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**Note:** Unless indicated otherwise, the quoted data, documents or codes are available costfree upon request. - When requesting data on magnetic tape, kindly specify the acceptable density (1600 or 6250 bpi), maximum block size, and whether the data should be in EBCDIC or ASCII code. Only 9 track tapes are used. Not too large data files or computer codes can also be sent on DOS standard diskettes (either 5.25 inch, 1.2 Mb or 3.5 inch, 1.44 Mb).

#### Data indexes and bibliographies

**CINDA-90**, the 1990 edition of the bibliography and data index for microscopic neutron data is now available for a sales price of 360.- Austrian Schillings. It covers the period 1987-1990 and supplements the books CINDA A (1935-1976), CINDA B (1977-1981), and CINDA-89 (1982-1987). How to purchase priced IAEA publications, see the previous issue of this newsletter.

#### New data libraries received

**ENDF/B-6**, the U.S. evaluated nuclear data library for neutron reaction data. This comprehensive data library was released in the period Jan.-April 1990 by the U.S. National Nuclear Data Center at the Brookhaven National Laboratory on behalf of the U.S. Cross-Section Evaluation Working Group. The data are coded in ENDF-6 format. The presently available version has a size of about 473000 records with evaluated neutron reaction data for 300 materials from 1-H-1 to 99-Es-253 in the neutron energy range from 0 to 20 MeV. It should be noted, however, that data for some important materials (e.g. 1-H-2, 92-U-235) have not yet been released and are still missing. They are expected to be released in the near future. - The contents of the data library is summarized in the document IAEA-NDS-100 Rev.2 (June 1990). - The entire library or selective retrievals from it are available on magnetic tape, free of charge.

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Note: The originators advise that the correct spelling is ENDF/B-VI for the data library and ENDF-6 for its format. As the Roman VI is not very practical for computerized logs, we use Arabic numbers throughout for the versions of data libraries.

ENDF-6 Format. A new version of the "ENDF-6 Formats Manual" is now available under the document code IAEA-NDS-76 Rev.2. It is a reprint of the report ENDF-102, March 1990, edited by P.F. Rose and C.L. Dunford: Data formats and procedures for the evaluated nuclear data file, ENDF.

As data libraries in the earlier formats ENDF-4 and ENDF-5 will remain in use, format manuals are still available: IAEA-NDS-74 Rev.0 for ENDF-4 and IAEA-NDS-75 Rev.1 for ENDF-5.

The ENDF/B-6 Library Organization. The Library quoted above is the ENDF/B-6 "sublibrary" for neutron reaction data only. Additional sublibraries are expected for incident protons, decay data, photon interaction, neutron thermal scattering law, and fission-product yields. In addition to the main ENDF/B-6 library for neutron reaction data, there are a few "special purpose" neutron data libraries:

- ENDF/B-6 standards: released already in 1987, see IAEA Nuclear Data Newsletter No. 11.
- ENDF/B-6 dosimetry data: see below.
- ENDF/B-6 activation data: see below.

These three special purpose libraries could, in principle, be retrieved from the main ENDF/B-6 library. However, at present they contain certain data of materials for which the complete evaluations have not yet been released and are therefore missing in the ENDF/B-6 main library.

- ENDF/B-6 fission-products neutron cross-section data, and
- ENDF/B-6 actinides neutron reaction data: These two special purpose libraries are not stored as separate libraries but are included in the ENDF/B-6 main library and can be retrieved from it. Corresponding retrievals may be requested from the IAEA Nuclear Data Section.

ENDF/B-6 Dosimetry Data Library. This includes selected reactions from 23 materials that are used for reactor neutron dosimetry by foil activation. It has a size of 15887 records. In contrast to some other neutron dosimetry libraries which are in a 640-group structure, this library is in the normal ENDF-6 format with resonance parameters. For many but not all of the materials, covariance data are included. A summary of its contents is included in the document IAEA-NDS-100 Rev.2. - The library is available on magnetic tape or on a set of two PC diskettes, free of charge.

ENDF/B-6 Activation Data Library. This includes selected reactions from 68 materials. It has a size of 23003 records. A summary of its contents is included in the document IAEA-NDS-100 Rev.2 - The library is available on magnetic tape or on a set of two PC diskettes, free of charge.

JENDL-3, the Japanese evaluated nuclear data library for neutron reaction data. This comprehensive data library was compiled and tested by the Nuclear Data Center of the Japanese Atomic Energy Research Institute and made available through the NEA Data Bank. The data are coded in ENDF-5 format. The library has a size of about 576000 records with evaluated data for 171 materials from 1-H-1 to 100-Fm-255 in the energy range from  $10^{-5}$  eV to 20 MeV. It does not include the bulk of fission-product nuclides which will be released as a separate library. - The contents of JENDL-3 is summarized in the document IAEA-NDS-110 Rev.1 (June 1990). - The entire library or selective retrievals from it are available on magnetic tape, free of charge.

BROND, ENDF/B-6, JENDL-3. A compact joint index to these recently released data libraries is available as document IAEA-NDS-107.

ENDF/HE-6, a high-energy data library containing at present only data for reactions on  $^{26}\text{Fe}$  induced by high-energy neutrons and protons.

#### Handbooks

Nuclear Data Guide for Reactor Neutron Metrology, by J.B. Baard, W.L. Zijp, H.J. Nolthenius, 1989. Sold and distributed by Kluwer Academic Publishers Group, P.O. Box 322, 3300 AH Dordrecht, The Netherlands. Price 250.- Dfl. This handbook contains a comprehensive compilation of nuclear data required for reactor neutron metrology by foil activation. It was produced on behalf of the Euratom Working Group on Reactor Dosimetry which recommends the data contained in this handbook for use within the European Community. The Nuclear Data Guide contains data for 87 reactions and 11 fission products. Table 1 presents a survey of the reactions published in the guide, together with the main gamma rays of the reaction products. Two tables of accurate gamma energies are incorporated for gamma spectrometer calibration. Table 4 gives the data calculated for the energy-dependent cross-sections of the DOSCROSS84 library. A summary of these data for  $\sigma_0$  and  $I$  and data calculated by another method is given in table 5. Tables 6 and 7 summarise experimental and calculated data for spectrum averaged cross-sections in the U-235 and Cf-252 fission spectra. Table 8 gives a summary of cross-sections at 14 MeV. Information on the availability of multigroup cross-section data is given in table 9. Values of effective cross-section and accompanying threshold data are presented in tables 10 and 11. Appendix 1 gives air kerma rate constants. Appendices 2 and 3 display representations of the U-235 and Cf-252 fission spectra. Neutron irradiation damage is discussed in Appendix 4. Appendix 5 lists information on reference materials for neutron metrology. - Not available from IAEA.

Photon-Interaction Cross-Sections. Tables and graphs of photon-interaction cross-sections from 10 eV to 100 GeV derived from the LLNL Evaluated Photon Data Library (EPDL), by D.E. Cullen et al., Lawrence Livermore National Laboratory, USA; report UCRL-50400 vol.6 rev.4 (1989); 804 pages in 2 volumes (Z=1 to 50 resp. Z=51 to 100). It contains cross-sections, average energy deposits, and form factors in tabular and graphic form; in addition, photoelectric cross-sections for each shell and coherent anomalous scattering factors are presented in graphic form. - This handbook is not available from the IAEA Nuclear Data Section. Contact the IAEA Microfiche Service, or the US National Technical Information Service, 5285 Port Royal Rd., Springfield, VA, USA-22161.

Beta and antineutrino decay of radionuclides. A handbook with 700 pages of numerical tables plus 100 pages of text in Russian, by V.G. Aleksankin, S.V. Rodichev, P.M. Rubcov, P.A. Ruzhanskij, F.E. Chukreev, Moscow, Energoatomizdat 1989. - Not available from IAEA.

#### Meeting Proceedings

Nuclear Spectroscopy and Nuclear Structure, 40th All-Union Conference, Leningrad, USSR, 10-13 April 1990. A volume of abstracts of about 500 papers, in Russian. Available from the IAEA Nuclear Data Section.

Measurement, Calculation and Evaluation of Photon Production Cross-sections in neutron and proton induced reactions, Smolence, CSFR, 5-7 Feb. 1990. The summary report on this IAEA specialists meeting edited by N.P. Kocherov is available as report INDC(NDS)-233.

Measurement and Analysis of Double Differential Neutron Spectra in (p,n) and ( $\alpha$ ,n) Reactions, final meeting of an IAEA Co-ordinated Research Programme, Bologna, Italy, 13-15 Nov. 1989. Proceedings edited by N.P. Kocherov, available as report INDC(NDS)-234.

50th Anniversary of Nuclear Fission, international conference, Leningrad, USSR, 16-20 Oct. 1989. A volume of abstracts of about 130 papers, in English. Few copies available from the IAEA Nuclear Data Section.

Nuclear Data for Radiation Damage Assessment and Related Safety Aspects, an IAEA Advisory Group Meeting, Vienna, 19-22 Sept. 1989. Proceedings edited by N.P. Kocherov, available as report INDC(NDS)-231.

Activation Cross-Sections for the generation of long-lived radionuclides of importance in fusion reactor technology. An IAEA Consultants Meeting held at the Argonne National Laboratory, USA, 11-12 Sept. 1989. Proceedings edited by Wang Dahai, available as report INDC(NDS)-232.

Symposium on Nuclear Decay Data: Spectrometric Methods, Measurements and Evaluations, organized by the International Committee for Radionuclide Metrology, Braunschweig, FRG, 6-8 June 1989. The proceedings edited by B.M. Coursey, R.G. Helmer, A.L. Nichols, J.G.V. Taylor were published in the journal "Nuclear Instruments and Methods in Physical Research" vol.A286 No.3 (Jan. 1990). - Not available from IAEA.

Selected new publications on nuclear data

- \* = document available costfree from IAEA/NDS upon request
- = available from the originator, or from the IAEA Microfiche Service (P.O. Box 100, A-1400 Vienna, Austria)

Neutron nuclear data evaluation

- \* JAERI-M-90-024. Evaluation of neutron data for He-3 and He-4. K. Shibata
- \* JAERI-M-90-012. Evaluation of neutron data for O-16. K. Shibata.
- ANL/NDM-115. Evaluated neutronic file for indium. A.B. Smith et al.
- \* JAERI-M-89-008. Evaluation of nuclear data for Am isotopes. T. Nakagawa.

Nuclear theory

- \* JAERI-M-90-006. A nuclear cross-section calculation system, SINCROS-2. N. Yamamuro
- \* INDC(GDR)-57. Contributions to the theory of fission neutron emission. D. Seeliger, H. Märten, A. Ruben
- \* FU-SAV-89/5. PREQAG2: an updated PC version of a fully pre-equilibrium computer code with gamma-emission. E. Betak. - A PC diskette with the code is also available.
- \* INDC(CUB)-2. Analysis of the low energy neutron inelastic scattering in the mass range 48 to 64. R. Caezas et al.

Neutron reaction data measurements

- \* JAERI-M-89-214. Measurement of double differential neutron emission cross-sections at 14.1 MeV for Ca, Mn, Co and W. A. Takahashi et al.
- \* INDC(EGY)-5. Research performed at the ET-RR-1 reactor (Cairo) using the neutron scattering equipment. M. Adib et al.

Photonuclear Data

- \* NIIJaF-MGU-89-66/143. Investigation of reasons for discrepancies in results of photonuclear experiments at the beams of bremsstrahlung and quasimonoenergetic gamma-quanta. V.V. Varlamov et al.

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