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Title: Determination of the neutron detection efficiency of an NE213 scintillator for E-n = 2.5 to 16 MeV using the H-2(d,n)He-3 reaction

Author(s): AlOhal, MA; Aksoy, A; Coban, A; Hanly, JM; Felsher, PD; Howell, CR; Tornow, W; Salinas, F; Walter, RL

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Abstract: The absolute efficiency of an NE213 liquid scintillator of 12.7 cm diameter and 5.08 cm thickness was measured in the neutron energy range 2.5-16 MeV using the H-2(d,n)He-3 reaction as a source of monoenergetic neutrons. The efficiencies were measured at the time-of-flight facility of Triangle Universities Nuclear Laboratory (TUNL). The experimental data are compared to calculations from the Monte Carlo code NEFF of Physikalisch-Technische Bundesanstalt, Braunschweig, Germany (PTB).