

Fundamental Physical Constants — Adopted values

Quantity	Symbol	Value	Unit	Relative std. uncert. u_r
relative atomic mass ¹ of ^{12}C	$A_r(^{12}\text{C})$	12		exact
molar mass constant	M_u	1×10^{-3}	kg mol ⁻¹	exact
molar mass of ^{12}C	$M(^{12}\text{C})$	12×10^{-3}	kg mol ⁻¹	exact
conventional value of Josephson constant ²	$K_{\text{J-90}}$	483 597.9	GHz V ⁻¹	exact
conventional value of von Klitzing constant ³	$R_{\text{K-90}}$	25 812.807	Ω	exact
standard-state pressure		100	kPa	exact
standard atmosphere		101.325	kPa	exact

¹ The relative atomic mass $A_r(X)$ of particle X with mass $m(X)$ is defined by $A_r(X) = m(X)/m_u$, where $m_u = m(^{12}\text{C})/12 = M_u/N_A = 1 \text{ u}$ is the atomic mass constant, N_A is the Avogadro constant, and u is the atomic mass unit. Thus the mass of particle X in u is $m(X) = A_r(X) \text{ u}$ and the molar mass of X is $M(X) = A_r(X)M_u$.

² This is the value adopted internationally for realizing representations of the volt using the Josephson effect.

³ This is the value adopted internationally for realizing representations of the ohm using the quantum Hall effect.