

Relevance (?) of the de Broglie Wavelength

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Table 7.1 The de Broglie Wavelengths of Several Objects

Substance	Mass (g)	Speed (m/s)	λ (m)
Slow electron	9×10^{-28}	1.0	7×10^{-4}
Fast electron	9×10^{-28}	5.9×10^6	1×10^{-10}
Alpha particle	6.6×10^{-24}	1.5×10^7	7×10^{-15}
One-gram mass	1.0	0.01	7×10^{-29}
Baseball	142	25.0	2×10^{-34}
Earth	6.0×10^{27}	3.0×10^4	4×10^{-63}

(compare diameter
of atomic nucleus:
 10^{-14} to 10^{-15} m)

Taken from Martin S. Silberberg, *Chemistry*, 3rd Edition, Boston: McGraw Hill, 2003.