^{51}Mn

In 1938, Livingood and Seaborg outlined their discovery of ^{51}Mn in the article "Radioactive Manganese Isotopes" (1938Li10). The reactions for this isotope made use of deuterons at energies of 5.5 and 7.6 MeV, and helium ions at energies of 16 MeV at the Berkeley cyclotron. The bombardment of ^{50}Cr by deuterons and neutrons was used to yield ^{51}Mn. Decay curves were measured with a quartz fiber electroscope following chemical separation. "The Cr(d,n)Mn reaction could lead to Mn^{51}, Mn^{53}, Mn^{54}, and of these possibilities we believe the 46-minute activity must be assigned to Mn^{51}... Two positron emitting manganese isotopes Mn^{52} and Mn^{54} can be expected through the disintegration type Fe(d,α)Mn; nevertheless, we believe both these activities must be described as isomers of Mn^{52}." The extracted half-life was 46(2) min for ^{51}Mn. Half-lives of 5 d (1937Li02), 21 min (1937Li02, 1937Da01) and 42 min (1938Du01) had previously been reported, however, no mass assignments were made.

Adapted from reference (2012Ga06)

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