1.4.4 SI derived units for other quantities

This table gives examples of other SI derived units; the list is merely illustrative.

Physical quantity	*Expression in terms of SI base units*	
area	m^2	
volume	m^3	
speed, velocity	$m\ s^{-1}$	
angular velocity	s^{-1}, $rad\ s^{-1}$	
acceleration	$m\ s^{-2}$	
moment of force	$N\ m$	$= m^2\ kg\ s^{-2}$
wavenumber	m^{-1}	
density, mass density	$kg\ m^{-3}$	
specific volume	$m^3\ kg^{-1}$	
amount concentration[1]	$mol\ m^{-3}$	
molar volume	$m^3\ mol^{-1}$	
heat capacity, entropy	$J\ K^{-1}$	$= m^2\ kg\ s^{-2}\ K^{-1}$
molar heat capacity, molar entropy	$J\ K^{-1}\ mol^{-1}$	$= m^2\ kg\ s^{-2}\ K^{-1}\ mol^{-1}$
specific heat capacity, specific entropy	$J\ K^{-1}\ kg^{-1}$	$= m^2\ s^{-2}\ K^{-1}$
molar energy	$J\ mol^{-1}$	$= m^2\ kg\ s^{-2}\ mol^{-1}$
specific energy	$J\ kg^{-1}$	$= m^2\ s^{-2}$
energy density	$J\ m^{-3}$	$= m^{-1}\ kg\ s^{-2}$
surface tension	$N\ m^{-1} = J\ m^{-2}$	$= kg\ s^{-2}$
heat flux density, irradiance	$W\ m^{-2}$	$= kg\ s^{-3}$
thermal conductivity	$W\ m^{-1}\ K^{-1}$	$= m\ kg\ s^{-3}\ K^{-1}$

(1) The words 'amount concentration' are an abbreviation for 'amount-of-substance concentration'. When there is not likely to be any ambiguity this quantity may be called simply 'concentration'.

Physical quantity	*Expression in terms of SI base units*	
kinematic viscosity, diffusion coefficient	$m^2\ s^{-1}$	
dynamic viscosity	$N\ s\ m^{-2} = Pa\ s$	$= m^{-1}\ kg\ s^{-1}$
electric charge density	$C\ m^{-3}$	$= m^{-3}\ s\ A$
electric current density	$A\ m^{-2}$	
conductivity	$S\ m^{-1}$	$= m^{-3}\ kg^{-1}\ s^3\ A^2$
molar conductivity	$S\ m^2\ mol^{-1}$	$= kg^{-1}\ mol^{-1}\ s^3\ A^2$
permittivity	$F\ m^{-1}$	$= m^{-3}\ kg^{-1}\ s^4\ A^2$
permeability	$H\ m^{-1}$	$= m\ kg\ s^{-2}\ A^{-2}$
electric field strength	$V\ m^{-1}$	$= m\ kg\ s^{-3}\ A^{-1}$
magnetic field strength	$A\ m^{-1}$	
luminance	$cd\ m^{-2}$	
exposure (X and γ rays)	$C\ kg^{-1}$	$= kg^{-1}\ s\ A$
absorbed dose rate	$Gy\ s^{-1}$	$= m^2\ s^{-3}$