

TENDL-2021 library for (alpha,n) cross sections

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The next version of the TALYS Evaluated Nuclear Data Library, TENDL-2021, contains an improved overall description of (alpha,n) cross sections and other reaction channels over the whole nuclide range. While for the important light nuclides the detailed resonance structure is obviously missing from the statistical model calculations, it is shown that TALYS generally provides a reasonable description of the excitation function, generally within 30%. For alpha-induced reactions, particular models for the optical model potential, level density and pre-equilibrium reactions are chosen. As production into ENDF and GNDs format has been automated, TENDL-2021 is particularly useful for general application in nuclear technology.

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