



**Periodic table of the elements  
Thermal Neutron Cross Sections**

1 Hydrogen 20.49 0.333 -																2 Helium 0.76 0.007 -	
3 Lithium 0.95 70.5 3.31	4 Beryllium 6.15 0.0076 0.76											5 Boron 4.27 767 101.79	6 Carbon 4.74 0.0035 0.55	7 Nitrogen 10.03 1.9 -	8 Oxygen 3.76 0.0019 -	9 Flourine 3.64 0.0096 -	10 Neon 2.415 0.039 -
11 Sodium 3.025 0.53 0.09	12 Magnesium 3.414 0.063 0.15											13 Aluminin. 1.413 0.231 0.1	14 Silicon 2.0437 0.171 0.11	15 Phosphor. 3.134 0.172 0.12	16 Sulphur 0.9787 0.53 0.06	17 Chlorine 15.8 33.5 -	18 Argon 0.647 0.675 -
19 Potassium 2.04 2.1 0.05	20 Calcium 2.93 0.43 0.08	21 Scandium 22.4 27.2 1.99	22 Titanium 4.09 6.09 0.58	23 Vanadium 4.8 5.08 0.71	24 Chromium 3.38 3.07 0.54	25 Mangan. 2.2 13.3 1.24	26 Iron 11.35 2.56 1.16	27 Cobalt 6 37.18 3.93	28 Nickel 17.8 4.49 2.04	29 Copper 7.78 3.78 0.98	30 Zinc 4.08 1.11 0.34	31 Gallium 6.5 2.9 0.48	32 Germanium 8.37 2.3 0.47	33 Arsenic 5.43 4.5 0.46	34 Selenium 8.56 11.7 0.74	35 Bromine 6.1 6.9 0.31	36 Krypton 7.5 25 -
37 Rubidium 6.4 0.38 0.07	38 Strontium 10 1.28 0.2	39 Yttrium 7.67 1.28 0.27	40 Zirconium 6.4 0.185 0.28	41 Niobium 6.37 1.15 0.42	42 Molybden. 5.59 2.55 0.53	43 Technet. - 200 1.43	44 Ruthenium 6.5 2.56 0.67	45 Rhodium 5 145 10.89	46 Palladium 4.2 6.9 0.75	47 Silver 5.08 63.3 4.01	48 Cadmium 5.6 2520 117	49 Indium 2.45 193.8 7.52	50 Tin 4.909 0.626 0.16	51 Antimony 4.2 5.1 0.31	52 Tellurium 3.74 4.7 0.25	53 Iodine 3.54 6.2 0.23	54 Xenon 4.3 23.9 -
55 Cesium 20 29.15 0.42	56 Barium 3.42 1.2 0.07	57 Lanthanum 10.13 8.97 0.51	72 Hafnium 10.3 104.1 5.14	73 Tantalum 6.12 20.5 1.47	74 Tungsten 4.77 18.4 1.46	75 Rhenium 11.3 89.7 6.86	76 Osmium 15 16 2.21	77 Iridium 14.2 425.3 30.86	78 Platinum 12.4 10.3 1.5	79 Gold 7.84 98.65 6.14	80 Mercury 26.5 372.3 16.21	81 Thallium 10.01 3.43 0.47	82 Lead 11.25 0.171 0.38	83 Bismuth 9.3 0.0338 0.26	84 Polonium - - -	85 Astatine - - -	86 Radon - - -
87 Francium - - -	88 Radium - 12.8 0.17	89 Actinium - 890 23.77															

1 Hydrogen  
20.49  
0.333  
-  
**Atomic Number and Element Name**  
**Macroscopic Scattering Cross-Section**  
**Macroscopic Absorption Cross-Section**  
**Linear Attenuation Co-efficient**

58 Cerium 9 0.63 0.28	59 Praseody. 2.54 11.5 0.41	60 Neodym. 16 50.5 1.89	61 Prometh. - 8400 251.79	62 Samarium 38 5670 171.86	63 Europium - 4565 94.82	64 Gadolinium 172 48890 1483.88	65 Terbium 6.92 23.4 0.95	66 Dyspros. 105.9 940 33.13	67 Homium 8.65 64.7 2.35	68 Erbium 9 159.2 5.49	69 Thulium 6.3 105 3.7	70 Ytterbium 23.4 35.5 1.43	71 Lutetium 6.8 76.4 2.82
90 Thorium 12.97 7.37 0.62	91 Protactin. - 210 8.41	92 Uranium* 14.3/9.38 680.9/2.68 33.75/0.56	93 Neptunium - - -	94 Plutonium - 1756 85.96	95 Americium - - -	96 Curium - - -	97 Berkelium - - -	98 Californ. - - -	99 Einstein. - - -	100 Fermium - - -	101 Mendel. - - -	102 Nobelium - - -	103 Lawrenc. - - -