Table A1.2 A selection of derived units

Physical quantity	Derived unit*	Name of derived unt
Force	1 kg m s^{-2}	newton, N
Pressure	1 kg m^{-1} s^{-2}	pascal, Pa
	1 N m^{-2}	
Energy	1 kg m^2 s^{-2}	joule, J
	1 N m	
	1 Pa m^3	
Power	kg m^2 s^{-3}	watt, W
	1 J s^{-1}	

* Equivalent definitions in terms of derived units are given following the definition in terms of base units.

Table A1.3 Common SI prefixes

Prefix	z	a	f	p	n	_	m	c	d
Name	zepto	atto	femto	pico	nano	micro	milli	centi	deci
Factor	10^{-21}	10^{-18}	10^{-15}	10^{-12}	10^{-9}	10^{-6}	10^{-3}	10^{-2}	10^{-1}
Prefix	k	M	G	T					
Name	kilo	mega	giga	tera					
Factor	10^3	10^6	10^9	10^{12}					

The kilogram (kg) is anomalous: although it is a base unit, it is interpreted as 10^3 g, and prefixes are attached to the gram (as in 1 mg = 10^{-3} g). Powers of units apply to the prefix as well as the unit they modify:

$$1\ \text{cm}^3 = 1\ (\text{cm})^3 = 1\ (10^{-2}\ \text{m})^3 = 10^{-6}\ \text{m}^3$$

Note that 1 cm^3 does not mean 1 $c(m^3)$. When carrying out numerical calculations, it is usually safest to write out the numerical value of an observable as powers of 10.

There are a number of units that are in wide use but are not a part of the International System. Some are exactly equal to multiples of SI units. These include the *litre* (L), which is exactly 10^3 cm^3 (or 1 dm^3) and the *atmosphere* (atm), which is exactly 101.325 kPa. Others rely on the values of fundamental constants, and hence are liable to change when the values of the fundamental constants are modified by more accurate or more precise measurements. Thus, the size of the energy unit *electronvolt* (eV), the energy acquired by an electron that is accelerated through a potential difference of exactly 1 V, depends on the value of the charge of the electron, and the present (2005) conversion factor is 1 eV = 1.602 177 33 × 10^{-19} J. Table A1.4 gives the conversion factors for a number of these convenient units.

Notational conventions

We use SI units and IUPAC conventions throughout (see *Further reading*), except in a small number of cases. The default numbering of equations is (*C.n*), where *C* is the chapter; however, [*C.n*] is used to denote a definition and {*C.n*} is used to indicate that a variable *x* should be interpreted as $x/x^{\ominus}$, where $x^{\ominus}$ is a standard value. A subscript r