

$$\begin{aligned}
&> \text{restart; \#GyroMag} \\
&> mp := 1.672621923 \cdot 10^{-27}; \hbar := \frac{6.62607015}{2 \cdot \text{Pi}} \cdot 10^{-34}; B2 := 4.2 \cdot 10^{14}; ec := 1.602176 \cdot 10^{-19}; \frac{1}{ec}; \\
&\quad mp := 1.672621923 \times 10^{-27} \\
&\quad \hbar := 1.054571818 \times 10^{-34} \\
&\quad B2 := 4.200000000 \times 10^{14} \\
&\quad ec := 1.602176000 \times 10^{-19} \\
&\quad 6.241511544 \times 10^{18} \tag{1}
\end{aligned}$$

$$\begin{aligned}
&> \gamma_0 := 9.57865 \cdot 10^7; I_0 := \frac{1}{2}; \gamma_0 := 10.01926 \cdot 10^7; I_0 := \frac{1}{2}; \gamma_0 := 4.81519 \cdot 10^7; I_0 := \frac{1}{2}; \gamma_0 := -1.77748 \\
&\quad \cdot 10^7; I_0 := \frac{3}{2}; \# \gamma_0 := 5.64661 \cdot 10^7; I_0 := \frac{1}{2}; \\
&\quad \gamma_0 := 9.578650000 \times 10^7 \\
&\quad I_0 := \frac{1}{2} \\
&\quad \gamma_0 := 1.001926000 \times 10^8 \\
&\quad I_0 := \frac{1}{2} \\
&\quad \gamma_0 := 4.815190000 \times 10^7 \\
&\quad I_0 := \frac{1}{2} \\
&\quad \gamma_0 := -1.777480000 \times 10^7 \\
&\quad I_0 := \frac{3}{2} \tag{2}
\end{aligned}$$

$$\begin{aligned}
&> EeV := \frac{\hbar \cdot \gamma_0 \cdot I_0 \cdot (1 - I_0) \cdot B2}{ec}; \# \text{Energy eV Sn117} = 6.620023680 \times 10^6; \text{Sn119} = 6.924539308 \times 10^6; \\
&\quad \text{Hg199} = 3.327887733 \times 10^6; \text{Hg201} = 3.685371015 \times 10^6; \text{Pb207} = 3.902501074 \times 10^6 \\
&\quad EeV := 3.685371015 \times 10^6 \tag{3}
\end{aligned}$$

$$\begin{aligned}
&> EJ := \hbar \cdot \gamma_0 \cdot I_0 \cdot (1 - I_0) \cdot B2; \# EJ \text{ Joule Sn117} = 1.060644306 \times 10^{-12}; \text{Sn119} = 1.109433069 \times 10^{-12}; \\
&\quad \text{Hg199} = 5.331861856 \times 10^{-13}; \text{Hg201} = 5.904612991 \times 10^{-13}; \text{Pb207} := 6.252493561 \times 10^{-13}; \\
&\quad EJ := 5.904612991 \times 10^{-13} \tag{4}
\end{aligned}$$

$$\begin{aligned}
&> E\text{JHg199201} := (5.331861856 \times 10^{-13} \cdot 0.132 + 5.904612991 \times 10^{-13} \cdot 0.168) \cdot 3.002213849 \times 10^{24}; \\
&\quad \# \text{Energy in } \frac{\text{Joule}}{\text{Kg}} \text{ Hg natural abundance} \\
&\quad E\text{JHg199201} := 5.091096447 \times 10^{11} \tag{5}
\end{aligned}$$

$$\begin{aligned}
&> NA := 6.02214076 \times 10^{23}; \# \text{Atoms per mol Hg} = 0.20059 \text{Kg} \\
&\quad NA := 6.022140760 \times 10^{23} \tag{6}
\end{aligned}$$

$$\begin{aligned}
&> \text{HgmolKg} := \frac{NA}{0.20059} \\
&\quad \text{HgmolKg} := 3.002213849 \times 10^{24} \tag{7}
\end{aligned}$$

$$\begin{aligned}
&> E\text{JSnPb117207} := (1.065433069 \times 10^{-12} \cdot 0.166 \cdot 4.751 \cdot 10^{22} + 6.252493561 \times 10^{-13} \cdot 0.221 \cdot 2.333 \cdot 10^{22}); \\
&\quad \# \text{with the approximation of Energy Sn}(117+119) = 1.065433069 \times 10^{-12} \text{J} \\
&\quad E\text{JSnPb117207} := 1.162645028 \times 10^{10} \tag{8}
\end{aligned}$$