

# Pressure Unit Conversion Chart

Read across: 1 unit in the left column equals the value shown under each column unit. Absolute values; the factors also apply to gauge pressure.

| 1 ↓ =  | Pa                | hPa        | kPa                      | MPa                      | mbar       | bar                      | atm                      | Torr       | mmHg               | micron                  | psi                      | inHg                     |
|--------|-------------------|------------|--------------------------|--------------------------|------------|--------------------------|--------------------------|------------|--------------------|-------------------------|--------------------------|--------------------------|
| Pa     | 1                 | 0.01       | 0.001                    | 1×10 <sup>-6</sup>       | 0.01       | 1×10 <sup>-5</sup>       | 9.86923×10 <sup>-6</sup> | 0.00750062 | 0.00750062         | 7.50062                 | 1.45038×10 <sup>-4</sup> | 2.953×10 <sup>-4</sup>   |
| hPa    | 100               | 1          | 0.1                      | 1×10 <sup>-4</sup>       | 1          | 0.001                    | 9.86923×10 <sup>-4</sup> | 0.750062   | 0.750062           | 750.062                 | 0.0145038                | 0.02953                  |
| kPa    | 1,000             | 10         | 1                        | 0.001                    | 10         | 0.01                     | 0.00986923               | 7.50062    | 7.50062            | 7,500.62                | 0.145038                 | 0.2953                   |
| MPa    | 1×10 <sup>6</sup> | 10,000     | 1,000                    | 1                        | 10,000     | 10                       | 9.86923                  | 7,500.62   | 7,500.62           | 7.50062×10 <sup>6</sup> | 145.038                  | 295.3                    |
| mbar   | 100               | 1          | 0.1                      | 1×10 <sup>-4</sup>       | 1          | 0.001                    | 9.86923×10 <sup>-4</sup> | 0.750062   | 0.750062           | 750.062                 | 0.0145038                | 0.02953                  |
| bar    | 100,000           | 1,000      | 100                      | 0.1                      | 1,000      | 1                        | 0.986923                 | 750.062    | 750.062            | 750,062                 | 14.5038                  | 29.53                    |
| atm    | 101,325           | 1,013.25   | 101.325                  | 0.101325                 | 1,013.25   | 1.01325                  | 1                        | 760        | 760                | 760,000                 | 14.6959                  | 29.9213                  |
| Torr   | 133.322           | 1.33322    | 0.133322                 | 1.33322×10 <sup>-4</sup> | 1.33322    | 0.00133322               | 0.00131579               | 1          | 1                  | 1,000                   | 0.0193368                | 0.0393701                |
| mmHg   | 133.322           | 1.33322    | 0.133322                 | 1.33322×10 <sup>-4</sup> | 1.33322    | 0.00133322               | 0.00131579               | 1          | 1                  | 1,000                   | 0.0193368                | 0.0393701                |
| micron | 0.133322          | 0.00133322 | 1.33322×10 <sup>-4</sup> | 1.33322×10 <sup>-7</sup> | 0.00133322 | 1.33322×10 <sup>-6</sup> | 1.31579×10 <sup>-6</sup> | 0.001      | 1×10 <sup>-3</sup> | 1                       | 1.93368×10 <sup>-5</sup> | 3.93701×10 <sup>-5</sup> |
| psi    | 6,894.76          | 68.9476    | 6.89476                  | 0.00689476               | 68.9476    | 0.0689476                | 0.068046                 | 51.7149    | 51.7149            | 51,714.9                | 1                        | 2.03602                  |
| inHg   | 3,386.39          | 33.8639    | 3.38639                  | 0.00338639               | 33.8639    | 0.0338639                | 0.0334211                | 25.4       | 25.4               | 25,400                  | 0.491154                 | 1                        |

Units and exact values

| Unit                              | Value in Pa       | Definition                                                      |
|-----------------------------------|-------------------|-----------------------------------------------------------------|
| Pascal (Pa)                       | 1                 | SI unit of pressure: one newton per square metre (1 N/m²).      |
| Hectopascal (hPa)                 | 100               | 100 Pa. Numerically identical to the millibar.                  |
| Kilopascal (kPa)                  | 1,000             | 1,000 Pa; 100 kPa = 1 bar.                                      |
| Megapascal (MPa)                  | 1×10 <sup>6</sup> | 1,000,000 Pa = 10 bar.                                          |
| Millibar (mbar)                   | 100               | 1/1,000 bar = 100 Pa = 1 hPa.                                   |
| Bar (bar)                         | 100,000           | Exactly 100,000 Pa. Close to, but not equal to, one atmosphere. |
| Standard atmosphere (atm)         | 101,325           | Defined as exactly 101,325 Pa, the mean sea-level air pressure. |
| Torr                              | 133.3223684       | 1/760 of a standard atmosphere = 133.322368 Pa.                 |
| Millimetre of mercury (mmHg)      | 133.3223874       | 133.322387415 Pa (conventional). Within 0.000015 % of the Torr. |
| Micron of mercury (mTorr)         | 0.1333223684      | 1/1,000 Torr = 0.133322 Pa.                                     |
| Pound-force per square inch (psi) | 6,894.757293      | 6,894.757293168 Pa. psia = absolute, psig = above atmosphere.   |
| Inch of mercury (inHg)            | 3,386.389         | 3,386.389 Pa (conventional, 0 °C). 29.92 inHg = 1 atm.          |

bar ↔ psi

| bar | psi     |
|-----|---------|
| 0.5 | 7.2519  |
| 1   | 14.504  |
| 1.5 | 21.756  |
| 2   | 29.008  |
| 2.5 | 36.259  |
| 3   | 43.511  |
| 4   | 58.015  |
| 5   | 72.519  |
| 6   | 87.023  |
| 8   | 116.03  |
| 10  | 145.04  |
| 16  | 232.06  |
| 20  | 290.08  |
| 50  | 725.19  |
| 100 | 1,450.4 |
| 200 | 2,900.8 |

mbar ↔ Torr

| mbar               | Torr                     |
|--------------------|--------------------------|
| 1,013.25           | 760                      |
| 500                | 375.03                   |
| 100                | 75.006                   |
| 10                 | 7.5006                   |
| 1                  | 0.75006                  |
| 0.1                | 0.075006                 |
| 0.01               | 0.0075006                |
| 0.001              | 7.5006×10 <sup>-4</sup>  |
| 1×10 <sup>-4</sup> | 7.5006×10 <sup>-5</sup>  |
| 1×10 <sup>-5</sup> | 7.5006×10 <sup>-6</sup>  |
| 1×10 <sup>-6</sup> | 7.5006×10 <sup>-7</sup>  |
| 1×10 <sup>-7</sup> | 7.5006×10 <sup>-8</sup>  |
| 1×10 <sup>-8</sup> | 7.5006×10 <sup>-9</sup>  |
| 1×10 <sup>-9</sup> | 7.5006×10 <sup>-10</sup> |