The Metric System

Chem1A, General Chemistry I

Prefix multipliers change by magnitudes of (times multiplied by) ten.

- To write the desired unit:

  (prefix) + base unit

  (milli) + meter = millimeter

  (kilo) + gram = kilogram

  (micro) + second = microsecond

  (Mega) + liter = Megaliter

  (prefix symbol) + base unit symbol

  (m) + m = mm

  (k) + g = kg

  (μ) + s = μs

  (M) + L = ML

Prefix	Scientific Notation	1 (prefix)unit = __ units	Symbol
Giga -	10^{9}	1×10^{9}	G
Mega -	10^{6}	1×10^{6}	M
kilo -	10^{3}	1×10^{3}	k
BASE UNIT	1	1	(g, m, s, K, mol, A, cd)
deci -	10^{-1}	1×10^{-1}	d
centi -	10^{-2}	1×10^{-2}	c
milli -	10^{-3}	1×10^{-3}	m
micro -	10^{-6}	1×10^{-6}	μ
nano -	10^{-9}	1×10^{-9}	n
pico -	10^{-12}	1×10^{-12}	p
femto -	10^{-15}	1×10^{-15}	f

- To convert, replace the prefix with its worth in scientific notation.

  1 (prefix)unit = 1 × (scientific notation) unit

  1 Gigameter = 1×10^{9} meters

  1 picogram = 1×10^{-12} grams

  1 unit = 1 × -(scientific notation) (prefix) unit

  1 second = 1×10^{-3} kiloseconds

  1 Kelvin = 1×10^{6} microKelvins