

SI UNITS CONVERSION TABLE (the units added { } is permitted to use)

Kinds of Quantity (Name of Unit)	Symbol of Unit [Definition] (a prefix added example)	Units avoid using (Relation to SI units)
Length (metre)	m (km, mm, μm , nm)	\AA ($=10^{-10} \text{ m}=0.1 \text{ nm}$)
Area	m² (cm ² , mm ² , μm^2)	
Volume	m³ (dm ³ , cm ³ , mm ³) {L($=10^{-3} \text{ m}^3=\text{dm}^3$)}	mL($=10^{-6} \text{ m}^3=\text{cm}^3$)
Mass (kilogramme)	kg (Mg, g, mg, μg) {t($=10^3 \text{ kg}=\text{Mg}$)}	
Density	kg/m³ (Mg/m ³)	g/cm ³ ($=10^3 \text{ kg/m}^3=\text{Mg/m}^3$)
Time (second)	s (Ms, ks, ms, μs) {min($=60 \text{ s}$)} {h($=3.6 \text{ ks}$)} {d($=86.4 \text{ ks}$)}	1-y $\doteq 31.556926 \times 10^6 \text{ s}$ ($\doteq 365.2422 \text{ d}$)
Frequency (hertz)	Hz [s^{-1}] (GHz, MHz, kHz)	
Wave Number	m⁻¹	\AA^{-1} ($=10^{10} \text{ m}^{-1}$) cm ⁻¹ ($=10^2 \text{ m}^{-1}$)
Speed	m/s	
Acceleration	m/s²	
Diffusion Coefficient Kinematic Viscosity	m²/s	St($=10^{-4} \text{ m}^2/\text{s}=\text{cm}^2/\text{s}$)
Power (newton)	N [$\text{kg} \cdot \text{m}/\text{s}^2$]	dyn($=10^{-5} \text{ N}=10 \mu\text{N}$) kgf($=9.80665 \text{ N}$)
Pressure (pascal)	Pa [N/m^2] (GPa, MPa, mPa)	kgf/mm ² ($=9.80665 \text{ MPa}$) bar($=10^5 \text{ Pa}=0.1 \text{ MPa}$) Torr($\doteq 133.32 \text{ Pa}$) atm($=101325 \text{ Pa}$)
Surface Tension	N/m	dyn/cm($=10^{-3} \text{ N/m}=\text{mN/m}$)
Viscosity	Pa · s	P($=10^{-1} \text{ Pa} \cdot \text{s}$)
Stress Intensity Factor	MPa · m^{1/2}	kgf/mm ^{3/2} ($=0.31012 \text{ MPa} \cdot \text{m}^{1/2}$) N/mm ^{3/2} ($=0.031623 \text{ MPa} \cdot \text{m}^{1/2}$)

Quantity of Substance	mol	
Molecular Density	mol/m³ {mol/L(=10 ³ mol/m ³ =kmol/m ³)}	
Molecular Mass Density	mol/kg	
Chemical Reaction Rate	mol/s	
Energy Work Heat	J [N · m] (MJ, kJ, mJ) {eV(=1.60218×10 ⁻¹⁹ J)}	erg(=10 ⁻⁷ J)=0.1 μJ) kgf · m(=9.80665 J) cal _{th} (=4.1840 J) cal _{IT} (=4.1868 J) kWh(=3.6×10 ⁶ J)=3.6 MJ)
Moment of Force	N · m	kgf · m(=9.80665 N · m)
Power	W [J/s=V · A]	
Heat Flow Density	W/m² J/mol (kJ/mol)	cal/mol(= 4.184J/mol) erg/atom (= 1×10 ⁻⁷ J/atom = 6.022×10 ¹⁶ J/mol) eV/atom (= 1.60218×10 ⁻¹⁹ J/atom = 9.6485×10 ⁴ J/mol)
Surface Energy	J/m²	erg/cm ² (= 10 ⁻³ J/m ² =mJ/m ²)
Temperature	K {°C(= T(K)-273.15)}	
Thermal Conductivity	W/(m · K)	cal/(cm · sec · deg) (=0.4184kJ/(s · m · K))
Specific Heat	J/(kg · K)	cal/(g · deg) (= 4.184kJ/(kg · K))
Entropy	J/K	cal/deg(= 4.184J/K)
Molecular Entropy	J/(mol · K)	
Current	A	
Current Density	A/m²	
Charge	C [A · s]	
Voltage	V [J/(A · s)]	
Electrical Field Strength	V/m	
Resistance	Ω [V/A]	
Solution Resistance	Ωm	Ωcm(= 10 ⁻² Ωm)
Electrical Conductance	S [A/V]	

Conductivity	S/m	
Electric Capacitance	F[C/V]	
Permittivity	F/m	
Luminous Intensity	cd	
Luminous Flux	lm[cd · sr]	
Illuminance	lx[cd · sr/m²]	
Angle	rad {1° = (π/180)rad} {1' = (π/10800)rad} {1" = (π/648000)rad}	
Solid Angle	sr	
Radiation Strength	J/(m² · s)	erg/cm ² · s (=mJ/(m ² · s))
Exposure	C/kg (μC/kg, nC/kg)	R(=2.58×10 ⁻⁴ C/kg =0.258mC/kg)
Absorbed Dose	Gy[J/kg]	rad (=10 ⁻² J/kg=10mGy)
Radioactivity	Bq[s⁻¹] (MBq, kBq)	Ci (=3.7×10 ¹⁰ /s=37GBq)
Mass Absorption Coefficient	m²/kg	cm ² /g(=0.1m ² /kg)
Equivalent Dose	Sv[J/kg]	rem(=100Sv)

Kinds of Quantity (Name of Unit)	Symbol of Unit [Definition]	Units avoid using (Relation to SI units)	Symbol of Unit [Definition]	Units avoid using (Relation to MKSA units)
	SI Unit (E – B correspondence) $B = \mu_0(H + M)$	CGS Unit $B = H + 4\pi M$	MKSA Unit (E – H correspondence) $B = \mu_0 H + I$	CGS Unit $B = H + 4\pi M$
Magnetic Field Strength	A/m	Oe ($= 10^3 / 4\pi$) A/m	A/m	Oe ($= 10^3 / 4\pi$) A/m
Magnetic Flux (weber)	Wb	Mx ($= 10^{-8}$ Wb = 10 nWb)	Wb	Mx ($= 10^{-8}$ Wb = 10 nWb)
Magnetic Field (tesla)	T Wb/m ²	G ($= 10^{-4}$ T = 0.1mT), (($= 10^{-4}$ Wb/m ² = 0.1mWb/m ²))	T Wb/m ²	G ($= 10^{-4}$ T = 0.1mT), (($= 10^{-4}$ Wb/m ² = 0.1mWb/m ²))
Energy Density	J/m ³	G · Oe(0.1/4π)J/m ³	J/m ³	G · Oe(0.1/4π)J/m ³
(Volume) Magnetic Field Strength	A/m J/(T · m ³)	emu/cm ³ , emu/cc ($= 10^3$ A/m, 10^3 J/(T · m ³))	Wb/m ²	emu/cm ³ , emu/cc ($4\pi \times 10^{-4}$ Wb/m ²)
(Mass) Magnetic Field Strength	(A · m ²)/kg J/(T · kg)	emu/g ($= A \cdot m^2/kg = J/(T \cdot kg)$)	(Wb · m)/kg	emu/g ($4\pi \times 10^{-7}$ Wb · m/kg)
Inductance (henry)	H Wb/A		H	
(Volume) Magnetic Susceptibility	No Dimensions	No Dimensions ($= 4\pi$)	H/m	No Dimensions ($= (4\pi)^2 \cdot 10^{-7}$ H/m)
(Mass) Magnetic Susceptibility	m ³ /kg	cm ³ /g ($= 4\pi \cdot 10^{-3}$ m ³ /kg)	Hm ² /kg	cm ³ /g ($= (4\pi)^2 \cdot 10^{-10}$ Hm ² /kg)
Magnetic Permeability	H/m	No Dimensions ($= 4\pi \cdot 10^{-7}$ H/m)	H/m	No Dimensions ($= 4\pi \cdot 10^{-7}$ H/m)