

Effect of Lead Thickness on Radiation Detection

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Abstract

In our investigation, we examined how varying thicknesses of lead influence the detection of radiation emitted by Cobalt-60, a widely utilized radioactive isotope. Utilizing a scintillator, we quantified the radiation intensity across different lead shields. Our observations revealed a predictable decline in radiation intensity with increased lead thickness, aligning with theoretical expectations. Notably, this attenuation follows an exponential trend, underscoring the complex dynamics of radiation shielding. These insights contribute valuable knowledge towards optimizing radiation protection materials, emphasizing the exponential nature of radiation attenuation through lead. This understanding is crucial for designing more effective shielding strategies in both medical and industrial applications, enhancing safety protocols against radioactive exposure.