

# SI Units

## SI Base Units Used in This Book

Symbol	Name	Quantity
A	ampere	current
K	kelvin	absolute temperature
kg	kilogram	mass
m	meter	length
s	second	time

## SI Prefixes

Symbol	Name	Numerical equivalent
a	atto	$10^{-18}$
f	femto	$10^{-15}$
p	pico	$10^{-12}$
n	nano	$10^{-9}$
$\mu$	micro	$10^{-6}$
m	milli	$10^{-3}$
c	centi	$10^{-2}$
d	deci	$10^{-1}$
k	kilo	$10^3$
M	mega	$10^6$
G	giga	$10^9$
T	tera	$10^{12}$
P	peta	$10^{15}$
E	exa	$10^{18}$

## Other Commonly Used Units

Symbol	Name	Quantity	Conversions
atm	standard atmosphere	pressure	$1.013\,250 \times 10^5 \text{ Pa}$
Btu	British thermal unit	energy	$1.055 \times 10^3 \text{ J}$
Cal	food calorie	energy	$= 1 \text{ kcal} = 4.186 \times 10^3 \text{ J}$
cal	calorie	energy	$4.186 \text{ J}$
Ci	curie	decay rate or activity	$3.7 \times 10^{10} \text{ s}^{-1}$
°F	degree Fahrenheit	temperature	$0.5556^\circ\text{C}$
ft	foot	length	$0.3048 \text{ m}$
ft•lb	foot-pound	work and energy	$1.356 \text{ J}$
g	gram	mass	$0.001 \text{ kg}$
gal	gallon	volume	$3.785 \times 10^{-3} \text{ m}^3$
hp	horsepower	power	$746 \text{ W}$
in	inch	length	$2.54 \times 10^{-2} \text{ m}$
kcal	kilocalorie	energy	$4.186 \times 10^3 \text{ J}$
lb	pound	force	$4.45 \text{ N}$
mi	mile	length	$1.609 \times 10^3 \text{ m}$
rev	revolution	angular displacement	$2\pi \text{ rad}$
°	degrees	angular displacement	$= \left(\frac{2\pi}{360}\right) \text{ rad} = 1.745 \times 10^{-2} \text{ rad}$