

# Physical Science Reference Tables

## MOTION AND ENERGY

$$\bar{v} = \frac{\Delta d}{\Delta t}$$

$$a = \frac{v_f - v_i}{\Delta t}$$

$$F = ma$$

$$F_g = mg$$

$$p = mv$$

$$W = F\Delta d$$

$$P = \frac{W}{\Delta t}$$

$$PE_g = mgh = F_g h$$

$$KE = \frac{1}{2}mv^2$$

$$IMA = \frac{d_E}{d_R}$$

$$AMA = \frac{F_R}{F_E}$$

$$\text{Efficiency} = \frac{W_{out}}{W_{in}} \times 100$$

$$v_w = f\lambda$$

$v$  = velocity

$d$  = position

$t$  = time

$a$  = uniform acceleration

$F$  = force

$m$  = mass

$F_g$  = weight

$g$  = acceleration due to gravity on Earth  
= 9.8 m/s/s

$p$  = momentum

$W$  = work

$P$  = power

$PE_g$  = gravitational potential energy

$h$  = height

$KE$  = kinetic energy

IMA = ideal mechanical advantage

AMA = actual mechanical advantage

$R$  = resistance

$E$  = effort

$v_w$  = wave velocity

$f$  = frequency

$\lambda$  = wavelength

**ELECTRICITY**

$$V = IR$$

$$P = VI$$

$V$  = electrical potential difference

$I$  = current

$R$  = resistance

$P$  = power

**DENSITY**

$$D = \frac{m}{V}$$

$D$  = density

$m$  = mass

$V$  = volume

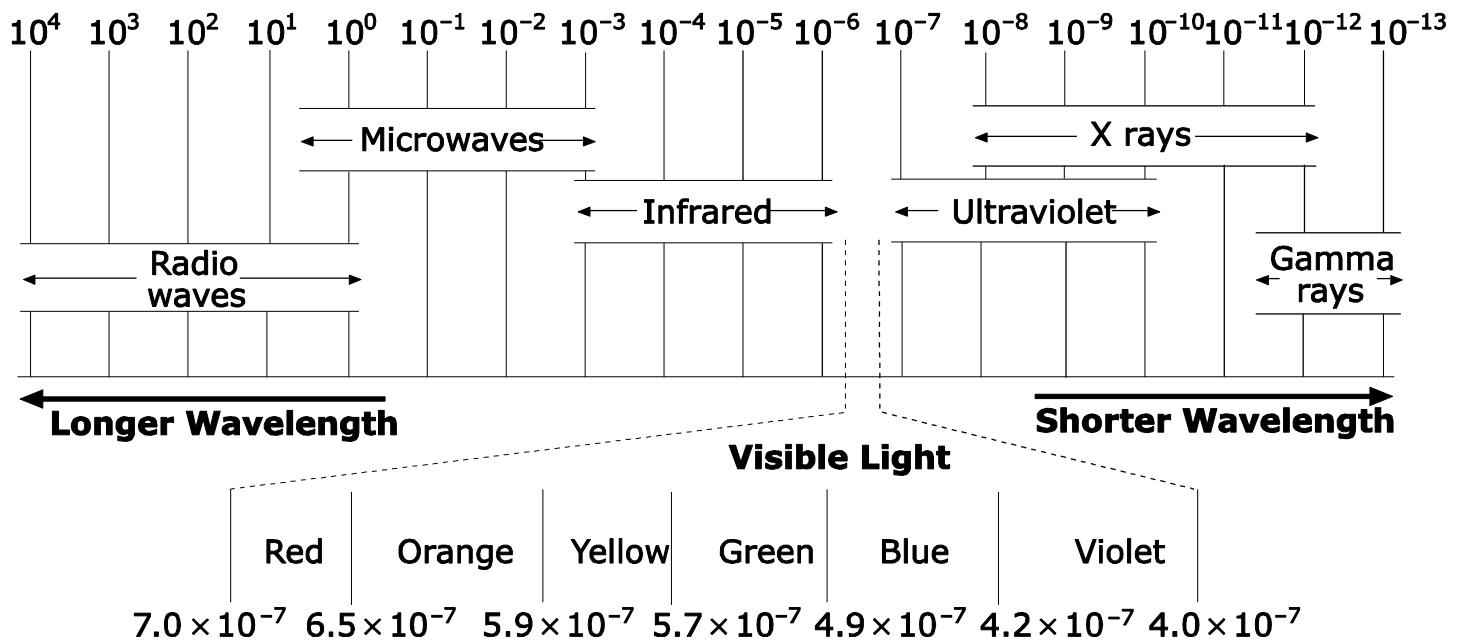
# PERIODIC TABLE

1 <b>IA</b>								
1 <b>H</b> Hydrogen 1.008	2 <b>IIA</b>							
3 <b>Li</b> Lithium 6.941	4 <b>Be</b> Beryllium 9.012							
11 <b>Na</b> Sodium 22.99	12 <b>Mg</b> Magnesium 24.31	3 <b>IIIB</b>	4 <b>IVB</b>	5 <b>VB</b>	6 <b>VIB</b>	7 <b>VIIB</b>	8 <b>VIIIB</b>	9 <b>VIIIB</b>
19 <b>K</b> Potassium 39.10	20 <b>Ca</b> Calcium 40.08	21 <b>Sc</b> Scandium 44.96	22 <b>Ti</b> Titanium 47.88	23 <b>V</b> Vanadium 50.94	24 <b>Cr</b> Chromium 51.99	25 <b>Mn</b> Manganese 54.94	26 <b>Fe</b> Iron 55.85	27 <b>Co</b> Cobalt 58.93
37 <b>Rb</b> Rubidium 85.47	38 <b>Sr</b> Strontium 87.62	39 <b>Y</b> Yttrium 88.91	40 <b>Zr</b> Zirconium 91.22	41 <b>Nb</b> Niobium 92.91	42 <b>Mo</b> Molybdenum 95.94	43 <b>Tc</b> Technetium (98)	44 <b>Ru</b> Ruthenium 101.07	45 <b>Rh</b> Rhodium 102.91
55 <b>Cs</b> Cesium 132.91	56 <b>Ba</b> Barium 137.38	57 <b>La</b> Lanthanum 138.91	72 <b>Hf</b> Hafnium 178.49	73 <b>Ta</b> Tantalum 180.95	74 <b>W</b> Tungsten 183.84	75 <b>Re</b> Rhenium 186.21	76 <b>Os</b> Osmium 190.23	77 <b>Ir</b> Iridium 192.22
87 <b>Fr</b> Francium (223)	88 <b>Ra</b> Radium (226)	89 <b>Ac</b> Actinium (227)	104 <b>Rf</b> Rutherfordium (261)	105 <b>Db</b> Dubnium (262)	106 <b>Sg</b> Seaborgium (263)	107 <b>Bh</b> Bohrium (264)	108 <b>Hs</b> Hassium (269)	109 <b>Mt</b> Meitnerium (268)

58 <b>Ce</b> Cerium 140.12	59 <b>Pr</b> Praseodymium 140.91	60 <b>Nd</b> Neodymium 144.24	61 <b>Pm</b> Promethium (145)	62 <b>Sm</b> Samarium 150.36	63 <b>Eu</b> Europium 151.96	64 <b>Gd</b> Gadolinium 157.25
90 <b>Th</b> Thorium 232.04	91 <b>Pa</b> Protactinium 231.04	92 <b>U</b> Uranium 238.04	93 <b>Np</b> Neptunium (237)	94 <b>Pu</b> Plutonium (244)	95 <b>Am</b> Americium (243)	96 <b>Cm</b> Curium (247)



**Electromagnetic Spectrum**  
(measurement in meters)



<b>Polyatomic Ions</b>	
$\text{NH}_4^+$	Ammonium
$\text{C}_2\text{H}_3\text{O}_2^-$	Acetate
$\text{ClO}_3^-$	Chlorate
$\text{NO}_3^-$	Nitrate
$\text{OH}^-$	Hydroxide
$\text{CO}_3^{2-}$	Carbonate
$\text{SO}_4^{2-}$	Sulfate
$\text{PO}_4^{3-}$	Phosphate