

# Neutron Capture Cross-section Evaluation on 160Dy, 161Dy, 162Dy, 163Dy, 164Dy

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## Abstract

The neutron capture cross-sections on 160Dy to 164Dy were evaluated theoretically using a spherical optical model, a statistical model and a pre-equilibrium model code and the calculation was finalized in ENDF-6 file format in the energy range of 1keV to 20MeV. Dysprosium is considered as a burnable absorber in nuclear fuel and control rod material. ABRXPL was helpful to decide the optical model potential parameters in a real time. ABAREX, SCAT2 and GNASH codes were used to calculate the cross-sections based on experimental data. The capture cross-section calculated by the energy dependent potential parameters gave good agreement with the experimental data in the measured energy range. The calculated values were compared with the ENDF/B-VI data.