

## 66.8: SI Units

Table 66.8.1: SI base units.

Name	Symbol	Quantity
meter	m	length
kilogram	kg	mass
second	s	time
ampere	A	electric current
kelvin	K	temperature
mole	mol	amount of substance
candela	cd	luminous intensity

Table 66.8.2: Derived SI units

Name	Symbol	Definition	Base Units	Quantity
radian	rad	m/m	-	plane angle
steradian	sr	m <sup>2</sup> /m <sup>2</sup>	-	solid angle
newton	N	kgms <sup>-2</sup>	$\text{kg m s}^{-2}$	force
joule	J	Nm	kgm <sup>2</sup> s <sup>-2</sup>	energy
watt	W	J/s	kgm <sup>2</sup> s <sup>-3</sup>	power
pascal	Pa	N/m <sup>2</sup>	kg m <sup>-1</sup> s <sup>-2</sup>	pressure
hertz	Hz	s <sup>-1</sup>	s <sup>-1</sup>	frequency
coulomb	C	As	As <sup>2</sup>	electric charge
volt	V	J/C	kgm <sup>-1</sup> A <sup>-3</sup>	electric potential
ohm	Ω	V/A	kgm <sup>2</sup> A <sup>-2</sup> s <sup>-3</sup>	electrical resistance
siemens	S	A/V	kg <sup>-1</sup> m <sup>-2</sup> A <sup>2</sup> s <sup>3</sup>	electrical conductance
farad	F	C/V	kg <sup>-1</sup> m <sup>-2</sup> A <sup>2</sup> s <sup>4</sup>	capacitance
weber	Wb	Vs	kgm <sup>2</sup> A <sup>-1</sup> s <sup>-2</sup>	magnetic flux
tesla	T	Wb/m <sup>2</sup>	kg A <sup>-1</sup> s <sup>-2</sup>	magnetic induction
henry	H	Wb/A	kgm <sup>2</sup> A <sup>-2</sup> s <sup>-2</sup>	induction
lumen	lm	cdsr	cdsr <sup>-2</sup>	luminous flux
lux	lx	lm/m <sup>2</sup>	cdsr <sup>m-2</sup>	illuminance
becquerel	Bq	ss <sup>-1</sup>	s <sup>-1</sup>	radioactivity
gray	Gy	J/kg	m <sup>2</sup> s <sup>-2</sup>	absorbed dose
sievert	Sv	J/kg	m <sup>2</sup> s <sup>-2</sup>	dose equivalent
katal	kat	mol/s	mols <sup>-1</sup>	catalytic activity

Table 1: SI units prefixes.

Prefix	Symbol	Definition	English
yotta-	Y	$10^{24}$	septillion
zetta-	Z	$10^{21}$	sextillion
exa-	E	$10^{18}$	quintillion
peta-	P	$10^{15}$	quadrillion
tera-	T	$10^{12}$	trillion
giga-	G	$10^9$	billion
mega-	M	$10^6$	million
kilo-	k	$10^3$	thousand
hecto-	h	$10^2$	hundred
deka-	da	$10^1$	ten
deci-	d	$10^{-1}$	tenth
centi-	c	$10^{-2}$	hundredth
milli-	m	$10^{-3}$	thousandth
micro-	$\mu$	$10^{-6}$	millionth
nano-	n	$10^{-9}$	billionth
pico-	p	$10^{-12}$	trillionth
femto-	f	$10^{-15}$	quadrillionth
atto-	a	$10^{-18}$	quintillionth
zepto-	z	$10^{-21}$	sextillionth
yocto-	y	$10^{-24}$	septillionth

Table 2: Prefixes for computer use only

Prefix	Symbol	Definition	
yobi-	Yi	$2^{80}$	=1,208,925,819,614,629,174,706,176
zebi-	Zi	$2^{70}$	=1,180,591,620,717,411,303,424
exbi-	Ei	$2^{60}$	=1,152,921,504,606,846,976
pebi-	Pi	$2^{50}$	=1,125,899,906,842,624
tebi-	Ti	$2^{40}$	=1,099,511,627,776
gibi-	Gi	$2^{30}$	=1,073,741,824
mebi-	Mi	$2^{20}$	=1,048,576
kibi-	Ki	$2^{10}$	=1,024

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