

Physics 90184 Demonstrate understanding of heat transfer & nuclear physics

Nuclear Physics glossary

alpha α	particle made from two protons and two neutrons, identical to helium nuclei.
atom	smallest part of an element that cannot be broken up by chemical means.
atomic number	number of protons in the nucleus of an atom. It is also called the proton number.
beta β	high-energy electron emitted by unstable atomic nucleus when a neutron becomes a proton.
chain reaction	nuclear reaction where a neutron splits a nucleus, releasing more neutrons that go on to split even more nuclei.
control rod	rod able to absorb neutrons in a nuclear reactor to control the rate of fission of uranium or plutonium.
coolant	liquid or gas used to transfer the heat of nuclear fission to a heat exchanger in which steam is produced to drive the electrical generator.
electron	subatomic particle with a negative charge and a mass about 1/2000 of that of a proton or a neutron.
element	substance made of one type of atom only.
fission	the splitting of a nucleus to produce smaller nuclei.
fusion	the joining of small nuclei to form a larger nucleus. Fusion powers the Sun and stars.
gamma γ	high frequency electromagnetic radiation emitted during radioactive decay.
isotope	atoms of an element with the same number of protons but different numbers of neutrons.
mass number	total number of protons and neutrons in the nucleus - also called nucleon number.
moderator	material, such as water, or graphite, used in a reactor to slow down high-speed neutrons to increase the likelihood of further fission.
neutron	uncharged sub-atomic particle with the same mass as a proton.
nucleon number	number of nucleons (protons and neutrons) in a nucleus.
proton number	number of protons in the nucleus of an atom - also called the atomic number.
proton	sub-atomic particle with a positive charge and the same mass as a neutron
radioactive	substance emitting radiation.
radioisotope	a radioactive isotope.
shielding	material such as lead or concrete that acts as a barrier to prevent the escape of radiation.
unstable	nucleus that may break apart, releasing radiation and forming smaller nuclei.