$$\mathrm{KE} = \frac{1}{2}mv^2$$

$$\mathrm{KE} = (\gamma - 1)\, mc^2$$

$$\gamma = \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}}$$

$$\frac{v}{c} = \beta = \sqrt{1 - \frac{1}{\gamma^2}}$$

$$\text{rest energy} = mc^2$$

$$\begin{aligned} \text{total energy E} &= \text{rest energy} + \mathrm{KE} \\ &= (mc^2) + (\gamma - 1)\, mc^2 \\ &= \gamma mc^2 \end{aligned}$$

$$\mathrm{Po}^{210} \rightarrow \mathrm{Pb}^{206} + \mathrm{He}^{4}$$