Vacuum quality is subdivided into ranges according to the technology required to achieve it or measure it. These ranges do not have universally agreed definitions, but a typical distribution is as follows:

	pressure (Torr)	pressure (Pa)
Atmospheric pressure	760	101.3 kPa
Low vacuum	760 to 25	100 kPa to 3 kPa
Medium vacuum	25 to 1×10^{-3}	3 kPa to 100 mPa
High vacuum	1×10^{-3} to 1×10^{-9}	100 mPa to 100 nPa
Ultra high vacuum	1×10^{-9} to 1×10^{-12}	100 nPa to 100 pPa
Extremely high vacuum	$<1\times10^{-12}$	<100 pPa
Outer Space	1×10^{-6} to $<3\times10^{-17}$	100 µPa to <3fPa
Perfect vacuum	0	0 Pa

- **Atmospheric pressure** is variable but standardized at 101.325 kPa (760 Torr)
- **Low vacuum**, also called *rough vacuum* or *coarse vacuum*, is vacuum that can be achieved or measured with rudimentary equipment such as a vacuum cleaner and a liquid column manometer.
- **Medium vacuum** is vacuum that can be achieved with a single pump, but the pressure is too low to measure with a liquid or mechanical manometer. It can be measured with a McLeod gauge, thermal gauge or a capacitive gauge.
- **High vacuum** is vacuum where the MFP of residual gases is longer than the size of the chamber or of the object under test. High vacuum usually requires multi-stage pumping and ion gauge measurement. Some texts differentiate between high vacuum and *very high vacuum*.
- **Ultra high vacuum** requires baking the chamber to remove trace gases, and other special procedures. British and German standards define ultra high vacuum as pressures below 10^{-6} Pa (10^{-8} Torr).[39][40]
- **Deep space** is generally much more empty than any artificial vacuum. It may or may not meet the definition of high vacuum above, depending on what region of space and astronomical bodies are being considered. For example, the MFP of interplanetary space is smaller than the size of the solar system, but larger than small planets and moons. As a result, solar winds exhibit continuum flow on the scale of the solar system, but must be considered as a bombardment of particles with respect to the Earth and Moon.
- **Perfect vacuum** is an ideal state of no particles at all. It cannot be achieved in a laboratory, although there may be small volumes which, for a brief moment, happen to have no particles of matter in them. Even if all particles of matter were removed, there would still be photons and gravitons, as well as dark energy, virtual particles, and other aspects of the quantum vacuum.

Tabela de conversão de unidades:

1 Torr = 1/760 atmosfera (atm)
133 pascals (Pa)
1 mm Hg
1,33 mbar

TABELA 1–Parâmetros para vários tipos de vácuo[3]

	Pressão Atmosférica	Médio vácuo	Alto vácuo	Ultra alto vácuo
Pressão (Torr)	760	10^{-3}	10^{-6}	10^{-8}
Número de moléculas por cm^3	2×10^{19}	3×10^{13}	3×10^{10}	3×10^{8}
Número de moléculas por segundo que bombardeiam as paredes	3×10^{23}	4×10^{17}	4×10^{14}	4×10^{12}
Caminho livre médio entre as colisões (cm)	$6{,}5 \times 10^{-6}$	5	500	5×10^{5}