Determination of gamma-ray emission probabilities and half-life of ^{101}Mo

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The data of absolute emission probabilities of ^{101}Mo were much different in some literatures, and its half-life was also inaccurate. In this paper, the gamma-ray emission probabilities of ^{101}Mo have been measured with balance of scheme method using a vertical HPGe detector with a relative efficiency of 60%. The absolute emission probabilities of the main gamma-rays were determined from the absolute gamma-ray intensities and the disintegration rates, the results were 18.07±0.19% for 191.92keV, 20.39±0.43% for 590.10keV and 15.11±0.27% for 1012.47 keV, respectively. The ^{101}Mo half-life was measured by relaying between two horizontal HPGe detector with a relative efficiency of 100% over a period of ∼10 half-lives. The result is 14.86±0.01 minutes.

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