

Nuclear Decay

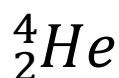
Equation Questions

1. In what way is a helium nucleus similar to an alpha particle?

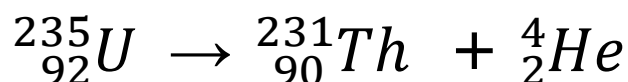
A helium nucleus contains two protons and two neutrons. An alpha particle also contains two protons and two neutrons.

A helium nucleus has a relative charge of +2 (because it contains two protons). An alpha particle also has a relative charge of +2 (because it also contains two protons).

2. What is the symbol for an alpha particle?



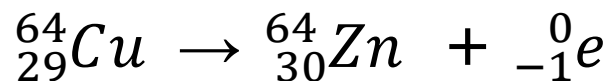
3. Complete the equation for the decay of uranium-235 into thorium-231 by alpha emission.



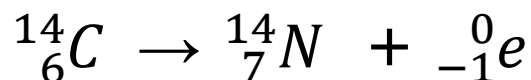
4. What is a beta particle?

An electron that is emitted when a neutron turns into a proton.

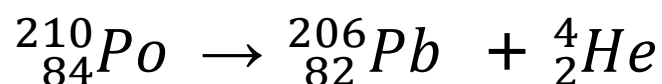
5. Complete the equation for the decay of copper-64 into zinc-64 by beta emission.



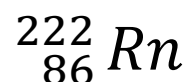
6. Complete the equation for the decay of carbon-14 into nitrogen.



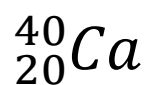
7. Complete the equation for the decay of polonium-210 into lead.



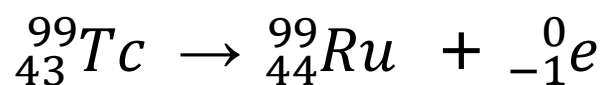
8. Radium-226 (${}^{226}_{88}\text{Ra}$) decays into Radon gas by alpha decay. Complete the symbol for the daughter nucleus.



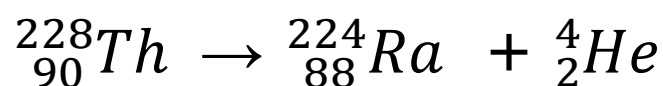
9. Potassium-40 (${}^{40}_{19}\text{K}$) decays into calcium by beta decay. Complete the symbol for the daughter nucleus.



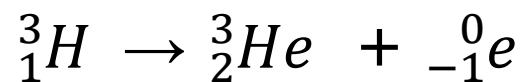
10. Technetium decays into ruthenium. Complete the equation.



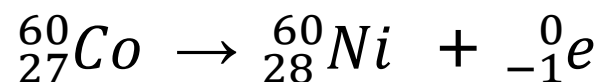
11. Thorium decays into radon. Complete the equation.



12. Hydrogen-3 can decay into helium-3. Write the equation.



13. Cobalt can decay to nickel by beta decay. Complete the equation.



14. Uranium can decay into thorium by alpha decay. Complete the equation.

