### FUNDAMENTAL CONSTANTS

#### Constants in mks units:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>c</td>
<td>speed of light in vacuuo</td>
<td>$2.99792458 \times 10^8$ m / sec</td>
</tr>
<tr>
<td>k</td>
<td>Boltzmann's constant</td>
<td>$1.38066 \times 10^{-23}$ J / ° K</td>
</tr>
<tr>
<td>e</td>
<td>proton charge</td>
<td>$1.6021773 \times 10^{-19}$ coulomb</td>
</tr>
<tr>
<td>h</td>
<td>Planck's constant</td>
<td>$6.626076 \times 10^{-34}$ J ⋅ sec</td>
</tr>
<tr>
<td>m_e</td>
<td>electron mass</td>
<td>$9.1093897 \times 10^{-31}$ kg</td>
</tr>
<tr>
<td>m_p</td>
<td>proton mass</td>
<td>$1.6726231 \times 10^{-27}$ kg</td>
</tr>
<tr>
<td>m_n</td>
<td>neutron mass</td>
<td>$1.6749286 \times 10^{-27}$ kg</td>
</tr>
</tbody>
</table>

#### Conversion Factors:

- 1 coulomb = $2.99792458 \times 10^9$ esu
- 1 joule = $10^7$ erg
- 1 tesla = $10^4$ gauss

#### Constants in cgs units:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>c</td>
<td>speed of light in vacuuo</td>
<td>$2.99792458 \times 10^{10}$ cm / s</td>
</tr>
<tr>
<td>k</td>
<td>Boltzmann's constant</td>
<td>$1.38066 \times 10^{-16}$ erg / ° K</td>
</tr>
<tr>
<td>e</td>
<td>proton charge</td>
<td>$4.8032066 \times 10^{-10}$ esu</td>
</tr>
<tr>
<td>h</td>
<td>Planck's constant</td>
<td>$6.626076 \times 10^{-27}$ erg ⋅ sec</td>
</tr>
<tr>
<td>m_e</td>
<td>electron mass</td>
<td>$9.1093897 \times 10^{-27}$ gm</td>
</tr>
<tr>
<td>m_p</td>
<td>proton mass</td>
<td>$1.6726231 \times 10^{-24}$ gm</td>
</tr>
<tr>
<td>m_n</td>
<td>neutron mass</td>
<td>$1.6749286 \times 10^{-24}$ gm</td>
</tr>
<tr>
<td>μ_e</td>
<td>Bohr magneton</td>
<td>$9.274016 \times 10^{-21}$ erg / gauss</td>
</tr>
<tr>
<td>μ_N</td>
<td>Nuclear magneton</td>
<td>$5.050787 \times 10^{-24}$ erg / gauss</td>
</tr>
</tbody>
</table>

#### Unit equivalents in cgs units:

- 1 gauss = 1 erg$^2$⋅cm$^2$
- 1 esu = 1 erg$^3$⋅cm$^3$