

WJEC England GCSE Physics

9.3 - Hazards and Uses of Radioactive Emissions and of Background Radiation

Flashcards



What factor determines how dangerous a particular radioactive isotope is?



What factor determines how dangerous a particular radioactive isotope is?

The half-life of the isotope.



Why are isotopes with long half-lives particularly harmful?



Why are isotopes with long half-lives particularly harmful?

- They remain radioactive for much longer periods of time.
- They must be stored in specific ways to avoid humans and the environment from being exposed to radiation for too long.



State **two** uses of nuclear radiation in the field of medicine.



State **two** uses of nuclear radiation in the field of medicine.

1. Examining of internal organs.
2. Controlling and destroying unwanted tissue.



How is radiation used in sterilisation?



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Gamma emitters are used to kill bacteria/parasites on equipment.



Explain the process of radiotherapy.



Explain the process of radiotherapy.

- Gamma emitters direct gamma rays at the cancerous cells.
 - The cancerous cells absorb the radiation and are killed.



How are medical tracers chosen?



How are medical tracers chosen?

They should have a short half life and decay into a stable isotope which can be excreted.

They should only release gamma radiation since it is weakly ionising and can easily pass through body tissue without damaging it.

