

## Ranges of radon and mercury isotopes with energies of 0.12-0.25 MeV/amu in aluminum

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The ranges in aluminum of radon and mercury isotopes, produced in  $xn$ -evaporation channels of the complete fusion reactions  $^{40}\text{Ar}+^{144}\text{Sm}$ ,  $^{36}\text{Ar}+^{148}\text{Sm}$ ,  $^{40}\text{Ca}+^{144}\text{Nd}$ ,  $^{48}\text{Ca}+^{142}\text{Nd}$  and  $^{40}\text{Ar}+^{166}\text{Er}$ , have been measured in energy range of 0.12 – 0.25 MeV/amu. The energies of the primary beams, delivered by the cyclotron U-400M, were measured by the time-of-flight method with an accuracy of 0.5% (FWHM). The evaporation residual energies and their energy spreads were calculated proposing consecutive neutron evaporation cascades from the compound nuclei produced at some depths in the target. The beam interruption method was applied for the isotope identification. Five thin aluminum absorbers were installed on a linear pneumatic actuator. In the accumulation mode, the foils were placed one under another, so that the reaction products were stopped at different depths in the proper foils. In the measurement mode, the foil array was extended to its full width so that each foil was placed opposite to the corresponding silicon detectors registered  $\alpha$ -decays of short-lived radon and mercury isotopes. The measured ranges have been compared with the predictions of SRIM code.

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