

NUCLEAR DATA EVALUATIONS FOR AMERICIUM ISOTOPES

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A recent highlight of nuclear data evaluation is for minor actinides such as americium isotopes, which is getting more important for nuclear technology applications, especially for nuclear transmutation, accelerator driven system, and high burn-up reactor calculations. In 2003, we re-evaluated the ^{241}Am capture, (n,2n), and fission data by considering integral / differential experimental data. The new data of branching ratio to produce ^{242}Am meta-stable state were tested against some integral quantities, and we still have a plan to improve capture and $\bar{\nu}_p$ data for ^{241}Am .

In this study we describe recent upgrades of ^{241}Am , $^{242g,m}\text{Am}$ and ^{243}Am data in the keV – 30 MeV range, to take advantage of recent measurements and advances in calculational modeling methods which are especially important for nuclides where few measurements are available. A new ^{240}Am evaluation is also needed — this presents a particular challenge for nuclear theory, since no measurements exist owing to its short half-life (50.8 hours). The nuclear model code GNASH is extensively used for our evaluations, by adjusting nuclear model parameters to reproduce the experimental data available.