

# International System of Units (System International, SI)

Quantity <sup>1</sup>	Name	Symbol	Formula
<b>Kinematic Domain:</b>			
<b>length</b> ( $l, r, s$ )	<b>metre</b>	<b>m</b>	
area ( $A$ )	square metre hectare		$m^2$ $ha$
volume ( $V$ )	cubic metre litre		$m^3$ $L$
linear velocity, speed ( $v$ )	metre per second		$m/s$
linear acceleration ( $a$ )	metre per second squared		$m/s^2$
linear jerk ( $j$ )	metre per second cubed		$m/s^3$
plane angle ( $\alpha, \beta, \gamma, \theta, \phi$ )	radian	rad	$m/m=1$
	degree	deg, <sup>o</sup>	$\pi/180$ rad
	minute	'	$1/60$ deg
	second	"	$1/360$ deg
	revolution	r	$2\pi$ rad, 360 deg
angular velocity ( $\omega$ )	radian per second		rad/s
angular acceleration ( $\alpha$ )	radian per second squared		rad/s <sup>2</sup>
solid angle ( $\Omega$ )	steradian	sr	
<b>Inertial Property Domain:</b>			
<b>mass</b> ( $m$ )	<b>kilogram</b>	<b>kg</b>	
	metric ton or tonne	t	$1\text{ Mg} = 1000\text{ kg}$
moment of inertia ( $I, J$ )	kilogram metre squared		$kg.m^2$
density ( $\rho$ )	kilogram per cubic metre		$kg/m^3$
viscosity ( $\eta$ )	pascal second		Pa.s
<b>Time (Temporal) Domain:</b>			
<b>time</b> ( $t$ )	<b>second</b>	<b>s</b>	
	minute	min	60 s
	hour	h	3600 s
	day	d	86 400 s
	year	a	31.536 Ms
frequency ( $f$ )	hertz	Hz	$1/s$
<b>Kinetic Domain:</b>			
force ( $F$ )	newton	N	$kg.m/s^2$
moment of force ( $M$ ), torque ( $\tau$ )	newton metre		N.m
pressure ( $p$ )	pascal	Pa	$N/m^2$
	millibar	mbar	$1\text{ mbar} = 100\text{ Pa}$
stress ( $\sigma$ or $\tau$ )	pascal	Pa	$N/m^2$
energy, work ( $E, W$ )	joule	J	$kg.m^2/s^2$
power ( $P$ )	watt	W	J/s
linear impulse	newton second		N.s or kg.m/s
linear momentum ( $p$ )	kilogram metre per second		kg.m/s or N.s
angular impulse	newton metre second		N.m.s or $kg.m^2/s$
angular momentum ( $L$ )	kilogram metre squared per second		$kg.m^2/s$ or N.m.s

**Electrical Domain:**

<b>current (<math>I</math>)</b>	<b>ampere</b>	<b>A</b>	
voltage ( $V$ )	volt	V	W/A
charge ( $Q$ )	coulomb	C	s.A
power ( $P$ )	watt	W	J/s
resistance ( $R$ ), impedance ( $Z$ )	ohm	$\Omega$	V/A
capacitance ( $C$ )	farad	F	V/A
magnetic flux ( $\Phi$ )	weber	Wb	C/V
magnetic flux density ( $B$ )	tesla	T	V.s
inductance ( $L$ )	henry	H	Wb/m <sup>2</sup>
conductance ( $G$ )	siemens	S	Wb/A
electric energy ( $E$ )	joule	J	A/V
			W.s

**Temperature Domain:**

<b>temperature (<math>T</math>)</b>	<b>kelvin</b>	<b>K</b>	
	degree Celsius	$^{\circ}\text{C}$	

**Chemical Domain:**

<b>amount of substance (<math>n</math>)</b>	<b>mole</b>	<b>mol</b>	
concentration ( $c$ )	mole per cubic metre		mol/m <sup>3</sup>

**Light Domain:**

<b>luminous intensity (<math>I</math>)</b>	<b>candela</b>	<b>cd</b>	
luminous flux ( $\Phi$ )	lumen	lm	cd.sr
illuminance ( $E$ )	lux	lx	lm/m <sup>2</sup>
radiant intensity ( $I$ )	watt per steradian		W/sr
radiance ( $L$ )	watt per square metre per steradian		W.m <sup>2</sup> /sr

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<sup>1</sup> Base units are in **boldface**.