

Definition of vacuum:

Vacuum generally refers to the gaseous state with a pressure lower than one standard atmosphere. Compared with the normal atmospheric state, the gas in a vacuum is relatively thin, that is, the number of molecules per unit volume is smaller. The probability of collisions between molecules or between molecules and other particles (such as electrons and ions) is reduced, and the number of times that molecules collide with a unit surface area (such as the walls of a container) per unit time is also relatively decreased.

Conversion relationships of pressure units

Unit	Pa	Kpa	Mpa	Psi	mmHg	in.Hg	mmH2O	in.H2O	mbar	bar	Torr	atm
Pa	1	0.001	0.000001	0.00014	0.0075	0.00029	0.10204	0.00401	0.01	0.0001	0.0075	0.000009869
KPa	1000	1	0.001	0.14503	7.50061	0.29528	102.04786	4.01875	10	0.01	7.50061	0.009869
MPa	1000000	1000	1	145.03725	7500.61682	295.28744	102047.865	4018.75154	10000	10	7500.61682	9.869
Psi	6894.78017	6.89478	0.00689	1	51.7151	2.03594	703.5976	27.7084	68.9478	0.06894	51.7151	0.06804
mmHg	133.32236	0.13332	0.000132	0.01933	1	0.03936	13.60526	0.53578	1.33322	0.00133	1	0.00131
in.Hg	3386.53074	3.38653	0.00338	0.49117	25.40106	1	345.58823	13.60962	33.8653	0.03386	25.40106	0.03342
mmH2O	9.79932	0.00979	0.00000979	0.00142	0.0735	0.00289	1	0.03938	0.09799	0.00009799	0.0735	0.0000967
in.H2O	248.83349	0.24883	0.00024883	0.03609	1.8664	0.07347	25.39292	1	2.48833	0.00248	1.8664	0.00245
mbar	100	0.1	0.0001	0.0145	0.75006	0.02952	10.20478	0.40187	1	0.001	0.75006	0.00098
bar	100000	100	0.1	14.50372	750.06168	29.52874	10204.7865	401.87515	1000	1	750.06168	0.98692
Torr	133.32236	0.1332	0.000132	0.01933	1	0.03936	13.60526	0.53578	1.33322	0.00133	1	0.00131
atm	101325	101.325	0.101325	14.6959	760	29.92	10340	407.2	1013.25	1.01325	760	1