# $^{35}$Na

Langevin et al. reported the observation of $^{35}$Na in the 1983 paper "$^{35}$Na: A new neutron-rich sodium isotope" (1983La12). The CERN synchrotron was used to bombard an iridium target with 10 GeV protons. $^{35}$Na was identified with the on-line mass spectrometer. Beta-delayed neutrons were measured with a NE213 liquid scintillator. "During the collection of alkali isotopes a multiscaler device defines the time occurrence of each 3-coincident neutron event after each fast extraction beam pulse. [The figure] shows the experimental time occurrence of $\beta$-coincident neutrons for the collection of mass 34 and 35 alkali ions. The 33 events of mass 35 were obtained in 20 h, corresponding to $5\times10^{16}$ protons on the target... A straightforward $\chi^2$ analysis of the experimental results of [the figure] convoluting the time dependence of Na ion production and the $\beta$-decay gives half-lives of (5.5$\pm$1.0) ms for $^{34}$Na and (1.5$\pm$0.5) ms for $^{35}$Na." The measured half-life was1.5(5) s.

The production yield of $^{35}$Na was reported by Ravn in 1979, however, no properties of $^{35}$Na were measured nor were individual nuclei uniquely identified (1979Ra37).

Adapted from reference (2012Th10)


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