# $^{142}$Sm

In 1959, Gratot et al. reported the observation of $^{142}$Sm in "Étude de quelques isotopes très déficients en neutrons du prométhéum et du samarium" (1959Gr98). Alpha-particles were accelerated with the Saclay cyclotron to 44 MeV and bombarded an enriched $^{142}$Nd target. Beta-decay curves were measured with a Geiger counter. "En conclusion, les résultats expérimentaux montrent clairement que l'activité de 8.6 minutes provient de la réaction $^{142}$Nd($\alpha$,3n)$^{143}$Sm et que l'activité de 73 minutes provient de la réaction $^{142}$Nd($\alpha$, 4n)$^{142}$Sm." [In conclusion, the experimental results clearly show that the 8.6 minute activity is due to the reaction $^{142}$Nd($\alpha$,3n)$^{143}$Sm and that the 73 minute activity is due to the reaction $^{142}$Nd($\alpha$,4n)$^{142}$Sm.] In the 1958 Table of Isotopes a half-life of 72 min was tentatively assigned to $^{142}$Sm based on a private communication (1958St50).

Adapted from reference (2013Ma01)


1958St50 D. Strominger, J. M. Hollander, and G. T. Seaborg, Rev. Mod. Phys. **30**, 585 (1958).

1959Gr98 I. Gratot, M. Le Pape, J. Olkowsky, and G. Ranc, Nucl. Phys. **13**, 302 (1959).

2013Ma01 E. May and M. Thoennessen, At. Data Nucl. Data Tables **99**, 1 (2013).



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