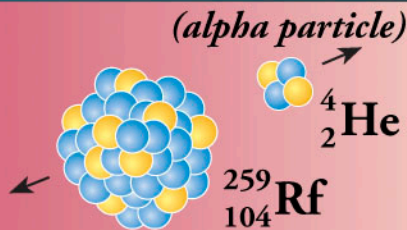


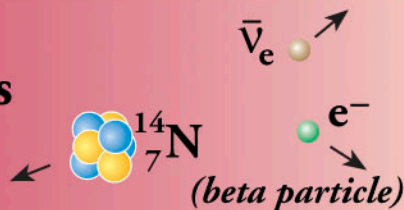
# Radioactivity



Alpha  
Decay



Beta Minus  
Decay



Beta Plus  
Decay



Gamma  
Decay



before

after

Radioactive decay transforms a nucleus by emitting different particles. In **alpha** decay, the nucleus releases a  $^4_2\text{He}$  nucleus—an alpha particle. In **beta** decay, the nucleus either emits an electron and antineutrino (or a positron and neutrino) or captures an atomic electron and emits a neutrino. A positron is the name for the antiparticle of the electron. Antimatter is composed of antiparticles. Both alpha and beta decays change the original nucleus into a nucleus of a different chemical element. In **gamma** decay, the nucleus lowers its internal energy by emitting a photon—a gamma ray. This decay does not modify the chemical properties of the atom.