
Hydrogen	Nitrile (N0741-75)	39	103	11.9	A
Hydrogen	Nitrile	79	175	47.0 to 125	A
Hydrogen	Nitrile (N0741-75)	80	176	88.2	A
Hydrogen	Nitrile	121	250	98.8 to 330	A
Hydrogen	Polyacrylate (A0607-70)	38	100	49.6	A
Hydrogen	Polyacrylate (A0607-70)	91	195	174	A
Hydrogen	Polyacrylate (A0607-70)	153	307	927	A
Hydrogen	Polysulfide	25	77	1.2	I
Hydrogen	Polyurethane (P0642-70)	39	103	19.3	A
Hydrogen	Polyurethane (P0648-90)	39	102	4.89	A
Hydrogen	Polyurethane (P0642-70)	66	151	70.4	A
Hydrogen	Polyurethane (P0648-90)	67	152	21.3	A
Hydrogen	Polyurethane (P0642-70)	94	202	155	A
Hydrogen	SBR	25	77	30.1	I

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		°C	°F		
Hydrogen	SBR (G0244-70)	38	101	46.2	A
Hydrogen	SBR (G0244-70)	84	183	245	A
Hydrogen	SBR (G0244-70)	122	251	539	A
Hydrogen	Silicone	Room		188 to 488	I
Hydrogen	Silicone	25	77	495	I
Hydrogen	Silicone (S0684-70)	39	103	1010	A
Hydrogen	Silicone	93	200	1570 to 2070	A
Hydrogen	Silicone (S0684-70)	91	195	2070	A
Hydrogen	Silicone	149	300	3300 to 8760	A
Hydrogen	Silicone (S0684-70)	156	313	4300	A
Hydrogen	FEP PTFE	-74	-101	.0113	I
Hydrogen	FEP PTFE	-46	-51	.180	I
Hydrogen	FEP PTFE	-18	0	1.05	I
Hydrogen	FEP PTFE	10	50	3.90	I
Hydrogen	FEP PTFE	25	77	9.89	I
Hydrogen	FEP PTFE	38	100	10.1	I
Hydrogen	FEP PTFE	50	122	24.7	I
Hydrogen	FEP PTFE	66	151	22.5	I
Hydrogen	FEP PTFE	75	167	49.5	I
Hydrogen	FEP PTFE	100	212	89.9	I
Hydrogen	TFE PTFE	25	77	17.8	I
Hydrogen	TFE PTFE	30	86	42.0	I
Hydrogen	TFE PTFE	50	122	63.8	I
Hydrogen Sulfide	Silicone	25	77	4870	I
Iodine	Silicone	Room		75000	I
Krypton	Butyl (B0318-70)	35	95	1.39	A
Krypton	Butyl (B0318-70)	82	180	10.3	A
Krypton	Butyl (B0318-70)	124	255	54.7	A
Krypton	Ethylene Propylene (E0529-65)	40	104	38.6	A
Krypton	Ethylene Propylene (E0692-75)	38	101	16.6	A
Krypton	Ethylene Propylene (E0529-65)	94	202	184	A
Krypton	Ethylene Propylene (E0692-75)	94	201	91.2	A
Krypton	Ethylene Propylene (E0529-65)	155	311	324	A
Krypton	Ethylene Propylene (E0692-75)	151	304	289	A
Krypton	Fluorocarbon-Viton <sup>(4)</sup>	93	200	25	A
Krypton	Natural	35	95	47.8	I
Krypton	Neoprene	38	100	32	A
Krypton	Nitrile	38	100	.935 to 4.40	A
Krypton	Nitrile (N0741-75)	39	103	1.82	A
Krypton	Nitrile	79	175	10.7 to 30.1	A
Krypton	Nitrile (N0741-75)	80	176	11.6	A
Krypton	Nitrile	121	250	27.8 to 86.6	A
Krypton	Nitrile (N0741-75)	118	245	48.9	A
Krypton	Polyacrylate (A0607-70)	38	100	14.8	A
Krypton	Polyacrylate (A0607-70)	91	195	90.4	A
Krypton	Polyacrylate (A0607-70)	153	307	464	A
Krypton	Polyurethane (P0642-70)	39	103	2.06	A
Krypton	Polyurethane (P0648-90)	39	102	.783	A
Krypton	Polyurethane (P0642-70)	66	151	6.53	A
Krypton	Polyurethane (P0648-90)	67	152	4.35	A
Krypton	Polyurethane (P0642-70)	94	202	31.9	A

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		°C	°F			
Krypton	Polyurethane (P0648-90)	94	201	36.8	A	
Krypton	SBR	38	100	7.35 to 30.8	A	
Krypton	SBR (G0244-70)	38	101	7.35	A	
Krypton	SBR	82	180	43.0 to 82.1	A	
Krypton	SBR (G0244-70)	84	183	43.0	A	
Krypton	SBR	121	250	144 to 276	A	
Krypton	SBR (G0244-70)	122	251	144	A	
Krypton	Silicone	Room		735	I	
Krypton	Silicone	38	100	521 to 708	A	
Krypton	Silicone (S0684-70)	38	101	708	A	
Krypton	Silicone	93	200	749	A	
Krypton	Silicone (S0684-70)	91	195	1440	A	
Krypton	Silicone	149	300	1030 to 3190	A	
Krypton	Silicone (S0684-70)	156	313	2320	A	
Krypton	PTFE	149	300	24	A	
Methane	Butadiene	25	77	9.77	I	
Methane	Butyl	25	77	.56	I	
Methane	Fluorocarbon	30	86	.12	I	
Methane	Natural	25	77	22.7	I	
Methane	Neoprene	25	77	2.6	I	
Methane	Nitrile	25	77	2.4	I	
Methane	Silicone	25	77	705	I	
Methane	Silicone	30	86	443	I	
Methane	FEP PTFE	25	77	.702 to .83	I	
Methane	FEP PTFE	30	86	1.05	I	
Methane	FEP PTFE	50	122	2.02	I	
Methane	FEP PTFE	75	167	4.50	I	
Methane	FEP PTFE	100	212	8.99	I	
Methane	TFE PTFE	30	86	1.13	I	
Methane	TFE PTFE	50	122	3.0	I	
Methanol	Silicone	Room		10430	I	
Neon	Natural	35	95	8.5	I	
Nitric Oxide	Silicone	Room		450	I	
Nitrogen	Butadiene	25	77	3.0	I	
Nitrogen	Butadiene	25	77	4.85	I	
Nitrogen	Butadiene	50	122	14.3	I	
Nitrogen	Butyl	25	77	.244	I	
Nitrogen	Butyl	30	86	.234	I	
Nitrogen	Butyl	50	122	1.25	I	
Nitrogen	Fluorocarbon	30	86	.233	I	
Nitrogen	Fluorocarbon	50	122	.975	I	
Nitrogen	Fluorosilicone	Room		40	DC	
Nitrogen	Isoprene	25	77	5.3	I	
Nitrogen	Isoprene	50	122	16.8	I	
Nitrogen	Natural	Room		4.8	DC	
Nitrogen	Natural	25	77	6.04 to 9.9	I	
Nitrogen	Natural	30	86	6.06 to 7.9	I	
Nitrogen	Natural	50	122	19.1	I	
Nitrogen	Neoprene	25	77	.01 to 2	I	
Nitrogen	Neoprene	30	86	.885	I	
Nitrogen	Neoprene	54	129	4.35	I	

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Gas or Liquid	Elastomer	Temperature		Permeability <sup>(1)</sup> x 10 <sup>-8</sup>	Source <sup>(2)</sup>
		°C	°F		
Nitrogen	Neoprene	85	185	16.7	I
Nitrogen	Nitrile	20	68	.46	I
Nitrogen	Nitrile	25	77	.177 to 1.89	I
Nitrogen	Nitrile	30	86	.176 to .795	I
Nitrogen	Nitrile	50	122	1.07 to 6.9	I
Nitrogen	Nitrile	79	174	13.4	I
Nitrogen	Nitroso	NR3		108	I
Nitrogen	SBR	25	77	4.7	I
Nitrogen	SBR	30	86	4.76	I
Nitrogen	Silicone	Room		75 to 120	I
Nitrogen	Silicone	Room		210	I
Nitrogen	Silicone	30	86	113 to 188	I
Nitrogen	Silicone	50	122	240	I
Nitrogen	TFE PTFE	25	77	2.4	I
Nitrogen	TFE PTFE	30	86	3.9	I
Nitrogen	TFE PTFE	50	122	7.5	I
Nitrogen	FEP PTFE	25	77	1.44	I
Nitrogen	FEP PTFE	30	86	1.9	I
Nitrogen	FEP PTFE	50	122	4.4	I
Nitrogen	FEP PTFE	75	167	9.2	I
Nitrogen	FEP PTFE	100	212	18.5	I
Nitrogen Dioxide	Silicone	Room		5701	I
Nitrogen Oxides	TFE PTFE	NR3		3475	I
Nitrogen Oxides	FEP PTFE	NR3		485	I
Nitrogen Tetroxide	TFE PTFE	25	77	0.050 to 1.00	I
Nitrogen Tetroxide	TFE PTFE	28	82	12.4	I
Nitrogen Tetroxide	TFE PTFE	28	82	3.9	I
Nitrous Oxide	Silicone	Room		3263	I
Octane	Silicone	25	77	6450	I
Oxygen	Butadiene	25	77	8.5	I
Oxygen	Butadiene	25	77	14.3	I
Oxygen	Butadiene	30	86	14.3	I
Oxygen	Butadiene	50	122	35.5	I
Oxygen	Butyl	Room		.98 to 1.05	I
Oxygen	Butyl	25	77	.89 to 4.2	I
Oxygen	Butyl	30	86	.98	I
Oxygen	Butyl	50	122	3.98	I
Oxygen	Fluorocarbon	26	79	1.7	I
Oxygen	Fluorosilicone	Room		81.3	DC
Oxygen	Fluorosilicone	Room		82.5	I
Oxygen	Fluorosilicone	26	79	78	I
Oxygen	Natural	Room		13.0	DC
Oxygen	Natural	25	77	17.5	I
Oxygen	Natural	30	86	17.48	I
Oxygen	Natural	50	122	46.4	I
Oxygen	Neoprene	23	73	3.1	I
Oxygen	Neoprene	25	77	3.0	I
Oxygen	Neoprene	25	77	1.13	I
Oxygen	Neoprene	38	100	13	A
Oxygen	Neoprene	50	122	4.73	I
Oxygen	Nitrile	25	77	.72 to 6.15	I

(1) Std cc cm/cm<sup>2</sup> sec. bar

(2) "I" denotes information from "Permeability Data for Aerospace Applications" funded by NASA and prepared by IIT Research Institute, March 1968.

"A" denotes information from Atomics International Division, Energy Systems Group, Rockwell International publication AI-AEC-13145,

"Design Guide for Reactor Cover Gas Elastomer Seals" March 7, 1975, and addendum, report ESC-DOE-13245, September 30, 1978.

"DC" denotes information from Dow Corning Bulletin 17-158, October 1972.

"P" denotes information from Parker Seal tests.

(3) "NR" Temperature not reported.

(4) Registered trademark E.I. du Pont de Nemours &amp; Co.

Note: Some of these compounds may no longer be available.

Table 3-24: Gas Permeability Rates



Gas Permeability Rates					
Gas or Liquid	Elastomer	Temperature		Permeability <sup>(1)</sup> x 10 <sup>-8</sup>	Source <sup>(2)</sup>
		°C	°F		
Oxygen	Nitrile	30	86	.72	I
Oxygen	Nitrile	50	122	3.45 to 18.9	I
Oxygen	Nitrile	20-30	68-86	.72 to 6.2	I
Oxygen	Polysulfide	23	73	5.78	I
Oxygen	Polysulfide	25	77	.22	I
Oxygen	Polyurethane	32	90	1.3 to 4.0	I
Oxygen	Polyurethane	Room		.80	DC
Oxygen	SBR	25	77	12.8	I
Oxygen	Silicone	Room		330 to 450	I
Oxygen	Silicone	21	70	195 to 443	I
Oxygen	Silicone	32	90	234	I
Oxygen	Silicone	34	93	346	I
Oxygen	Silicone	44	111	257 to 384	I
Oxygen	TFE PTFE	25	77	7.5	I
Oxygen	FEP PTFE	25	77	3.37	I
Oxygen	FEP PTFE	50	122	9.22	I
Oxygen	FEP PTFE	75	167	17.99	I
Oxygen	FEP PTFE	100	212	31.48	I
Pentane	Silicone	25	77	15000	I
Pentane	Silicone	30	86	32600	I
Pentane	Silicone	40	104	28900	I
Pentane	Silicone	50	122	25700	I
Pentane	Silicone	60	140	22900	I
Pentane	Silicone	70	158	20700	I
Phenol	Silicone	25	77	8100	I
Propane	Butadiene	25	77	22 to 40.5	I
Propane	Butyl	25	77	1.28	I
Propane	Natural	25	77	126	I
Propane	Neoprene	25	77	5.4	I
Propane	Polysulfide	25	77	1.09	I
Propane	Silicone	25	77	3080	I
Pyridene	Silicone	25	77	1580	I
Sulfur Dioxide	Silicone	Room		11250	I
Toluene	Silicone	25	77	6850	I
Water Vapor	Ethylene Propylene	Room		550 to 3700	A
Water Vapor	Ethylene Propylene (E0692-75)	Room		550	A
Xenon	Butyl	25	77	.83 to 3.0	I
Xenon	Butyl (B0318-70)	35	95	.70	A
Xenon	Butyl (B0318-70)	82	180	6.73	A
Xenon	Butyl (B0318-70)	124	255	38.1	A
Xenon	Ethylene Propylene	38	100	12.2 to 44.5	A
Xenon	Ethylene Propylene (E0529-65)	40	104	44.5	A
Xenon	Ethylene Propylene (E0692-75)	38	100	37.8	A
Xenon	Ethylene Propylene (E0692-75)	93	200	112 to 214	A
Xenon	Ethylene Propylene (E0529-65)	94	202	195	A
Xenon	Ethylene Propylene (E0692-75)	94	201	167	A
Xenon	Ethylene Propylene	149	300	260 to 520	A
Xenon	Ethylene Propylene (E0529-65)	155	311	520	A
Xenon	Ethylene Propylene (E0692-75)	151	304	460	A
Xenon	Fluorocarbon	93	200	10	A
Xenon	Natural	25	77	17.3 to 32.2	I

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Table 3-24: Gas Permeability Rates



Gas Permeability Rates						
Gas or Liquid	Elastomer	Temperature		Permeability <sup>(1)</sup> x 10 <sup>-8</sup>	Source <sup>(2)</sup>	
		°C	°F			
Xenon	Natural	35	95	72.5	I	
Xenon	Neoprene	25	77	3.4 to 7.5	I	
Xenon	Neoprene	38	100	40	A	
Xenon	Nitrile	25	77	.60 to 2.85	I	
Xenon	Nitrile	38	100	.94	A	
Xenon	Nitrile (N0741-75)	38	101	3.31	A	
Xenon	Nitrile	79	175	7.83 to 36.8	A	
Xenon	Nitrile (N0741-75)	81	178	13.2	A	
Xenon	Nitrile	121	250	38.5 to 101	A	
Xenon	Polyacrylate (A0607-70)	38	100	10.9	A	
Xenon	Polyacrylate (A0607-70)	91	195	108	A	
Xenon	Polyacrylate (A0607-70)	153	307	549	A	
Xenon	Polyurethane (P0642-70)	39	103	2.57	A	
Xenon	Polyurethane (P0648-90)	39	102	1.03	A	
Xenon	Polyurethane (P0642-70)	66	151	9.58	A	
Xenon	Polyurethane (P0648-90)	67	152	6.58	A	
Xenon	Polyurethane (P0642-70)	94	202	43.0	A	
Xenon	Polyurethane (P0648-90)	94	201	24.5	A	
Xenon	SBR (G0244-70)	38	101	14.9	A	
Xenon	SBR (G0244-70)	84	183	66.2	A	
Xenon	SBR (G0244-70)	122	251	173	A	
Xenon	Silicone	Room		1523	I	
Xenon	Silicone	38	100	109 to 1220	A	
Xenon	Silicone (S0684-70)	38	101	1220	A	
Xenon	Silicone	93	200	1290 to 2180	A	
Xenon	Silicone (S0684-70)	91	195	2180	A	
Xenon	Silicone (S0684-70)	148	299	700	A	
Xenon	Silicone	149	300	1110 (sic) to 2200	A	
Xenon	Silicone (S0684-70)	144	291	2200	A	
Xenon	PTFE	149	300	5.3	A	

(1) Std cc cm/cm2 sec. bar

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