

Conversions

Length

1 meter (m)	= 39.37 inches (in)
1 inch (in)	= 2.54 centimeters (cm)-exact
1 angstrom (Å)	= 1×10^{-10} meters (m)

Mass

1 kilogram (kg)	= 2.205 pounds (lb)
1 pound (lb)	= 453.6 grams (g)
1 atomic mass unit (amu)	= 1.661×10^{-24} grams (g)

Pressure

1 atmosphere (atm)	= 760 mm Hg (torr)
	= 1.01325×10^5 Pascals (pa)

Volume

1 liter (L)	= 1000 milliliters (mL)
	= 1000 cubic centimeters (cm ³)

Energy

1 joule (J)	= $1 \text{ kg} \cdot \text{m}^2/\text{s}^2$
1 calorie (cal)	= 4.184 J
1 volt (V)	= 96.485 kJ/mol

Force

1 newton (N)	= $1 \text{ kg} \cdot \text{m}/\text{s}^2$
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Temperature

0 Kelvin (K)	= -273.15 °Celsius (C)
	= -459.67 °Fahrenheit (F)
°Fahrenheit (F)	= $(9/5) \text{ °C} + 32^\circ$
°Celsius (C)	= $(5/9)(\text{°F} - 32^\circ)$
Kelvin (K)	= $\text{°C} + 273.15^\circ$

Physical Constants

Avogadro's number N_A	= $6.0221 \times 10^{23} \text{ mol}^{-1}$
Electronic charge e	= $1.6022 \times 10^{-19} \text{ Coulomb (C)}$
Electron rest mass m_e	= $9.1094 \times 10^{-31} \text{ kg}$
Faraday constant F	= $9.6485 \times 10^4 \text{ C/mol}$
Gas constant R	= $0.08206 \text{ L} \cdot \text{atm}/(\text{mol} \cdot \text{K})$
	= $8.3145 \text{ J}/(\text{mol} \cdot \text{K})$
	= $1.9872 \text{ cal}/(\text{mol} \cdot \text{K})$
Neutron rest mass m_n	= $1.675 \times 10^{-27} \text{ kg}$
Planck's constant h	= $6.6261 \times 10^{-34} \text{ J} \cdot \text{s}$
Proton rest mass m_p	= $1.6726 \times 10^{-27} \text{ kg}$
Speed of light c	= $2.9979 \times 10^8 \text{ m/s}$

Acid-Base Table

Acid	K_a	pK_a	Base
HClO ₄	>>1	<<0	ClO ₄ ¹⁻
HX (X=I, Br, Cl)	>>1	<<0	X ¹⁻
H ₂ SO ₄	>>1	<<0	HSO ₄ ¹⁻
HNO ₃	>>1	<<0	NO ₃ ¹⁻
H ₃ O ¹⁺	1.0	0	H ₂ O
H ₂ SO ₃	1.5×10^{-2}	1.82	HSO ₃ ¹⁻
HSO ₄ ¹⁻	1.2×10^{-2}	1.92	SO ₄ ²⁻
H ₃ PO ₄	7.5×10^{-3}	2.12	H ₂ PO ₄ ¹⁻
HF	7.2×10^{-4}	3.14	F ¹⁻
HNO ₂	4.0×10^{-4}	3.40	NO ₂ ¹⁻
HC ₂ H ₃ O ₂	1.8×10^{-5}	4.74	C ₂ H ₃ O ₂ ¹⁻
H ₂ CO ₃	4.3×10^{-7}	6.37	HCO ₃ ¹⁻
HSO ₃ ¹⁻	1.0×10^{-7}	7.00	SO ₃ ²⁻
H ₂ S	1.0×10^{-7}	7.00	HS ¹⁻
H ₂ PO ₄ ¹⁻	6.2×10^{-8}	7.21	HPO ₄ ²⁻
HClO	3.5×10^{-8}	7.46	ClO ¹⁻
NH ₄ ¹⁺	5.6×10^{-10}	9.25	NH ₃
HCN	4.0×10^{-10}	9.40	CN ¹⁻
HCO ₃ ¹⁻	4.7×10^{-11}	10.33	CO ₃ ²⁻
HPO ₄ ²⁻	4.8×10^{-13}	12.32	PO ₄ ³⁻
HS ¹⁻	1.3×10^{-13}	12.89	S ²⁻
H ₂ O	1.0×10^{-14}	14.00	OH ¹⁻
NH ₃	<<10 ⁻¹⁴	>>14	NH ₂ ¹⁻
OH ¹⁻	<<10 ⁻¹⁴	>>14	O ²⁻

SI Prefixes

10 ⁹	giga (G)
10 ⁶	mega (M)
10 ³	kilo (K)
10 ⁻¹	deci (d)
10 ⁻²	centi (c)
10 ⁻³	milli (m)
10 ⁻⁶	micro (μ)
10 ⁻⁹	nano (n)
10 ⁻¹²	pico (p)