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Fission-product yield and fission-neutron data for minor actinides

by M.C. Brady, R.Q. Wright, T.R. England

Description of the PC diskettes

by H.D. Lemmel

Abstract: This document summarizes the contents of a set of 2 PC diskettes that contain the data tables referred to in the report ORNL/CSD/TM-266 on Actinide Nuclear Data for Reactor Physics Calculations (1991) by M.C. Brady, R.Q. Wright, T.R. England. Copies of the diskettes are available upon request from the IAEA Nuclear Data Section, costfree.

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Fission-product yield and fission-neutron data for minor actinides

(Also included: Half-lives and atomic masses of fission product nuclei)

Description of the contents of 2 PC diskettes.

Reference:

- M.C. Brady, R.Q. Wright, T.R. England
  "Actinide Nuclear Data for Reactor Physics Calculations"
  report ORNL/CSD/TM-266 (1991)

This report which describes the data evaluation in detail, refers to evaluated data tables of which only samples are reproduced in the report. The complete data tables are contained on 2 PC diskettes available from the authors or from the IAEA Nuclear Data Section.

The data tables contain the data types summarized in Table 1. The tables on the diskettes are standard text files; note that the size of a file is up to 0.8 Mbytes and that the record length may exceed 80.

Most of the data are based on calculational methodologies and should be revised as experimental data become available. The data were evaluated for ENDF/B-6. In areas of overlap ENDF/B-6 data should be identical; in case of discrepancies, ENDF/B-6 data (specifically subsequent updates) will supersede the present data.

NDS internal file name: BRADY

Table 1. Summary of data presented

Fissioning system[a]	Fission yield data	Delayed neutron data	Prompt neutron spectra	Prompt neutron yield
^{235}U(F)				X
^{238}U(F)				X
^{237}Np(T)	X	X		
^{237}Np(F)	X	X	X	X
^{238}Pu(F)	X	X	X	X
^{239}Pu(F)				X
^{240}Pu(T)	X	X		
^{240}Pu(F)				X
^{242}Pu(T)	X	X		
^{242}Pu(H)	X	X		
^{241}Am(F)	X	X	X	X
^{243}Am(F)	X	X	X	X
^{242}Cm(S)				X
^{242}Cm(F)	X	X		
^{243}Cm(T)	X	X		X
^{243}Cm(F)	X	X	X	X
^{244}Cm(S)				X
^{244}Cm(T)				X
^{244}Cm(F)	X	X	X	X
^{245}Cm(T)				X
^{245}Cm(F)			X	X
^{246}Cm(S)	X	X		X
^{246}Cm(T)				X
^{246}Cm(F)	X	X	X	X
^{247}Cm(T)				X
^{247}Cm(F)			X	X
^{248}Cm(S)				X
^{248}Cm(T)				X
^{248}Cm(F)	X	X	X	X

[a] T, F, H, and S denote thermal, fast, high-energy ($\sim$14 MeV), and spontaneous fission, respectively.

Diskette 1

File	Size	Contents
A	277530	fission yield data (chain, indep., direct) for Np-237(F), Pu-238(F), Am-241,243(F), Cm-242(F)
B	769961	fission yield data for Np-237(T), Pu-240(T), Pu-242(T,H), Cm-243(T,F), Cm-244(F), Cm-246(S,F), Cm-248(F)
C	90345	delayed neutron data for Np-237(F), Pu-238(F), Am-241,243(F), Cm-242(F)

Diskette 2

D	62185	delayed neutron data for Np-237(T), Pu-240(T), Pu-242(T,H), Cm-243(T,F), Cm-244(F), Cm-246(S,F), Cm-248(F)
E	26961	prompt neutron spectra data
F	24884	prompt neutron yield data
G	4814	atomic mass values

Files A to D are dated 1989.
Files E to G are dated 1991.