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Standard Test Method for Measuring Fast-Neutron Reaction Rates by Radioactivation of Copper¹

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1. Scope

1.1 This test method covers procedures for measuring reaction rates by the activation reaction $^{63}\text{Cu}(n,\alpha)^{60}\text{Co}$. The cross section for ^{60}Co produced in this reaction increases rapidly with neutrons having energies greater than about 5 MeV. ^{60}Co decays with a half-life of 1925.1 days (± 0.5 days)² and emits two gamma rays having energies of 1.17323 and 1.3325 MeV^{3,3}. The isotopic

¹ This test method is under the jurisdiction of ASTM Committee E10 on Nuclear Technology and Applications and is the direct responsibility of Subcommittee E10.05 on Nuclear Radiation Metrology.

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