

1. Standard Units and Prefixes:

In 1960, the 11th CGPM adopted a first series of prefixes and symbols of prefixes to form the names and symbols of decimal multiples and submultiples of SI units. Over the years, the list has been extended as summarized in the following table.

factor	prefix	symbol	factor	prefix	symbol
10 ²⁴	yotta-	Y	10 ⁻¹	deci-	d
10 ²¹	zetta-	Z	10 ⁻²	centi-	c
10 ¹⁸	exa-	E	10 ⁻³	milli-	m
10 ¹⁵	peta-	P	10 ⁻⁶	micro-	μ
10 ¹²	tera-	T	10 ⁻⁹	nano-	n
10 ⁹	giga-	G	10 ⁻¹²	pico-	p
10 ⁶	mega-	M	10 ⁻¹⁵	femto-	f
10 ³	kilo-	k	10 ⁻¹⁸	atto-	a
10 ²	hecto-	h	10 ⁻²¹	zepto-	z
10 ¹	deca-	da	10 ⁻²⁴	yocto-	y

2. Volumes, concentrations etc:

The [mole](#) is the [SI](#) unit for the amount of a substance and one of the seven fundamental SI units. It is defined as the amount of substance of a system that contains as many elementary entities as there are atoms in 0.012 kilograms of carbon-12 (BIPM 1998, p. 97). It is abbreviated "mol," and the number of entities in a [mole](#) of substance is given by [Avogadro's number](#) (6.023×10^{23}).

Thus, mmol = 10⁻³ moles, μmol = 10⁻⁶ moles, etc

Note that some authors use upper case 'm', thus, pMol = 10⁻¹² moles. This may lead to confusion as it is conventional to use uppercase 'M' for molarity (i.e. concentration in moles per litre). Thus, 0.1 M = 0.1 moles per litre = 0.1 mol/l = 100 mM = 100 mmol/l etc.

Volume units are fractions of a litre. The more correct symbol for litre is a capital 'L', but lower case 'l' is more common. Thus ml = mL = milliliter = 10⁻³ litre

Note that a space should be introduced between the number and the symbol for units. It is not necessary to place a stop after the symbol and it is not necessary to pluralise. Thus, 10ml, 10 ml. and 10 mls are incorrect; 10 ml and 10 mL are correct.

3. Properties of oligonucleotides:

You may need to calculate the molecular weight, melting temperature or some other property of an oligonucleotide which depends on its base sequence. Programs are available to help you do this. For example:

<http://www.basic.northwestern.edu/biotools/oligocalc.html>