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INTERNATIONAL NUCLEAR DATA COMMITTEE

Compilations and Evaluations
of Nuclear Structure and Decay Data

Issue No. 4
(This issue supersedes Issue No. 3)

Compiled by A. Lorenz
Nuclear Data Section
International Atomic Energy Agency
Vienna, Austria

October 1978

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Foreword

This is the fourth issue of a report series on published and to-be-published compilations and evaluations of nuclear structure and decay (NSD) data. This compilation is published and distributed by the IAEA Nuclear Data Section every year.

This compilation of compilations and evaluations is designed to keep the nuclear scientific community informed of the availability of compiled or evaluated NSD data, and contains references to laboratory reports, journal articles and books containing selected compilations and evaluations.

In order to keep the file up-to-date, new entries submitted by the readers are added as they are received, and old entries are deleted when they are superseded by newly published compilations. All new entries are marked by an asterisk.

The material contained in this compilation is sorted according to eight subject categories:

1. General Compilations
2. Basic Isotopic Properties
3. Nuclear Structure Properties
4. Nuclear Decay Processes: Half-lives, Energies and Spectra
5. Nuclear Decay Processes: Gamma-rays
6. Nuclear Decay Processes: Fission products
7. Nuclear Decay Processes: (Others)
8. Atomic Processes.

The next issue of this compilation will be published one year from now, in October 1979. All users of this report are encouraged to contribute to the next issue of this compilation, and to send to me new contributions, or corrections to the published material in this issue, between now and August 1979, so as to reach me not later than 1 September 1979.

GENERAL COMPILATIONS

Title	Author(s)	Pub. Date	Reference and Comments
* Chart of the Nuclides (12th Edition)	F.W. Walker G.J. Kironac F.M. Bourke	1978	Published by the Knolls Atomic Power Laboratory. (Chart is revised to April 1977). To be published every 4 years.
Chart of the Nuclides (Nuklidkarte)	W. Seelmann-Eggebert, G. Pfennig, H. Muenzel	1974	Published by the Kernforschungszentrum Karlsruhe. Cycle time: 4 years.
Chart of the Nuclides (folding type)	Y. Yoshizawa, T. Horiguchi M. Yamada	1977	Contains abundances, measured half-lives, and estimated half-lives where no measurements have been done
Tableau des Isotopes (wall chart)	R. Pametier, P.L. Chevillon	1970	Published by Le Bi-Répertoire Nucléaire, Paris, France.
VADE-MECUM du Technicien Nucléaire	R. Pametier		Published in two volumes by Ed. Maisonneuve P-57 Moulins-les-Metz, France
Table of Isotopes (Sixth Edition)	C.M. Lederer, J.M. Hollander and I. Perlman	1967	7th and last edition to be published in 1978
Isotopy (Isotopes): Reference Tables for Z=1 to Z=105	I.P. Selinov	1970	Published as Book in 3 Volumes by Publishing House NAUKA, Moscow.
Isotopic Composition of the Elements and their Variation in Nature: A Preliminary Report	M.E. Holden	1977	Published as report EML-ECS-50605
Table of Radionuclides	J. Legrand, J.P. Perolat, F. Lagoutine, Y. Le Gallic	1974	100 Radionuclides will be published. 30 are published. 20-30 will be published at the end of 1976. Manpower: 2 men/year. Cycle time: 4 years.
Table of Radioactive Nuclides Arranged in Ascending Order of Half-Life	M.R. Large, R.J. Bullock	1970	Published in NDT <u>A7</u> , 477
Table of Isomeric States of Stable Nuclides	E.A. Ukan, T.W. Steele	1966	Published as Report NIM-41 (National Institute of Metallurgy, Johannesburg, South Africa)
Isomeric States ($T_{sub}(1/2) \geq 10^{-10}$ s) listed According to Increasing Half-life	J. Kantela, O. Tammila	1968	Published in ND <u>44</u> (1/2), 359-395
Radioactive Atoms, Auger-Electrons, α , β , γ and x-ray Data	M.J. Martin P.H. Blichert-Toft	1970	Published in NDT <u>A8</u> , 1.
Table of Calculated Nuclear Properties	P.A. Seeger, W.M. Howard	1974	Published as report LA-5750
Radionuclide Decay Schemes and Nuclear Parameters for Use in Radiation-Dose Estimation	L.T. Dillman, F.C. Von der Lega	1975	Published as NM/MIRD Pamphlet No. 10 by the (US) Society of Nuclear Medicine
Nuclear Decay Data for Selected Radionuclides	M.J. Martin (editor)	March 76	Published as report ORNL-5114. To be published also in an NCRP report "Manual of Radioactivity Measurements Procedures".
Evaluation of Gamma-ray Intensities Nuclear Data for Safeguards Techniques	Y. Yoshizawa, H. Inoue,	Mar. 76	Published by the Faculty of Science of Hiroshima University (Japan) as an internal report. (Text in Japanese). Cycle time: 2 years
Radioactive Nuclide Decay Data for ENDF/B	C.W. Reich, R.G. Helmer M.H. Putmann	Aug. 74	Published as report ANCR-1157
Evaluated Decay Scheme Data	R.G. Helmer, R.C. Greenwood	1975	Published in Nuclear Technology, <u>25</u> , 258-273

GENERAL COMPILATIONS (cont'd)

Title	Author(s)	Pub. Date	Reference and Comments
• Nuclear Physics Constants of Gamma-emitting Isotopes in the Technological Environment of Reactors	B.V. Westerv	1978	Published in Supplement to Volume 22 of Nuclear Constants by the Nuclear Data Centre of the USSR State Committee on the Utilization of Atomic Energy. English translation published as report INDC(CCP)-110/LNP (March 1978)
• Nuclear Decay Data for Radionuclides occurring in Routine Releases from Nuclear Fuel Cycle Facilities	D.C. Kocher	1977	Published in ORNL report ORNL/NUREG/TM-102 (August 1977)
• Radioactive Nuclide Decay Data for Reactor Calculations: Activation Products and Related Isotopes	A.L. Nichols	1977	Published as Harwell report AERE-R 8903
• Quantum Radiation of Radioactive Nuclides	M.G. Guser, P.P. Dmitriev	1977	Published as a book by Atomizdat (Moscow), 400 pages
The Nuclear Properties of the Heavy Elements. Vol. 1: Systematics of Nuclear Structure and Radioactivity Vol. 2: Detailed Radioactivity Properties Vol. 3: Fission Phenomena	E.K. Hyde, I. Perlman G.T. Seaborg	1964	Published in Prentice Hall International Series in Chemistry, by Prentice Hall, Englewood Cliffs, N.Y.
Properties of Fission Isomers	H.C. Britt	1973	Published in ADNDT 12(5), 407-414
Radioactive Decay and Nuclear Level Schemes for Heavy Elements ($Z \geq 90$)	Yu.S. Zamyatnin	1974	Published as Volume 14 of the "Nuclear Constants" report series by the Nuclear Data Centre of the USSR State Committee for the use of Atomic Energy. Original distributed as report INDC(CCP)-55/G (March 1975) by IAEA/NDS
Basic Characteristics of the Isotopes of Heavy Elements	V.M. Gorbachev, Yu.S. Zamyatnin, A.A. Lvov	1975	Published as a book by Moscow Publishing House "Atomizdat"
Decay Data Libraries a) for 628 fission products b) for 1100 other isotopes	J. Blachot, C. Devillers, L. FICHE		The F.P. file has been published in report CEA-N-1882. These libraries are living files and are updated continuously, partly using the ENSDF file.
An Isotope Catalogue for Instrumental Activation Analysis	I.M.H. Fagden, G.J. Pearson, J.M. Bowers	1971	Published in: Part I: J. Radioanal. Chem. 8 (1971), 127-188 Part II: J. Radioanal. Chem. 8 (1971), 373-479 Part III: J. Radioanal. Chem. 9 (1971), 101-189
Radiation Spectra of Radionuclides	T.B. Metcalfe	1976	Report published by Noyes Data Corp., Park Ridge, N.J. (ISBN 0815506201)

BASIC ISOTOPIC PROPERTIES

Title	Author(s)	Pub. Date	Reference and Comments
A Mass Table for $90 < Z < 118$, and $130 < A < 311$ Derived from Nuclear Energy Systematics	V.E. Viola, J.A. Swant, J. Graber	Jan. 74	Published in <i>ADNDT</i> <u>13</u> , 1, 35
The 1977 Atomic Mass Evaluation in Four Parts: Atomic Mass Table, Nuclear Reactions and Separation Energies, and Systematics of Separation and Decay Energies.	A.H. Wapstra, K. Bos	1977	Published in <i>ADNDT</i> <u>19</u> , 175-297
* The 1977 Atomic Mass Evaluation. Part IV. Evaluation of Input Values: Adjustment Procedures.	A.H. Wapstra, K. Bos	1977	Published in <i>ADNDT</i> <u>20</u> , 1-126
Q-Values	K.A. Keller, J. Lange, E. Kuezel	1973	Published in Landolt Boernstein, Group I, Vol. 5, Part B, 499 (Springer-Verlag, Berlin)
* Nuclear Separation and Pairing Energies, Decay Energies, and Atomic Masses for $68 \leq Z \leq 72$.	Z.S. Sharma, et al.	1977	Published in <i>Can. J. Phys.</i> <u>55</u> , 1360 (1977)
Topographical Maps of the Nuclear Binding Energy Surface	V.A. Kravtsov, N.N. Skatchkov	1973	Published in <i>ADNDT</i> <u>12</u> , 143-157
Table of Calculated Nuclear Properties	P.A. Seeger, W.M. Howard	1974	Published as report LA-5750
Tables of the Nucleon Binding Energies and the Energies of α and β Decay of the Heavy Element Isotopes	N.N. Kolesnikov, A.G. Jemin	1975	Published as report P6-9420 of the Joint Institute for Nuclear Research, Dubna
Shell-independent Systematics S_n (Isotopic) and S_p (Isotopic)	N.B. Gove, M. Yamada	1968	Published in <i>NUT</i> <u>AA</u> , 237.
Nuclear Radii	L.R.B. Elton, R. Hofstadter, H.R. Collard	1967	Published in Landolt Bornstein, Vol. 2, Springer-Verlag, Berlin
* Shell Effects in RMS Charge Radii	I. Angeli, M. Csatlos	1978	Published as report ATOMKI Közlemenyek 20 (1978) 1-25
Nuclear Charge and Magnetization-Density-Distribution Parameters from Elastic Electron Scattering	C.W. De Jager et al.	1974	<i>ADNDT</i> <u>14</u> , 479.
Charge-Distribution Parameters, Isotope Shifts, Isomer Shifts, and Magnetic Hyperfine Constants from Muonic Atoms	R. Engfer et al.	1974	<i>ADNDT</i> <u>14</u> , 509.
Changes of Mean-Square Nuclear Charge Radii from Isotope Shifts of Electronic K-X-Rays	P. Boehm, P.L. Lee	1974	<i>ADNDT</i> <u>14</u> , 605.
Changes in Mean-Square Nuclear Charge Radii from Optical Isotope Shifts	K. Heilig, A. Steudel	1974	<i>ADNDT</i> <u>14</u> , 613.
Changes in Mean-Square Nuclear Charge Radii from Moessbauer Isomer Shifts	G.M. Kalvius, G.K. Shenoy	1974	<i>ADNDT</i> <u>14</u> , 639.
The 1973 Least-Squares Adjustment of the Fundamental Constants	E.R. Cohen, B.N. Taylor	1973	Published in <i>J. of Phys. and Chem. Data</i> <u>2</u> , 4, 663
Review of Particle Properties	N. Barash-Schmidt et al.	1974	Published in <i>Phys. Letters</i> , <u>50B</u> , No. 1 Cycle time: 1 year.
Experimental Coulomb Displacement Energies between Analog Energy Levels of Isobaric Nuclei with $A=3$ to $A=238$	W.J. Courtney, J.D. Fox	1975	Published in <i>ADNDT</i> <u>15</u> , 141-187

NUCLEAR STRUCTURE PROPERTIES

Title	Author(s)	Pub. Date	Reference and Comments
• Energy Levels of Light Nuclei (A=5-10, 11-12, 13-15, 16-17, 19-20)	F. Ajzenberg-Selove, et al.	1974 1975 1976 1977 1978	Published in Nucl. Phys. <u>A227</u> Published in Nucl. Phys. <u>A228</u> Published in Nucl. Phys. <u>A268</u> Published in Nucl. Phys. <u>A281</u> Published in Nucl. Phys.
• Energy Levels of A=21-44 Nuclei	P.M. Endt, C. van der Leun	1973 1975	Published in Nucl. Phys. <u>A214</u> Published in Nucl. Phys.
• Nuclear Data Sheets (A=45-∞)	W.B. Ewbank (editor)		Nucl. Data Sheets four year cycle, (updated listing in each issue of NDS)
Radiative Processes in Atomic Nuclei	R.B. Begzhanov, V.M. Belonkij, S.R. Abdurakhmanov, V.K. Usharov	1973	Published as a book by Publishing House "FAN" of the Uzbek SSR in Tashkent for the Academy of Sciences of the Uzbek SSR.
Decay Schemes of Radioactive Nuclei A=70 to A=79	B.S. Dzhelepov (editor)	1974	Published by Leningrad Branch of Publishing House NAUKA for the USSR Academy of Sciences.
• Level Schemes for Some Fission Product Nuclides (Comparison of Level Schemes)	Z. Matumoto, T. Murata, R. Nakasima	1978	Published as report JAERI-M 7734 (also distributed as NEARDC(J)-55/AL and INDC(JAP)-41/G)
Strengths of Gamma-Ray Transitions between Bound States of A=21-44 Nuclei	P.M. Endt and C. Van der Leun	1974	Published in <u>ADNDT 13</u> , 1, 67-88.
Strengths of Electromagnetic Transitions for A < 45	P.M. Endt, C. Van der Leun	1974	Published in Nucl. Phys. <u>A235</u> , 27
Gamma-ray Transition Strengths in A=45-90 Nuclei	F. le Page C. Van der Leun		In preparation.
Gamma-ray Transition Probabilities in Deformed Nuclei (150 < A < 190)	W. Andrejtscheff K.D. Schilling, P. Manfrass	Dec. 75	Published in <u>ADNDT 16</u> , 6
• Tables of Radiative Transition Probabilities from Resonance Levels of Light Nuclei	V.Ya. Kostin, E.T. Kopanetz, A.A. Koval and S.P. Tsitko	1978	Published in report Kh FTI 78-24 of the Kharkov Fiziko-Technical Institute of the Ukrainian Academy of Sciences (in Russian).
Table of Lifetimes of Nuclear Levels	Eh.E. Berlovich, L.A. Vajshmane, I.A. Kondurov, Yu.N. Novikov, and Yu.V. Sergeenkov	Apr. 75	Published originally as report LIJAF-145. English translation published as report INDC(CCP)-89/M by IAEA/WDS (April 1976).
Tables of Nuclear Level Density Parameters	A. Chatterjee, S.K. Ghosh, H. Majumdar	1976	Published as report INDC(IND)-20/U by IAEA/WDS
Table of Nuclear Moments	V.S. Shirley, C.M. Lederer	Dec. 74	Published as report LBL-3450, and as Appendix to Table of Isotopes. Next to be published in 1977.
Nuclear Spins and Moments	Gladys H. Fuller	1976	Published in <u>Journal of Physical and Chemical Reference Data</u> , Vol. 5, No. 4, pp. 835-1092
Spectroscopic Factors for Single-Nucleon Transfer in the A=21-44 Region	P.M. Endt	1977	Published in <u>ADNDT 19</u> , 23-62
• Super allowed $O^+ \rightarrow O^+$ and Isospin - Forbidden $J^{\pi} \rightarrow J^{\pi}$ Fermi Transitions	S. Raman, T.A. Walkiewicz, H. Behrens	1975	Published in <u>ADNDT 16</u> , 451-494 (1975)
Nuclear Moments and Moment Ratios as Determined by Mössbauer Spectroscopy	J.G. Stevens, E.D. Dunlap	1976	Published in <u>Journal of Physical and Chemical Reference Data</u> , Vol. 5, No. 4, pp. 1093-1119
Table of Electromagnetic M1 Reduced Transition-Probability Matrix Elements between Nilsson States in Odd-A Nuclei	E. Browne, F.R. Fensha	1971	Published in <u>Nucl. Data Tables</u> 10, 81
Matrix Element for penetration Factor in M1 Transitions between Nilsson States in odd-A Nuclei	D.K. Krpic, I.A. Anicin, R.B. Vukobratovic	1973	Published in <u>NDT 11</u> , 553-568

NUCLEAR STRUCTURE PROPERTIES (cont'd)

Title	Author(s)	Pub. Date	Reference and Comments
E2 Transition Probabilities between Wilson States in odd-A Nuclei	D.L. Krpic, I.M. Slavic I.V. Anicin	1976	Published in <i>ADNDT</i> <u>18</u> , 509-520
Internal Pair Formation and Multipolarity of Nuclear Transitions	R.J. Lombard, C.P. Perdrisat, J.H. Brannon	1968	Published in <i>Nucl. Phys.</i> <u>110</u> , 41
E0 Transitions in Atomic Nuclei	A.V. Aldushenkov, N.A. Voinova	1973	Published in <i>NDT</i> , <u>11</u> , 299-305
Electroexcitation of Nuclear Magnetic Dipole Transitions	L.W. Fagg	1975	<i>Rev. Mod. Phys.</i> , <u>47</u> , 683-711
The O^+ states and electric monopole transition in even-even atomic nuclei	N.A. Voinova	1976	Published as report LIYaF-230 (in Russian) English translation published by IAEA/NDS as report INDC(CCP)-93/N (July 1976)
Superallowed $O^+ \rightarrow O^+$ and Isospin-Forbidden $J^{\pi} \rightarrow J^{\pi}$ Fermi Transitions	S. Berman, T.A. Walkiewicz H. Behrens	Nov. 75	Published in <i>ADNDT</i> <u>16</u> , 5
A Survey of Nonrotational States of Deformed Odd-A Nuclei ($150 < A < 190$)	M.E. Bunker, C.W. Reich	1971 1972	Published in <i>Rev. Mod. Phys.</i> <u>43</u> , 348 and in <i>Rev. Mod. Phys.</i> <u>44</u> , 126.
• Rotational and Quasi-rotational Bands in Even-Even Nuclei	R. B. Beghanov, V.M. Belen'kiy S. R. Abdourakhmanov, V.Sh. Vinarskiy	1977	Published in Bulletin No.5 of the LIYaF Data Centre, Leningrad. (June 1977)
• Rotational Bands of Odd-Odd Nuclei ($150 \leq A \leq 190$)	V. G. Dubro	1977	Published in Bulletin No.4 of the LIYaF Data Centre, Leningrad. (February 1977)
• Quasi-Ground, Quasi-Beta, and Quasi-Gamma Bands	M. Sakai, A.C. Rester	1977	Published in <i>ADNDT</i> <u>20</u> , 441-474
Nuclear Intrinsic Quadrupole Moments and Deformation Parameters	K.E.G. Lochner, M. Vetter, V. Honig	1970	Published in <i>NDT</i> <u>A7</u> , 495
Quadrupole Moments of Nuclear Excited States Measured by the Reorientation Effect in Coulomb Excitation	A. Christy, O. Hacusser	1972	Published in <i>NDT</i> , <u>11</u> , 281-298
Orientation Parameters for Low-Temperature Nuclear Orientation	K.S. Krane	1973	Published in <i>NDT</i> <u>11</u> , 407-431
E2, M1 Multipole Mixing Ratios in Even-Even Nuclei, $A \geq 152$	K.S. Krane	Oct. 75	Published in <i>ADNDT</i> <u>16</u> , 383
E2, M1 Multipole Mixing Ratios in Odd-Mass Nuclei, $A > 150$	K.S. Krane	1976	Published in <i>ADNDT</i> <u>18</u> , 37
E2, M1 Multipole Ratios in Odd-Mass Nuclei, $59 \leq A \leq 149$	K.S. Krane	1977	Published in <i>ADNDT</i> <u>19</u> , 363-416
• E2, M1 Multipole Mixing Ratios in Even-Even Nuclei, $58 \leq A \leq 150$	K. S. Krane	1977	Published in <i>ADNDT</i> <u>20</u> , 211-240
Tables of Nuclear Level Density Parameters	S.K. Chatterjee, S.K. Ghosh and H. Majumdar	Mar. 76	Published as report INDC(IND)-20/U by the IAEA/NDS
Tables of the Clebsch-Gordan Coefficients	I.V. Nikitina, Yu. I. Kharitonov	Feb. 75	Published as report LIYaF-138
Table of Hyperfine Fields	S. Matthias, D.A. Shirley	1968	Published in <i>Hyperfine Structure and Nuclear Radiations</i> , North-Holland Publ., Amsterdam

NUCLEAR DECAY PROCESSES: HALF-LIVES, ENERGIES, SPECTRA

Title	Author(s)	Pub. Date	Reference and Comments
Specific Activities and Half-lives of Common Radionuclides	G. Goldstein, S.A. Reynolds	1966	Published in <i>ND A1(1-6)</i> , 435-452
Half-lives of the Most Used Radionuclides	P. Lagoutine B. Grinberg	1976	100 radionuclides
Half-lives of Some Actinide	E. Vanzhrouck	1974	Published in Report EUR-5194 e
Half-lives T_{α} and T_{β} of Transuranium Element Isotopes	N.M. Kolesnikov A.G. Demin	1975	Published as report P6-9421 of the Joint Institute for Nuclear Research Dubna
Catalogue of Recommended Alpha Energy and Intensity Values	A. Rytz	1973	Published in <i>ADNDT 12</i> , 479-498
A Listing of Alpha Particle Energies and Intensities Arranged by Nuclides in Ascending Order of Z and A, and in Order of Energy	P.J.C. Rogers	1976	Published as Report AERE-R 5005
Table of α -emitting Nuclides According to α -energy	J.C. Post	1967	Published in <i>Actinides Review 1</i> , 55-69
Table of α -Particle Energies (for 116 radionuclides with half-lives longer than 30 minutes)	R. Czarwinaki, V. Lössnet	1978	Published as report SAAS-228 of the Staatliches Amt für Atomicherheit und Strahlenschutz of the German Democratic Republic.
Characteristics of Alpha Activities for Neutron Deficient Nuclei with $65 \leq Z \leq 91$	H. Gavrin, Y. Le Boyec, J. Livet, J.L. Rayss	1975	<i>Ann. Phys. (Paris) 9</i> , 5, 241-270
Beta-decay Half-lives Calculated on the Gross Theory	K. Takahashi, M. Yamada, T. Kondoh	1973	Published in <i>ADNDT 12</i> , 101-142
Systematical Study of Beta delayed Proton Emission Energies	K. Bos, W.B. Gove, A.H. Wapstra	1974	Published in <i>Z. Phys. 271</i> , 115-127
Log-f Tables for Beta Decay	N.B. Gove, M.J. Martin	1971	Published in <i>NDT, A10</i> , 205
Tables of the Analysis of Beta Spectra	(Anonymous)	1952	Published as Report: Nat. Bur. Stand., Appl. Math. Ser. Vol. 13 by US NBS
Numerical Tables for Beta-decay and Electron Capture	H. Behrens	1969	Published in Landolt-Börnstein. New Series Group 1. Nuclear Physics and Technology, K.H. Hellwege (Editor). Springer Verlag, Berlin.
The Beta-Ray Spectrum and the Average Beta Energy of Several Isotopes of Interest in Medicine and Biology	J. Mantel	1972	Published in <i>Int. J. Appl. Radiat. Isot. 23</i> , 407-413
Shapes of Beta Spectra	H. Behrens, L. Szybisz	1976	Contains all measured shape factors for allowed and forbidden β -transition in parametrized form. Published as ZANB report 6-1 1976.
Systematics of Beta Decays of Odd-A Nuclides with $160 < A < 180$	B.J. Meijer	1976	Published in <i>Z. Physik A278</i> , 365-372
Half-Life Systematics of the Radioactive Nuclides. Part 2. The Diagram	L. Sarkadi, I. Torok	1977	Published in report ATOMKI Kozlem 19, 283 (1977)
Energy Spectra and Yield of Light Nuclei which Originate in Ternary Fission	I.A. Kondurov, A.M. Nikitin D.N. Seliverstov	1977	Published in Bulletin No.6 of the LITAF Data Centre, Leningrad (September 1977).

NUCLEAR DECAY PROCESSES: GAMMA-RAYS

Title	Author(s)	Pub. Date	Reference and Comments
Gamma-Ray Spectra and Sensitivities for 14 MeV-Neutron Activation Analysis	M. Cuypers, I. Cuypers	1968	Published in J. Radio nucl. Chem. <u>1</u> , 243
Analytical Sensitivities and Energies of Thermal Neutron Capture Gamma Rays	D. Duffy, A. El-Kady, F.E. Senftle	1970	Published in Nucl. Instr. and Methods <u>80</u> , 149-171
Analytical Sensitivities and Energies of Thermal Neutron Capture Gamma Rays II	F.E. Senftle, et al.	1971	Published in Nucl. Instr. and Methods <u>93</u> , 425-459
Compilation of KeV Neutron-Capture Gamma-ray Spectra	J.R. Bird, B.J. Allen, I. Bergquist, J.A. Biggerstaff	1973	Published in NDT, <u>11</u> , 433
Gamma-ray Spectrum Catalogue for Ge(Li) and Si(Li) Spectrometry	R.L. Heath	Mar. 74	Third edition published as report ANCR-1000
Catalogue of Ge(Li)- γ Spectra	G. Zaddach	1973 and 1974	Published as Report Juel-914-JE plus Supplement by the Kernforschungsanlage Juelich
* Atlas of Gamma-Ray Spectra from the Inelastic Scattering of Reactor Fast Neutrons	A.M. Demidov et al	1978	Published as a book by Atomizdat (Moscow) (328 p.)
Tables of γ -Rays from (n, γ)-produced Nuclides	H.A. Craig, R.E.J. Porritt, S.J. Bone	1971	Published as report AAECC/TM 585
Spectra of Electromagnetic Transitions and Level Schemes following Thermal Neutron Capture by Nuclides with A=43-193	F.T. Prokofiev et al.	1973	Published as a book by Publishing House "Zinatne", Riga
List of recommended γ -ray Energy Calibration Standards	R.G. Helmer P. van Assche G. van der Leun		Task-group of the IUPAP committee on atomic masses and fundamental constants. (To be published).
Gamma-Ray Calibration Energies	J.B. Marion	1968	Published in NDT <u>A4</u> , 301
Table of Specific Gamma Ray Constants	D. Nachtigall, W. Hanle, M. Pollermann	1969	Published as Pocketbook by Thiemeig Taschenbuecher, Munich
Catalogue of γ -Rays Emitted by Radionuclides	M.A. Wakat	1971	Published in NDT <u>A8</u> , 445
Radioactive Decay Gammas (ordered by energy and nuclide)	W.W. Bowman K.W. Mac Murdo	Feb. 74	Published in ADNDT <u>13</u> , 89-292
Compilation of Gamma-transition Energies of Radionuclides Produced by Reactor Irradiation	H. Dams and P. Adams	1971	Published in J. of Radioanal. Chem. <u>7</u> , 127-160
Two-dimensional ($T_{1/2}$, E_{γ}) Mapping of Short-lived Nuclides	A.Z. Nagy, A. Csoske, E. Szabo	1971	Published in J. of Radioanal. Chem. <u>7</u> , 181-365
Gamma Decay of Analogue Resonances	Yu.V. Naumov, O.E. Kraft	1975	Published in EhChAYa (Elementary Particles and the Atomic Nucleus ?)
Die γ -Linien der Radionukliden (The γ -ray Lines of Radionuclides)	G. Erdtmann W. Soyka	1973	Published by Kernforschungsanlage Juelich in report Jul-1003-AC in three volumes. Data also available on tape. Cycle time: 4 years
Gammenergien. (Gamma-ray Energies)	Chr. Meixner	Jul. 74	Published by Kernforschungsanlage Juelich in report Jul-1087-RX in two volumes. (Effort discontinued).
The Gamma-ray Lines of Radionuclides ordered by Atomic and Mass Number: Part 1: Z=2-57 (Helium-Lanthanum) Part 2: Z=58-100 (Cerium-Fermium)	G. Erdtmann, W. Soyka	1975	Published in J. Radioanal. Chem., Part 1 in Volume <u>26</u> , 375-495 Part 2 in Volume <u>27</u> , 137-286
* Evaluation of Gamma-Ray Intensities	Y. Yoshizawa et al	1978	Published as report JAERI-M 7567 (also distributed as NEANDC(J)-54/AL and INDC(JAP)-40/0)

NUCLEAR DECAY PROCESSES: GAMMA-RAYS (cont'd)

Title	Author(s)	Pub. Date	Reference and Comments
Tables of Specific Activities of the Nuclides with $Z=85$ to $Z=104$	W. Schirmer, M. Maechter	1967	Published in Actinides Rev. <u>1</u> , 125-134
Low-energy Gamma rays from Isotopes Produced by (n, γ) Reactions	M. de Bruijn, P.J.M. Korthoven	1972	Published in J. Radioanal. Chem. <u>10</u> , 125
Semiconductor Gamma Ray Spectra for Neutron Activation Analysis	H. Vogt	1971	Published as Vol. 6 of the Atomkernenergie Book Series, by Thieme, Munich
Gamma-ray Quanta of Isotopes Used in Neutron Activation Analysis	B.S. Debelgov, S.F. Koksharova	1974	Published as a soft-cover booklet by Atomizdat (Moscow).
Neutron Activation Analysis Tables - Analyse par Activation	J.C. Leclerc, A. Corra (and A. Ginier-Gillet)	1974	Published as book by Heyden (London, New York, Rheine)
Neutron Activation Tables	G. Erdtmann	1976	Published as book by Verlag Chemie, D-6940 Weinheim
Tables for Reaction Gamma-Ray Spectroscopy. Part I. $A=6$ to $A=20$	R.J. De Meijer, H.S. Plendl and H. Holub	1974	Published in ADNDT <u>13</u> , 1-33
Tables for Reaction Gamma-Ray Spectroscopy. Part II. $A=21-32$	R.J. De Meijer, A.G. Drentje and H.S. Plendl	1975	Published in ADNDT <u>15</u> , 391-442
Tables for Reaction Gamma-ray Spectroscopy. Part III. $A=33$ to $A=44$	R.J. De Meijer, A.G. Drentje	1976	Published in ADNDT <u>17</u> , 211
Tables of Coefficients for Angular Distribution Analysis	W.T. Sharp, et al.	1954	Published as Reports AECL-97 and CRT-556 by the Atomic Energy of Canada Ltd. at Chalk River, Ontario
Tables of Directional Correction Attenuation Coefficients for Combined Magnetic Dipole and Randomly Oriented Electric Quadrupole Interactions: Part 1: Spin of Intermediate Nuclear State $I=1$ and $I=2$ Part 2: Spin of Intermediate Nuclear State $I=3/2$ and $5/2$	R.M. Steffen, E. Matthias, W. Schneider	1962	Published in Report by USAEC
Angular Distributions of Gamma Rays in Terms of Phase-Defined Reduced Matrix Elements	H.J. Rose, D.N. Brink	1967	Published in Rev. Mod. Phys. <u>39</u> , 306
Tables of Coefficients for Angular Distributions of Gamma Rays from Aligned Nuclei	T. Yamazaki	1967	Published in Nucl. Data <u>3</u> , 1
Tables of Coefficients for Angular Correlations of Radiative Transitions from Aligned Nuclei	D.D. Watson, G.I. Harris	1967	Published in Nucl. Data <u>3A</u> , 25
Numerical Tables for Angular Correlation Computations in α -, β - and γ -Spectroscopy: $3j$ -, $6j$ -, $9j$ -Symbols, F- and Gamma-Coefficients	H. Appel	1969	Published in Landolt-Börnstein, New Series Group 1, Nuclear Physics and Technology, K.H. Hellwege (Editor). Springer Verlag, Berlin.
Tables of the $3j$ -, $6j$ -, $F_{sub}(k)$ -, $A_{sub}(k)$ - and $A_{sub}(kk)$ -Coefficients for Angular Correlation Measurements Involving Half Integer Spins up to $15/2$ and Transitions up to $L=3$	H.H. Gueven, B. Kardon, H. Seyfarth	1975	Published as Report JUEL-1217 by the Kernforschungsanlage Juelich, Institut of Nuclear Physics
Table of Angular Distribution Coefficients for (Gamma-Particle) and (Particle-Gamma) Reactions	R.W. Carr, J.E.E. Baglin	1972	Published in Nucl. Data Tables <u>10</u> , 143

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Title	Author(s)	Pub. Date	Reference and Comments
Angular Correlation Methods in Gamma-Ray Spectroscopy	A.J. Ferguson	1965	Published by North-Holland Publ., Amsterdam
A Tabulation of Gamma-Gamma Directional Correlation Coefficients	H.W. Taylor, B. Singh, P.S. Prato, R. McPherson	1971	Published in Nucl. Data Tables <u>9</u> , 1
A Tabulation of Gamma-Gamma Directional Correlation Coefficients for States of High Angular Momenta	P.E. Haustein, H.W. Taylor, R. McPherson, R. Fairchild	1972	Published in Nucl. Data Tables <u>10</u> , 1-11
Directional Correlations of Gamma Radiations Emitted from Nuclear States Oriented by Nuclear Reactions or Cryogenic Methods	K.S. Krane, R.M. Steffen, R.M. Wheeler	1973	Published in <i>NDC</i> , <u>11</u> , 351-406
Extended Table of Angular Distribution Coefficients for (gamma-particle) and (particle-gamma) Reactions	R.E. Mante, L.P. D'Amato, S.L. Blatt	1974	Published in <i>ADNDT</i> <u>13</u> , 499-624
Tables of X-Coefficients and Λ - Factors for Triple Angular Correlation Analysis	J.J. Singh, C. Cross	1964	Published as Report NASA-TN-D-2454 by NASA, Langley Station, Va.
Tables of Coefficients for the Analysis of Triple Angular Correlations from Aligned Nuclei	G. Kaye, E.J.O. Read, J.C. Willmott	1968	Published by the Chadwick Phys. Lab., Univ. of Liverpool, England
β - γ (CP)-asymmetry coefficients in isospin forbidden allowed mixed β -transitions	H. Behrens	1970	Proceedings of "International Conference on Angular Correlation in Nuclear Disintegration", Delft, Netherlands (August 1970)

NUCLEAR DECAY PROCESSES: FISSION PRODUCTS

Title	Author(s)	Pub. Date	Reference and Comments
Fission Product Chain Yields from Experiments in Thermal Reactors	E.A.C. Crouch	1973	Published in report AERE-R-7209. Next round of evaluations to be completed by June 1976. Cycle time: 2 years.
Fission Product Chain Yields from Experiments in Reactors and Accelerators Producing Fast Neutrons of Energies up to 14 MeV	E.A.C. Crouch	1973	Published in report AERE-R-7394. Next round of evaluations to be completed by June 1976. Cycle time: 2 years.
Fission Yields to Obey Conservation Laws	E.A.C. Crouch	1976	Chain and independent fission product yields adjusted to conform with physical conservation laws. Part 1 published in report AERE-R-7785, Feb. 1975. Part 2 published in report AERE-R-8152.
* Fission-Product Yields from Neutron-Induced Fission	E.A.C. Crouch	1977	Published in ADNDT <u>19</u> , 417-532
* Compilation of Fission Product Yields	B.P. Rider	1978	Available from the General Electric Company, P.O. Box 460, Pleasanton Calif. 94566 as report NEDO-12154-2E
Radiation Characteristics of Fission Products	N.G. Gusev, P.M. Rubtsov, V.V. Kovalenko, V.M.W. Kolobashkin	1974	Published by Atomizdat, Moscow (224 pages).
Evaluation of Important Fission Product Nuclides	S. Iijima et al.		(To be published in 1978).
ENDF/B-IV Fission Product Files: Summary of Major Nuclide Data	T.R. England R.E. Shenter	Oct. 75	Published as report La-6116-MS
ENDF/B Fission Product Decay Data	P.F. Rose, T.W. Burrows	1976	Published as report EML-WCS-50545, ENDF-243 (in press)
* An Ordered Table of Gamma Radiation Derived from an ENDF/B-IV Fission Product File	A. Tobias	1977	Published as UK report RD/B/N4053 (May 1977)
* Gamma-Ray and Half-Life Data for the Fission Products	J. Blachot, C. Fiche	1977	Published in ADNDT <u>20</u> , 241-310
Fission Product Yield and Decay Data Library	C. Devillers, et al.		Continuously updated file on magnetic tape in ENDF/B format. (See also under Section on General Compilations).
Estimation of Decay Data for Short-lived Fission Products	T. Yoshida	1975	Theoretical data compared to preliminary experimental results. Published in report NEACRP-A-241 (also JAERI-N-6313).
* Estimation of Nuclear Decay Heat for Short-lived Fission Products	T. Yoshida	1977	Published in Nucl. Sci. Eng. <u>63</u> , 376.

NUCLEAR DECAY PROCESSES

Title	Author(s)	Pub. Date	Reference and Comments
Tables of Internal Conversion Coefficients	L.A. Sliv, I.M. Band	1965	Published in book "Alpha-, Beta- and Gamma-Spectroscopy", Volume 2, edited by K. Siegbahn, North Holland Publ. Co. (1965). Reprinted from book "Gamma-Rays" (Acad. Sci. USSR, Moscow-Leningrad, 1961)
Tables of the Conversion Matrix Elements and Phases	I.M. Band, M.A. Listengarten L.A. Sliv	1965	Published in book "Alpha-, Beta- and Gamma-Spectroscopy", Volume 2, edited by K. Siegbahn, North Holland Publ. Co. (1965)
Particle Parameters for Angular Correlations of Conversion Electrons	I.M. Band, M.A. Listengarten I.A. Sliv, J.E. Thun	1965	Published in book "Alpha-, Beta- and Gamma-Spectroscopy", Volume 2, edited by K. Siegbahn, North Holland Publ. Co. (1965)
Tables of Integral Conversion Coefficients and Particle Parameters	H.C. Pauli	1967	Published as Report COO-1420-137, USAEC Chicago Operations Office, Ill.
Internal Conversion Tables:			
Part I: K-, L-, M-Shell Conversion Coefficients for Z=30 to Z=103	R.S. Hager, E.C. Seltzer	1968	Published in NDT <u>A4</u> , 1-235
Part II: Directional and Polarization Particle Parameters for Z=30 to Z=103	R.S. Hager, E.C. Seltzer	1968	Published in NDT <u>A4</u> , 397-641
Part III: Coefficients for Analysis of Penetration Effects in Internal Conversion and S_0 Internal Conversion	R.S. Hager, E.C. Seltzer	1969	Published in NDT <u>A6</u> , 1
Internal Conversion Coefficients for Atomic Numbers $Z \leq 30$	I.M. Band et al.	Apr. 76	Published as report LIYaF-235 (in Russian), English translation published by IAEA/NDG as report INDC(CCP)-92/N (July 76) and in <u>ADNDT 18</u> , 433-458
A Survey on Internal Conversion	H. Hansen, B. Martin, et al.		This work is just starting, and will be published as a ZAED report.
Contribution of Outer Atomic Shells to Internal Conversion Coefficients	O. Dragoun, Z. Plajner and F. Schmutzler	1971	Published in NDT <u>A9</u> , 119
Tables of Internal Conversion Coefficients for N-Subshell Electrons	O. Dragoun, H.C. Pauli F. Schmutzler	1969	Published in NDT <u>A6</u> , 235
Tables of Approximate Internal Conversion Coefficients for N_6 - N_7 , O_1 - O_7 , F_1 - F_5 and Q_1 Atomic Subshells	O. Dragoun, Z. Plajner and F. Schmutzler	1969	Published as report MPIH-1969-V5, of the Max-Planck-Institut fuer Kernphysik, Heidelberg
Internal Conversion Coefficients for High-energy Transitions	V.P. Trusov	1972	Published in NDT <u>10</u> , 477-510
Contributions of ($M+M+...$) Shells to Total Internal Conversion Coefficients for Transition Energies above 500 KeV	O. Dragoun, V. Brabec	1975	Published in <u>ADNDT 15</u> , 49-56
Orbital electron capture by the nucleus	W. Baabnyek, H. Behrens et al.	1977	Published in Rev. Mod. Phys. <u>49</u> , 77-221

ATOMIC PROCESSES

Title	Author(s)	Pub. Date	Reference and Comments
X-Ray Wavelengths	J.A. Bearden	1967	Published in Rev. Mod. Phys. <u>39</u> , 78
X-Ray Atomic Energy Levels	J.A. Bearden, A.P. Burr	1967	Published in Rev. Mod. Phys. <u>39</u> , 125
K X-Ray Transition Probabilities	G.C. Nelson, B.G. Saunders, S.I. Salem	1970	Published in At. Data <u>1</u> , 377
L X-Ray Transition Probabilities	S.I. Salem, C.W. Schultz	1971	Published in At. Data <u>2</u> , 215
Experimental Widths of K and L X-Ray Lines	S.I. Salem and P.L. Lee	1976	Published in ADNDT <u>18</u> , 233-242
*Calculation of K and L X-Rays for Elements of $Z = 95$ to 130	T.A. Carlson, C.W. Nestor, Jr	1977	Published in ADNDT <u>19</u> , 153-173
*Theoretical L-Shell Coster-Kronig Energies $11 \leq Z \leq 103$	M.H. Chen, B. Crasemann K.-H. Huang, N. Aoyagi, H. Mark	1977	Published in ADNDT <u>19</u> , 97-151
X-ray Fluorescence Yields, Auger and Coster-Kronig Transition Probabilities	W. Bambynek et al.	1972	Published in Rev. Mod. Physics <u>44</u> , 716 (1972) Will be updated, especially for the L-shell fluorescence, this work is just starting, and will be published as ZAED report.
Auger Catalog: Calculated Transition Energies listed by Energy and Element	W.A. Coghlan, R.E. Clausing	1973	Published in AD <u>5</u> , 317-469
Directory to Auger Electron Data-1973		1973	Published in AD <u>5</u> , 471
Non-relativistic K-shell Auger Rates and Matrix Elements for $4 \leq Z \leq 54$	D.L. Walters, C.F. Bhalia	1971	Published in AD <u>3</u> , 301
Calculated K Auger-Electron and K X-Ray Transition Energies for the Multiply Ionized Neon Atom	D.L. Mathews, B.M. Johnson and C.F. Moore	1975	Published in ADNDT <u>15</u> , 41
*Semi empirical Auger-Electron Energies for Elements $10 \leq Z \leq 100$	F.P. Larkins	1977	Published in ADNDT <u>20</u> , 131-387

