

Tabla con Factores de Conversión de Unidades

Dimensión	Sistema Métrico	Sistema Métrico / Inglés
Aceleración	1 m/s <sup>2</sup> = 100 m/cm <sup>2</sup>	1 m/s <sup>2</sup> = 3.2808 ft/s <sup>2</sup> 1 ft/s <sup>2</sup> = 0.3048 m/s <sup>2</sup>
Área	1 m <sup>2</sup> = 10 <sup>4</sup> cm <sup>2</sup> = 10 <sup>6</sup> mm <sup>2</sup> = 10 <sup>-6</sup> km <sup>2</sup>	1 m <sup>2</sup> = 1550 in <sup>2</sup> = 10.764 ft <sup>2</sup> 1 ft <sup>2</sup> = 144 in <sup>2</sup> = 0.09290304 m <sup>2</sup>
Densidad	1 g/cm <sup>3</sup> = 1 kg/L = 1000 kg/m <sup>3</sup>	1 g/cm <sup>3</sup> = 62.428 lbm/ft <sup>3</sup> = 0.036127 lbm/in <sup>3</sup> 1 lbm/in <sup>3</sup> = 1728 lbm/ft <sup>3</sup> 1 kg/m <sup>3</sup> = 0.062428 lbm/ft <sup>3</sup>
Energía, calor, trabajo, energía interna, entalpía	1 kJ = 1000 J = 1000 N·m = 1 kPa·m <sup>3</sup> 1 kJ/kg = 1000 m <sup>2</sup> /s <sup>2</sup> 1 kWh = 3660 kJ 1 cal = 4.184 J 1 IT cal = 4.1868 J 1 Cal = 4.1868 kJ	1 kJ = 0.94782 Btu 1 Btu = 1.055056 kJ = 5.40395 psia·ft <sup>3</sup> = 778.169 lbf·ft 1 Btu/lbm = 25.037 ft <sup>2</sup> /s <sup>2</sup> = 2.326 kJ/kg 1 kJ/kg = 0.430 Btu/lbm 1 kWh = 3412.14 Btu
Fuerza	1 N = 1 kg·m/s <sup>2</sup> = 10 <sup>5</sup> dina 1 kgf = 9.80665 N	1 N = 0.22481 lbf 1 lbf = 32.174 lbm·ft/s <sup>2</sup> = 4.44822 N
Flujo de calor	1 W/cm <sup>2</sup> = 10 <sup>4</sup> W/m <sup>2</sup>	1 W/m <sup>2</sup> = 0.3171 Btu/h·ft <sup>2</sup>
Coeficiente de transferencia de calor	1 W/m <sup>2</sup> ·°C = 1 W/m <sup>2</sup> ·K	1 W/m <sup>2</sup> ·°C = 0.17612 Btu/h·ft <sup>2</sup> ·°F
Longitud	1 m = 100 cm = 1000 mm = 10 <sup>6</sup> μm 1 km = 1000 m	1 m = 39.370 in = 3.2808 ft = 1.0926 yd 1 ft = 12 in = 0.3048 m 1 milla = 5280 ft = 1.6093 km 1 in = 2.54 cm
Masa	1 kg = 1000 g 1 tonelada métrica = 1000 kg	1 kg = 2.2046226 lbm 1 lbm = 0.45359237 kg 1 onza = 28.3495 g 1 slug = 32.174 lbm = 14.5939 kg 1 ton corta = 2000 lbm = 907.1847 kg
Potencia, velocidad de transferencia de calor	1 W = 1 J/s 1 kW = 1000 W = 1.341 hp 1 hp = 745.7 W 1 ton de refrigeración = 3516.85 W	1 kW = 3412.14 Btu/h = 737.56 lbf·ft/s 1 hp = 550 lbf·ft/s = 0.7068 Btu/s = 42.41 Btu/min = 2544.5 Btu/h = 0.74570 kW 1 hp de caldera = 33.475 Btu/h 1 Btu/h = 1.055056 kJ/h 1 ton de refrigeración = 200 Btu/min
Presión	1 Pa = 1 N/m <sup>2</sup> 1 kPa = 10 <sup>3</sup> Pa = 10 <sup>-3</sup> MPa 1 atm = 101.325 kPa = 1.01325 bars = 760 mm Hg a 0 °C 1 mm Hg = 0.1333 kPa	1 Pa = 1.4504 10 <sup>-4</sup> psia = 0.020886 lbf/ft <sup>2</sup> 1 psi = 144 lbf/ft <sup>2</sup> = 6.894757 kPa 1 atm = 14.696 psia = 29.92 in Hg a 30 °F 1 in Hg = 3.387 kPa

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Calor específico	$1 \text{ kJ/kg}\cdot^{\circ}\text{C} = 1 \text{ kJ/kg}\cdot\text{K} = 1 \text{ J/g}\cdot^{\circ}\text{C}$	$1 \text{ Btu/lbm}\cdot^{\circ}\text{F} = 4.1868 \text{ kJ/kg}\cdot^{\circ}\text{C}$ $1 \text{ Btu/lbmol}\cdot\text{R} = 4.1868 \text{ kJ/kmol}\cdot\text{K}$ $1 \text{ kJ/kg}\cdot^{\circ}\text{C} = 0.23885 \text{ Btu/lbm}\cdot^{\circ}\text{F}$ $= 0.23885 \text{ Btu/lbmol}\cdot\text{R}$
Volumen específico	$1 \text{ m}^3/\text{kg} = 1000 \text{ L/kg} = 1000 \text{ cm}^3/\text{g}$	$1 \text{ m}^3/\text{kg} = 16.02 \text{ ft}^3/\text{lbm}$ $1 \text{ ft}^3/\text{lbm} = 0.062428 \text{ m}^3/\text{kg}$
Volumen	$1 \text{ m}^3 = 1000 \text{ L} = 10^6 \text{ cm}^3 \text{ (cc)}$	$1 \text{ m}^3 = 6.1024 \cdot 10^4 \text{ in}^3 = 35.315 \text{ ft}^3$ $= 264.17 \text{ gal (U.S.)}$
Temperatura	$T(\text{K}) = T(^{\circ}\text{C}) + 273.15$ $\Delta T(\text{K}) = \Delta T(^{\circ}\text{C})$	$T(\text{R}) = T(^{\circ}\text{F}) + 459.67 = 1.8 T(\text{K})$ $T(^{\circ}\text{F}) = 1.8 T(^{\circ}\text{C}) + 32$ $\Delta T(^{\circ}\text{F}) = \Delta T(\text{R}) = 1.8 \Delta T(\text{K})$
Conductividad térmica	$1 \text{ W/m}\cdot^{\circ}\text{C} = 1 \text{ W/m}\cdot\text{K}$	$1 \text{ W/m}\cdot^{\circ}\text{C} = 0.57782 \text{ Btu/h}\cdot\text{ft}\cdot^{\circ}\text{F}$
Velocidad	$1 \text{ m/s} = 3.60 \text{ km/h}$	$1 \text{ m/s} = 3.2808 \text{ ft/s} = 2.237 \text{ mi/h}$ $1 \text{ mi/h} = 1.46667 \text{ ft/s}$ $= 1.6093 \text{ km/h}$
Tasa de flujo volumétrico	$1 \text{ m}^3/\text{s} = 60000 \text{ L/min} = 10^6 \text{ cm}^3/\text{s}$	$1 \text{ m}^3/\text{s} = 35.315 \text{ ft}^3/\text{s}$

**Constante Universal de los gases**

$$\begin{aligned}
 R_u &= 8.31447 \text{ kJ/kmol}\cdot\text{K} \\
 &= 8.31447 \text{ kPa}\cdot\text{m}^3/\text{kmol}\cdot\text{K} \\
 &= 0.0831447 \text{ bar}\cdot\text{m}^3/\text{kmol}\cdot\text{K} \\
 &= 82.05 \text{ L}\cdot\text{atm}/\text{kmol}\cdot\text{K} \\
 &= 1.9858 \text{ Btu/lbmol}\cdot\text{R} \\
 &= 1545.37 \text{ ft}\cdot\text{lbf}/\text{lbmol}\cdot\text{R} \\
 &= 10.73 \text{ psia}\cdot\text{ft}^3/\text{lbmol}\cdot\text{R}
 \end{aligned}$$

**Prefijos estándar en unidades SI**

Múltiplos	Prefijo
$10^{12}$	tera, T
$10^9$	giga, G
$10^6$	mega, M
$10^3$	kilo, k
$10^2$	hecto, h
$10^1$	deca, da
$10^{-1}$	deci, d
$10^{-2}$	centi, c
$10^{-3}$	mili, m
$10^{-6}$	micro, $\mu$
$10^{-9}$	nano, n
$10^{-12}$	pico, p