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ENDF/B-VI TSL2

By R.E. MacFarlane, Los Alamos National Laboratory,
Issued by the U.S. national Nuclear Data Center,
1995

Summary of contents

by H.D. Lemmel

Abstract: This neutron nuclear data library contains thermal neutron scattering law data for twelve neutron moderator materials. The data library is in ENDF-6 format. The data library is available on magnetic media from the IAEA Nuclear Data Section free of charge. The library is also available online within NDIS, the Nuclear Data Information System, or from the WWW page of the Nuclear Data Section.

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Online: TELNET or FTP: iaeand.iaea.or.at
username: IAEANDS for interactive Nuclear Data Information System
usernames: NONYMOUS for FTP file transfer;
FENDL2 for FTP file transfer of FENDL-2.0;
RIPL for FTP file transfer of RIPL;
NDSONL for FTP access to files sent to NDIS "open" area.
Web: http://www-nds.iaea.or.at

Note:

The IAEA-NDS-reports should not be considered as formal publications. When a nuclear data library is sent out by the IAEA Nuclear Data Section, it will be accompanied by an IAEA-NDS-report which should vie the data user all necessary documentation on contents, format and origin of the data library.

IAEA-NDS-reports are updated whenever there is additional information of relevance to the users of the data library.

For citations care should be taken that credit is given to the author of the data library and/or to the data center which issued the data library. The editor of the IAEA-NDS-report is usually not the author of the data library.

Neither the originator of the data libraries nor the IAEA assume any liability for their correctness or for any damages resulting from their use.

96/11

Citation guideline:

The data library should be cited as follows:

> R.E. MacFarlane, "New thermal neutron scattering files for ENDF/B-VI release 2" report LA-12639-MS (ENDF-356), (Los Alamos National Laboratory, March 1994). The ENDF/B-VI Thermal Neutron Scattering sublibrary, release 2, by the U.S. National Nuclear Data Center, May 1995. Data Received on tape by the IAEA Nuclear Data Section.

ENDF/B-6 TSL2

The ENDF/B-6 Thermal Neutron
Scattering Sublibrary, Release 2

by R.E. MacFarlane, Los Alamos National Laboratory,
issued by the U.S. National Nuclear Data Center,
1995

Summary documentation
by H.D. Lemmel

This data library contains thermal neutron scattering law data for the following materials

MAT	Mod	Material
1	1	Water
2	1	Para-hydrogen
3	1	Ortho-hydrogen
7	1	Hydrogen in ZrH
12	1	Para-deuterium
13	1	Ortho-deuterium
26	1	Beryllium metal
27	1	Beryllium oxide
31	1	Graphite
33	1	*l*-methane
34	1	*s*-methane
58	1	Zirconium in ZrH

given at 8 temperatures between 296 and 1000 K.

The data have been evaluated by R.E. MacFarlane, Los Alamos National Laboratory, USA, see report LA-12639-MS (ENDF-356) March 1994.

The data library is in ENDF-6 format, see document IAEA-NDS-76, chapter 7 for thermal neutron scattering law data.

The data library has been released by the U.S. National Nuclear Data Center in May 1995 on the tapes 132 and 133.

The data can be processed by the code NJOY which is available from the Radiation Shielding Information Center, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, Tennessee, USA-37831.

The data library has a size of 110 490 records or about 9 Megabytes. It is available from the IAEA Nuclear Data Section on magnetic tape, costfree upon request.

History:

The present **Release 2** of the ENDF/B-6 Thermal Neutron Scattering sublibrary evaluated at LANL supersedes **Release 1** which had been evaluated by J.U. Koppel and D.H. Houston at General Atomic, which is documented in IAEA-NDS-97, and which was distributed in May 1990 on tapes 118 and 119 with the following materials:

Mat-Nr. in ENDF/B-3	Mat-Nr. in ENDF/B-6	material
1002	1	H in H_2O
1004	11	D in D_2O
1064	26	Be in Be metal
1099	27	Be and O in BeO
1065	31	C in graphite
1095	40	H and C in C_6H_6 benzene
1114	37	H in CH_2 polyethylene
1097	7	H in ZrH_X
1096	58	Zr in ZrH_X
1167	&	U and O in UO_2

The new LANL evaluation uses the code LENPR based on a physical model similar to that of the GA evaluation. The alfa and beta grids were extended, and the nuclear constants were changed to match the ENDF/B-6 values.

Cross-reference:

See also the JEF-2 Thermal Neutron Scattering file by J. Keinert and M. Mattes, Stuttgart, see IAEA-NDS-121.