

PROTON – UNIVERSAL ATPase FUEL

UNIVERSAL NANOMOTOR USER GUIDE

Periodic Table of the Elements

1 IA 11A 1 H Hydrogen 1.008	2 IIA 2A																	18 VIIIA 8A 2 He Helium 4.003
3 Li Lithium 6.941	4 Be Beryllium 9.012											5 B Boron 10.811	6 C Carbon 12.011	7 N Nitrogen 14.007	8 O Oxygen 15.999	9 F Fluorine 18.998	10 Ne Neon 20.180	
11 Na Sodium 22.990	12 Mg Magnesium 24.305											13 Al Aluminum 26.982	14 Si Silicon 28.086	15 P Phosphorus 30.974	16 S Sulfur 32.066	17 Cl Chlorine 35.453	18 Ar Argon 39.948	
19 K Potassium 39.098	20 Ca Calcium 40.078	21 Sc Scandium 44.956	22 Ti Titanium 47.88	23 V Vanadium 50.942	24 Cr Chromium 51.996	25 Mn Manganese 54.938	26 Fe Iron 55.833	27 Co Cobalt 58.933	28 Ni Nickel 58.693	29 Cu Copper 63.546	30 Zn Zinc 65.39	31 Ga Gallium 69.723	32 Ge Germanium 72.61	33 As Arsenic 74.922	34 Se Selenium 78.09	35 Br Bromine 79.904	36 Kr Krypton 84.80	

<https://www.thoughtco.com/printable-periodic-tables-4064198> (share and cite)

PROTON – UNIVERSAL ATPase FUEL

UNIVERSAL NANOMOTOR USER GUIDE

- proton (${}^1\text{H}^+$) is the smallest stable subatomic particle with +1 positive electric charge (elementary charge)
- proton mass (m_p) is one of the fundamental and universal constants in physics
- $m_p = 1.67 \times 10^{-27}$ kg; 1 Dalton; <https://en.wikipedia.org/wiki/Proton>

PROTON – UNIVERSAL ATPase FUEL

UNIVERSAL NANOMOTOR USER GUIDE

- m_p is independent of the system in which it is measured
- it obeys all relationships with other physical constants (Planck-, gravitational-, speed of light, electron/neutron mass, etc...)
- protons make up $\sim 2/3^{\text{rd}}$ of all atoms in our body and the Universe^{1,2}