

Conversion Factors – Pressure Units

When working with cryogenic, vacuum, and pressure technologies, you may encounter a variety of units of measure for pressure. The conversion factor chart below covers the range of pressure units you may encounter.

Conversion factors (n) for pressure units (1X=nY)

Y X	dyne/ cm ²	microns of Hg	N/m ² (Pascal)	mm of water or kg/m ²	millibar	cm of water
dyne/cm ² or microbar	1	7.5×10 ⁻¹	1×10 ⁻¹	1.01×10 ⁻²	1×10 ⁻³	1.01×10 ⁻³
microns of Hg	1.33	1	1.33×10 ⁻¹	1.35×10 ⁻²	1.33×10 ⁻³	1.35×10 ⁻³
N/m ² (Newton per m ²)	10	7.5	1	1.01×10 ⁻¹	1×10 ⁻²	1.01×10 ⁻²
Mm of water or kg/m ²	98	73	9.8	1	9.8×10 ⁻²	1×10 ⁻¹
millibar (mb)	1×10 ³	750	100	10.1	1	1.01
cm of water or Ger (Guericke)	980	730	98	10	9.8×10 ⁻¹	1
Torr	1.33×10 ³	1×10 ³	133.3	13.59	1.33	1.35
in of Hg	3.3×10 ⁴	2.54×10 ⁴	3386	340	33	34
lb/in ² (p.s.i)	6.8×10 ⁴	5.17×10 ⁴	6894.7	700	68	70
Techn. sphere (at) Kg/cm ²	9.8×10 ⁵	7.3×10 ⁵	9.81×10 ⁴	1×10 ⁴	980	1×10 ³
Bar	1×10 ⁶	7.5×10 ⁵	1×10 ⁵	1.01×10 ⁴	1×10 ³	1.01×10 ³
Physical atmosphere (atm)	1.01×10 ⁶	7.6×10 ⁵	1.01×10 ⁵	1.03×10 ⁴	1.04×10 ³	1.03×10 ³

Conversion factors (n) for pressure units (1X=nY) (Continued)

Y X	Torr	in of Hg	lb/in ² (psi)	at (kg/cm ²)	Bar	atm
dyne/cm ² or microbar	7.5×10 ⁻⁴	2.95×10 ⁻⁵	1.45×10 ⁻⁵	1.01×10 ⁻⁶	1×10 ⁻⁶	9.8×10 ⁻⁷
microns of Hg	1×10 ⁻³	3.93×10 ⁻⁵	1.93×10 ⁻⁵	1.33×10 ⁻⁶	1.33×10 ⁻⁶	1.31×10 ⁻⁶
N/m ² (Newton per m ²)	7.5×10 ⁻³	2.95×10 ⁻⁴	1.45×10 ⁻⁴	1.10×10 ⁻⁵	1×10 ⁻⁵	9.8×10 ⁻⁵
Mm of water or kg/m ²	7.3×10 ⁻²	2.89×10 ⁻³	1.42×10 ⁻³	1×10 ⁻⁴	9.8×10 ⁻⁵	9.6×10 ⁻⁵
millibar (mb)	7.5×10 ⁻¹	2.95×10 ⁻²	1.45×10 ⁻²	1.01×10 ⁻³	1×10 ⁻³	9.8×10 ⁻⁴
cm of water or Ger (Guericke)	7.3×10 ⁻¹	2.89×10 ⁻²	1.42×10 ⁻²	1×10 ⁻³	9.8×10 ⁻⁴	9.6×10 ⁻⁴
Torr	1	3.93×10 ⁻²	1.93×10 ⁻²	1.35×10 ⁻³	1.33×10 ⁻³	1.31×10 ⁻³
in of Hg	25.4	1	4.9×10 ⁻¹	3.4×10 ⁻²	3.3×10 ⁻²	3.3×10 ⁻²
lb/in ² (p.s.i)	51.7	2.03	1	7×10 ⁻²	6.8×10 ⁻²	6.8×10 ⁻²
Techn. sphere (at) Kg/cm ²	735	28.9	14.2	1	9.8×10 ⁻¹	9.6×10 ⁻¹
Bar	750	29.5	14.5	1.01	1	9.8×10 ⁻¹
Physical atmosphere (atm)	760	29.92	14.7	1.03	1.01	1