

Fundamental physical constants and values

gravitational constant, $G = 6.674 \cdot 10^{-11} \text{ [m}^3\text{kg}^{-1}\text{s}^{-2}\text{]}$

average gravity acceleration for our latitude, $g = 9.81 \text{ ms}^{-2}$

Avogadro's constant, $N_A = 6.022 \cdot 10^{23} \text{ [mol}^{-1}\text{]}$

Boltzmann constant, $k = 1.380 \cdot 10^{-23} \text{ [JK}^{-1}\text{]}$

universal gas constant, $R = 8.314 \text{ [JK}^{-1}\text{mol}^{-1}\text{]}$

absolute zero $T_0 = 0 \text{ [K]} = 273.15 \text{ [}^\circ\text{C]}$

electric permittivity of vacuum, $\epsilon_0 = 8.854 \cdot 10^{-12} \text{ [Fm}^{-1}\text{]}$

magnetic permeability of vacuum, $\mu_0 = 4\pi \cdot 10^{-7} \text{ [Hm}^{-1}\text{]}$

elementary weight (mass) of electron, $m_e = 9.109 \cdot 10^{-31} \text{ [kg]}$

elementary weight (mass) of proton, $m_p = 1.672 \cdot 10^{-27} \text{ [kg]}$

elementary charge of electron, $e = -1.602 \cdot 10^{-19} \text{ [C]}$

elementary charge of proton = $+1.602 \cdot 10^{-19} \text{ [C]}$

magnetic moment of electron = $-9284.76 \cdot 10^{-27} \text{ [JT}^{-1}\text{]}$

speed of light, $c = 299\,792\,458 \text{ [ms}^{-1}\text{]} \cong 300\,000 \text{ [kms}^{-1}\text{]}$

Planck's constant, $h = 6.626 \cdot 10^{-34} \text{ [m}^2\text{kgs}^{-1}\text{]}$