



INTERNATIONAL ATOMIC ENERGY AGENCY

# NUCLEAR DATA SERVICES

DOCUMENTATION SERIES OF THE IAEA NUCLEAR DATA SECTION

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IAEA-NDS-0024  
Rev. 2

## ENDF/B-5 (Revision 2) Dosimetry File

Summary of Contents and Documentation

### Abstract

This document summarizes the contents and documentation of the ENDF/B-5 (Rev. 2) Dosimetry File released in October 1979 and modified in August 1981 and March 1984. The file contains data for 36 neutron reactions of 26 isotopes which are used for neutron flux dosimetry by foil activation. The entire file or selective retrievals from it can be obtained free of charge from the IAEA Nuclear Data Section.

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Rev. 1- September 1981  
Rev. 2- July 1984

Revised by P.K.McLaughlin IAEA/NDS Jan. 2005

The file was revised to conform with ENDF/B format standards.. The merged file was corrected for format errors and processed through the code CHECKR to ensure, as far as possible, format compatibility.

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# ENDF/B-V Dosimetry File

## Point and Group Data

### CONTENTS

This evaluated data file contains neutron cross-sections for materials that are used for neutron flux dosimetry by foil activation.

The first version of the ENDF/B-V Dosimetry File was released in October 1979 by the National Nuclear Data Center (NNDC) at the Brookhaven National Laboratory, USA. In August 1981 data for ten nuclides were modified and one reaction was added. In March 1984 a new revision (Rev. 2) of the ENDF/B-V Dosimetry File was released. The list of all important modifications corresponding to the Revision 2 of the ENDF/B-V Dosimetry File is given in the Appendix. Included are now data for 36 neutron reactions of 26 isotopes as listed in the table of contents.

The file is available in the ENDF/B-5 normal format (internal library name EN5.2DOS) on tape or printed listing.

The cross-sections are given as resonance parameters in the resonance region and as point data above. The energy range is from  $10^{-5}$  eV resp. from threshold up to 20 MeV.

### FORMAT

The ENDF/B-5 is documented in ENDF-102, 2nd ed., Oct. 1979 (BNL-NCS-50496), by

R. Kinsey, available as microfiche IAEA-NDS-10/102.

For quick reference of the ENDF/B format (file numbers and reaction type numbers of the most important data types) refer to document IAEA-NDS-10.

### DOCUMENTS

B.A. Magurno; ENDF/B Dosimetry File for version V, Neutron Cross Sections for Reactor Dosimetry, IAEA-208, Vol. I, pp. 375-394

S.F. Mughabghab; Evaluation of the capture cross section of Au-197, *ibid* pp. 395-406

M. Divadeenam; Ni-58(n,p), (n,2n) and Ni-60(n,p) evaluation for ENDF/B-V *ibid*, pp. 407-423

R. Kinsey; ENDF/B Summary Documentation, BNL-NCS-17541 (ENDF-201), 3rd edition (ENDF/B-V), July 1979

P.G. Young (comp.); Summary documentation of LASL nuclear data evaluations for ENDF/B-V. LA-7663-MS, January 1979

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Isotope	Data Type	Mat. No.	Version (NMOD of material date of release)
3-Li-6	(n,Total He)	6424	Mod. 2, 84/3
5-B-10	(n,Total He)	6425	Mod. 2, 84/3
11-Na-23	(n, $\gamma$ )	6311	79/9
13-Al-27	(n,p),(n, $\alpha$ )	6313	79/9
16-S-32	(n,p)	6439	81/8
21-Sc-45	(n, $\gamma$ )	6426	Mod. 2, 84/3
22-Ti-46	(n,p)	6427	Mod. 2, 81/8
22-Ti-47	(n,np),(n,p)	6428	Mod. 2, 84/3
22-Ti-48	(n,np),(n,p)	6429	Mod. 2, 81/8
25-Mn-55	(n,2n)	6325	79/9
26-Fe-54	(n,p)	6430	Mod. 3, 84/3
26-Fe-56	(n,p)	6431	79/9
26-Fe-58	(n, $\gamma$ )	6432	Mod. 2, 81/8
27-Co-59	(n, $\gamma$ ),(n, $\alpha$ ),(n,2n)	6327	Mod. 2, 84/3
28-Ni-58	(n,2n),(n,p)	6433	Mod. 3, 84/3
28-Ni-60	(n,p)	6434	Mod. 2, 81/8
29-Cu-63	(n, $\gamma$ ),(n, $\alpha$ )	6435	Mod. 2, 84/3
29-Cu-65	(n,2n)	6436	79/9
49-In-115	(n,n'),(n, $\gamma$ )	6437	Mod. 3, 84/3
53-I-127	(n,2n)	6438	Mod. 2, 81/8
79-Au-197	(n, $\gamma$ )	6379	Mod. 2, 84/3
90-Th-232	(n,f),(n, $\gamma$ )	6390	Mod. 2, 84/3
92-U-235	(n,f)	6395	Mod. 2, 84/3
92-U-238	(n,f),(n, $\gamma$ )	6398	Mod. 3, 84/3
93-Np-237	(n,f)	6337	Mod. 3, 84/3
94-Pu-239	(n,f)	6399	Mod. 2, 84/3

#### APPENDIX

The following modifications have been introduced (Rev. 2)  
Dosimetry File in comparison to Rev. 1 version:

- resonance parameters and/or cross-sections were completely revised for materials 6337 (93-Np-237), 6390 (90-Th-232), 6398 (92-U-238), 6437 (49-In-115);
- covariances of resonance parameters or cross-sections were revised for materials 6395 (92-U-235), 6399 (94-Pu-239), 6424 (3-Li-6), 6425 (5-B-10), 6435 (29-Cu-63);
- small corrections of the cross-sections near threshold or for a few energy points were introduced for materials 6327 (27-Co-59), 6379 (79-Au-197), 6426 (21-Sc-45), 6428 (22-Ti-47), 6430 (26-Fe-54), 6433 (28-Ni-58).