NEUTRON TOTAL CROSS SECTION MEASUREMENTS IN THE ENERGY REGION FROM 47 keV to 20 MeV*

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ABSTRACT

Neutron total cross sections were measured for 26 elements. Data were obtained in the energy range from 47 keV to 20 MeV for 11 elements in the range of light-mass fission products. Previously reported measurements for eight heavy and actinide isotopes were extended to 20 MeV. Data were also obtained for Cu (47 keV to 1.4 MeV) and for Sc, Zn, Nd, Hf, and Pt (1.8 to 20 MeV). The present work is part of a continuing effort to provide accurate neutron total cross sections for evaluations and for optical-model parameterizations. The latter are required for the derivation of other nuclear-data information of importance to applied programs.

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