TECHNICAL REPORT WRITING FOR ENGINEERS

UNITS AND PREFIXES

Whenever you report a value, you should include its units. There are two ways of writing units: using an exponent and using a slash sign. Both are acceptable, but you must be consistent throughout your report. This is particularly important if you are collaborating with others on a report.

Here are some examples of SI Units:

Unit	In words	Using an exponent	Using a slash (division sign)
Specific entropy	Joules per kilogramme per Kelvin	$Jkg^{-1}K^{-1}$	J/kg/K
Acceleration	Metres per second squared	ms^{-2}	m/s^2
Viscosity	Pascal seconds or Newton meters per second	Pa.s or Nms^{-1}	Pa.s or Nm/s

Note that unit symbols remain unaltered in the plural, so there should be no confusion between pascal seconds, written as Pas, and the plural of pascals which is just Pa. However, it is a good idea to put a dot or space between the "Pa" and the "s" (Pa.s, or Pa s) to be clear.

Units can be modified by prefixing a letter which indicates that it is multiplied by a power of 10. For example, the amount of power produced from a large power station is 2 trillion (10^9) Joules per second, but we usually report this as 2GW.

The most common prefixes are shown below:

Prefix name	pico	nano	micro	milli	-	kilo	mega	giga	tera
Symbol	p	n	μ	m	-	k	M	G	T
Factor	10^{-12}	10^{-9}	10^{-6}	10^{-3}	0	10^3	10^6	10^9	10^{12}

Note that the prefix indicating multiply by 1000 is a lowercase k. The uppercase K is the unit symbol for the kelvin, so 1 Kg denotes one kelvin gram, which is different to 1 kg, a kilogram.

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