UKAEA FUS 537

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March 2007

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UKAEA Fusion Working in Europe

EASY Documentation Series **UKAEA FUS 537**

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Abstract

The European Activation System (EASY) includes, as the source of nuclear data, the European Activation File (EAF). A new version of EAF, EAF-2007, has been developed, and this report gives details of the EAF decay data library. The sources of data and the methods of assembly are described, but the bulk of the report is devoted to a listing of summary properties of all the 2,231 nuclides contained in the library.

The summary properties listed are: nuclide spin, decay modes, half-life (with percentage error), mean decay energies and data source.

Contents

Introduction

The European Activation File (EAF) is a set of libraries of nuclear data that is designed to be used as input to inventory codes (specifically FISPACT) to enable the activation of fusion devices to be calculated. The EAF effort was initially based at ECN Petten and grew from work over 1986 to 1989 on the REAC-ECN libraries 1 - 5 based on the American REAC library. It is important to note that at that time EAF referred only to the neutron-induced cross section library; further details and the history of this element of EAF is covered in the EAF Cross section library report [1]. Initial work in the UK on cross section libraries followed a parallel course with UKACT1 [2], which was also developed from the REAC library, UKACT1 was tailored as an input to FISPACT. To accompany this, the decay data library UKDECAY1 [2] was developed based on JEF-1 evaluations, in the ENDF/B-5 format. The UKDECAY libraries continued to be developed to remain compatible with the EAF cross section libraries, but the description and documentation of these libraries remained sparse, as most effort was given to the documentation and development of the cross section libraries and the FISPACT inventory code.

With the release of EAF-4.1 in mid 1995, and the decision to move all activation library development to the EURATOM/UKAEA Fusion Association, the scope of the term EAF was enlarged to cover all the data libraries required as input to FISPACT. Thus the decay data library was termed EAF_DEC-4.1, and this is briefly described in the FISPACT 4 User Manual [3]. A full description of the decay data library was given as part of EASY-99 [4], EASY-2001 [5], EASY-2003 [6] and EASY-2005 [7], and the purpose of the current report is to update these reports for EASY-2007. This report is now seen as part of the complete documentation of the European Activation System (EASY) for the version released at the beginning of 2007 - EASY-2007 [8].

The report consists of a description of the composition of the library, which relies heavily on existing European evaluations, but also includes original, fusion-funded work to deal with deficiencies in the existing data. The method of compiling the decay library has been further improved by embedding it in the SAFEPAQ-II system [9] that enables more thorough auditing and quality assurance to be applied to library maintenance. Finally a list of each nuclide in EAF_DEC-2007, and a summary of their properties forms the major part of the report and acts as a convenient guide to the contents of the library. Similar information, but in a different format is available to

FISPACT users in the **PRINTLIB** output, and the recommendation, given in the FISPACT-2007 User manual [10], to use this output for reference still holds.

Data sources

The requirement of FISPACT for decay data is that every stable nuclide and every radionuclide that can be formed either directly by a reaction or as a decay daughter of an existing radionuclide needs to be identified (be included in the FISPACT index file) and to have information on half-life, decay modes, decay energies and, if possible, the γ spectrum. For EAF-2007 a total of 2,231 nuclides are included, and for the majority the most comprehensive source of data is the set of evaluated files in JEFF-3.1[11]. The library of radioactive nuclides part of this library was compiled by the NEA Data Bank based on the UK and French national libraries, supplemented by entries from the Evaluated Nuclear Structure Data File (ENSDF) and NUBASE. The library is in ENDF/B-6 format (MF = 8, MT = 457) but its main deficiency is the lack of gamma emission data for nuclides with data from NUBASE. For this reason the JEF-2.2 data source [12], extensively used for EAF-2005, is still used for some nuclides in EAF-2007. FISPACT is able to read directly the ENDF/B-6 (and ENDF/B-5) formats, and although it does 'process' this in the sense of binning the γ spectrum data and storing the other data in internal arrays, there is no need for a separate file format that the ENDF/B format data needs to be converted into.

Changes to the ENDF format mean that stable data can now be included in the file, and indeed the recent release of the JEFF-3.1 decay file [13] includes these data as well as covering the nuclides required for a wide range of applications, including fusion There are still gaps in the JEF-2.2 and JEFF-3.1 libraries. To fill these, standard printed data sources such as Browne and Firestone [14] and the Nuclear Wallet cards [15] are used and converted into ENDF/B format. Even using these standard sources there are still nuclides for which some of the required information is missing. In the last resort estimates of the missing quantities were made using the relationships shown below.

β^- decay: if $\langle\gamma\rangle$ not known, $\langle\gamma\rangle = Q_{\beta^-} / 3$ and $\langle\beta\rangle = Q_{\beta^-} / 3$
if $\langle\gamma\rangle$ known, $\langle\beta\rangle = (Q_{\beta^-} - \langle\gamma\rangle) / 2$

ε and β^+ decays: from neighbouring nuclides take typical value of f_β = fraction of decay that is β^+, and define $e = (Q_\varepsilon - 2m_ec^2) / 2$. Then $\langle\gamma\rangle = (1- f_\beta)e$ and $\langle\beta\rangle = f_\beta\, e$. If $e < 0$ then assume $\langle\beta\rangle = 0$ and choose $\langle\gamma\rangle$ from available data.

α decay: $\langle\alpha\rangle$ = energy of alpha x branching fraction for α decay.

In these relationships the mean value of a quantity is shown by < >, α, β, γ represent the alpha, beta and gamma energies and the *Q*-value for a decay is shown by *Q*.

During the use of previous decay data libraries it was noted that for some nuclides the average γ energy did not agree with the mean energy calculated from the γ spectrum data. In view of these deficiencies and the fact that some existing JEFF evaluations do not contain any γ spectrum data, A. Nichols (previously with AEA Technology) has carried out new evaluations over the last ten years. The nuclides that have been studied and that are included in EAF_DEC-2007 are given in Table 1. A description of the evaluation work is given in reference 16, the ENDF format files are stored in the library UKPADD-n (n = 2, 3, 4, 5, 6, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6) maintained by Serco (previously AEA Technology) [17,18,19]. These new files have been included in the UKPADD-6.6 library that is used within the UK and formed part of the input to the JEFF-3.1 library. UKPADD-6.6 contains all the evaluations made by Nichols for fusion, including ones from UKPADD-6.5 and other recent ones made for BNFL [20]. Differences between EAF_DEC-2007 and EAF_DEC-2005 are indicated in column 3.

Table 1. Nuclides in UKPADD-6.6 for fusion applications

Nuclide	Half-life	Comment
N-17	4.17 s	
F-21	4.158 s	New for EAF-2007
Cl-39	55.600 m	New for EAF-2007
Mn-58	1.09 min	
Mn-58m	2.70 s	
Fe-63	6.10 s	
Ni-67	21.00 s	
Zn-69	56.400 m	New for EAF-2007
Zn-69m	13.780 h	New for EAF-2007
Ga-77	13.00 s	
Ge-80	27.000 s	New in EAF-2007
As-82m	13.60 s	
Se-79m	3.90 min	
Br-72	1.31 min	
Br-72m	10.60 s	
Rb-89	15.40 min	
Sr-92	2.71 h	
Sr-94	1.25 min	
Y-96m	9.62 s	
Y-97	3.750 s	New in EAF-2007
Y-97m	1.170 s	New in EAF-2007
Y-97n	0.142 s	New in EAF-2007
Zr-99	2.20 s	
Nb-96	23.350 h	New in EAF-2007
Nb-100m	2.90 s	

Nuclide	Half-life	Comment
Mo-103	1.13 min	
Tc-97	2.60×10^{6} y	
Tc-97m	90.20 d	
Rh-110	28.50 s	
Rh-110m	3.20 s	
Rh-111	12.000 s	New in EAF-2007
Pd-112	20.30 h	
Pd-113	1.517 m	New in EAF-2007
Pd-113m	0.300 s	New in EAF-2007
Ag-114m	1.50×10^{-3} s	
Ag-115m	18.60 s	
Cd-107	6.52 h	
In-112	14.70 min	
In-112m	20.70 min	
Sn-110	4.10 h	
Sn-129	2.230 m	New in EAF-2007
Sn-129m	7.200 m	New in EAF-2007
Sn-130	3.730 m	New in EAF-2007
Sn-130m	1.700 m	New in EAF-2007
Te-121	19.16 d	
Te-121m	154.00 d	
Cs-123	5.910 m	New in EAF-2007
Cs-123m	1.700 s	New in EAF-2007
Ba-126	1.67 h	
Ba-129	2.38 h	
Ba-129m	2.14 h	
La-137	6.00×10^{4} y	
Ce-145	2.95 min	
Ce-147	57.00 s	
Ce-149	5.300 s	New in EAF-2007
Pr-143	13.56 d	
Pr-144	17.28 min	
Pr-144m	6.90 min	
Pr-150	6.10 s	
Pm-152n	14.40 min	
Pm-155	41.500 s	New in EAF-2007
Gd-163	1.133 m	New in EAF-2007
Tb-146	8.000 s	New in EAF-2007
Tb-146m	24.000 s	New in EAF-2007
Tb-156	5.17 d	
Tb-156m	24.40 h	
Tb-156n	5.10 h	
Tb-158	180.000 y	New in EAF-2007
Tb-158m	10.800 s	New in EAF-2007
Tb-160	72.300 d	New in EAF-2007
Ho-160	25.30 min	
Ho-160m	5.00 h	
Ho-160n	2.90 s	
Ho-161	2.48 h	
Ho-161m	6.77 s	
Ho-163	4.57×10^{3} y	
Ho-163m	1.10 s	
Ho-164	28.60 min	

Nuclide	Half-life	Comment
Ho-164m	37.60 min	
Ho-170	2.78 min	
Ho-170m	43.00 s	
Er-167m	2.269 s	New in EAF-2007
Er-172	2.05 d	
Tm-171	1.917 y	New in EAF-2007
Tm-172	2.650 d	New in EAF-2007
Hf-178m	4.00 s	
Hf-178n	31.00 y	
Hf-179m	18.670 s	New in EAF-2007
Hf-179n	25.100 d	New in EAF-2007
Hf-180m	5.50 h	
W-176	2.50 h	
W-188	69.780 d	New in EAF-2007
Re-184	37.900 d	New in EAF-2007
Re-184m	168.000 d	New in EAF-2007
Re-191	9.70 min	
Re-192	6.20 s	
Os-180	21.50 min	
Os-185	93.80 d	
Os-190m	9.90 min	
Os-191	15.300 d	New in EAF-2007
Os-191m	13.10 h	
Os-195	6.50 min	
Os-196	34.90 min	
Ir-187	10.50 h	
Ir-190	12.00 d	
Ir-190m	1.12 h	
Ir-190n	3.09 h	
Ir-191m	4.90 s	
Ir-191n	5.50 s	
Ir-192	73.82 d	
Ir-192m	1.44 min	
Ir-192n	241.00 y	
Ir-197	5.80 min	
Ir-197m	8.90 min	
Pt-193	50.00 y	
Pt-193m	4.34 d	
Pt-197	19.89 h	
Pt-197m	1.59 h	
Pt-202	1.83 d	
Au-192m	0.16 s	
Au-197m	7.74 s	
Au-199	3.14 d	
Hg-190	20.00 min	
Hg-199m	42.10 m	
Hg-205	5.20 min	
Tl-193	21.80 min	
Tl-193m	2.11 min	
Pb-201	9.40 h	
Pb-201m	1.02 m	
Bi-208	3.68×10^5 y	
Po-208	2.93 y	

Another source of evaluated files is the soon to be released decay library of ENDF/B-VII [21], some data from the beta 2 version have been used. The US decay data library assembled by F. Mann to accompany the REAC activation library [22], is rather old, but has been considered as a source. In most instances these files are not significantly better than files generated from the standard sources for nuclides missing from JEFF-3.1, but some of these files have been used during the compilation of EAF_DEC-2007.

An additional feature in FISPACT-97, i.e. inclusion of half-life uncertainties in uncertainty estimation of radiological quantities, placed a new requirement on the decay data library. If possible the file for each nuclide should contain a value for the half-life uncertainty. Many of the existing evaluations contain no value for this quantity, and for most important nuclides (those not having either a very short or a very long half-life) this has been entered by hand using either the standard sources or using an estimated value (typically 50% uncertainty).

Another use of the decay data library is to generate a list of the spins and state energies of all isomeric states. This information is required by the SAFEPAQ-II processing code when the splitting of total cross sections between ground and isomeric states is calculated by systematics. The systematic formula requires the spins of both the ground and isomeric states, and to try and ensure consistency between the various EAF libraries these values are taken directly from the decay data library. In many instances the spin data are missing from the evaluations and standard sources were used to fill in the gaps. There still remain 13 isomers with unknown spin, but as this value was not required in the subsequent processing, it has not been estimated.

The details of the compilation of the library are discussed in the next section, but it can be noted here that in all cases where corrections to the above sources were made, these were done on a copy of the file, not on the original file itself. The sources of data are shown in Table 2, which gives an identification number for each source that is used in the main nuclide listing.

Table 2. Data sources for EAF_DEC-2007

Data source	Source number	Comments
stables	1	Identification information for stable nuclides
ukpadd6.5	2	Collection of recent evaluations by A. Nichols
ukpadd6.6	3	Collection of recent evaluations by A. Nichols
jef22_dec	4	JEF-2.2 library

Data source	Source number	Comments
jef22_dec_cul	5	Additions and amendments to JEF-2.2 files
jeff-3.1	6	JEFF-3.1 library
usdecay_aug93	7	US decay library dated August 1993
endf-b72	8	ENDF/B-VII beta 2 library
culham_96	9	New files from standard sources created in 1996
culham_97	10	Additions and amendments to existing files, or new files from standard sources created for EAF-97
culham_01	11	Additions and amendments to existing files, (primarily to AWR) created for EAF-2001
culham_03	12	Additions and amendments to existing files, (primarily to AWR) created for EAF-2003
culham_06	13	Additions and amendments to existing files, (primarily to AWR) created for EAF-2007

Library processing

EAF-2007 library processing uses the SAFEPAQ-II code [9]. This has been developed from the SYMPAL [23] and SAFEPAQ [24] applications. In addition to the tasks related to cross section processing, the decay data library management is also handled by SAFEPAQ-II. Details of the use of SAFEPAQ-II for the decay data library processing are described in the User manual. Here only an outline of the processing is given.

The files of decay data are stored in separate folders on a hard disk. A list of all required nuclides with the source of data is constructed; this list is part of the Parameter database and using the interactive tools in SAFEPAQ-II nuclides can be added or deleted and data sources changed - there is no direct editing of the database to introduce errors. Each change is logged so that a record of when changes were made is automatically stored. When a new version of the decay data library is built, SAFEPAQ-II using the list of nuclides, copies the file for each nuclide from the specified source and produces the new library. In addition a database of decay properties is constructed that can be used in the subsequent cross section processing. The database can also be viewed in SAFEPAQ-II and is also used in the EASY User Interface [10] so that users can view decay data. A new index of nuclides in the correct format for FISPACT and other data libraries are also generated during this processing phase. The list of nuclide information given in the next section was generated by SAFEPAQ-II from the Parameter database. By using tables in Parameter as the basic source of all decay data it is possible to ensure consistency between the various EAF libraries and FISPACT.

The library EAF_DEC-2007 is split into 10 sub-files for ease of handling, FISPACT expects them to be numbered

library_name.001 - *library_name*.010. Only the final sub-file is terminated by the TEND line. The first sub-file contains an additional two header lines: the first contains an integer value of the number of header lines and the second a description of the library. FISPACT expects this header and it must be present on any decay library used as input. The nuclides at which the splitting into the 10 sub-files occurs is determined by SAFEPAQ-II by reading data from a Table in Parameter. This lists the nuclides that end each sub-file. These nuclides are shown in Table 3.

Table 3. Last nuclides in sub-files of EAF_DEC-2007.

Sub-file	Last nuclide in sub-file
1	Br- 88
2	Ru-111
3	Sn-131m
4	Cs-141
5	Eu-163
6	Tm-179
7	Re-198
8	Tl-210
9	Ac-234

Library contents

The content of EAF_DEC-2007 is listed below. The nuclides that have been added (+) or changed (>) since EAF-2005 are indicated. Column 1 shows the ID of the nuclide as used in FISPACT, column 2 is the nuclide name, column 3 is the nuclide spin, column 4 shows the decay modes, column 5 is the nuclide half-life, column 6 the uncertainty in the half-life, column 7 is the heavy particle energy (mean α), column 8 is the light particle energy (mean β), column 9 is the photon energy (mean γ) and column 10 is the data source number. To aid readability zero values in columns 4 - 9 are replaced by blanks. The key to symbols is given at the end of the listing.

	ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>	1	H-1	0.5							6
>	2	H-2	1.0							6
>	3	H-3	0.5	β^-	12.330 y	0.16		5.7074E+03		6
>	4	He-3	0.5							6
>	5	He-4	0.0							6
>	6	He-6	0.0	β^-	0.808 s	0.25		1.5613E+06	5.6441E+03	6
>	7	Li-5	1.5	p	3.70E-22 s	8.11	1.9661E+06			6
>	8	Li-6	1.0							6
>	9	Li-7	1.5							6
>	10	Li-8	2.0	β^-,α	0.838 s	0.72	3.1253E+06	6.2046E+06	3.2983E+04	6
>	11	Li-9	1.5	β^-:50.5;β^-,n:49.5	0.178 s	0.22		5.6963E+06	2.9896E+04	6
>	12	Be-6	0.0	p,p	5.00E-21 s	6.00	1.3721E+06			6
>	13	Be-7	1.5	β^+	53.220 d	0.11		2.7240E+01	4.9862E+04	6
>	14	Be-8	0.0	α	7.00E-17 s	28.57	9.1898E+04			6
>	15	Be-9	1.5							6
>	16	Be-10	0.0	β^-	1.60E+06 y	12.50		2.5221E+05		6
>	17	Be-11	0.5	β^-:97.0;β^-,α:3.0	13.810 s	0.58	3.6273E+04	4.6473E+06	1.4188E+06	6
>	18	Be-12	0.0	β^-	0.021 s	0.47	1.2236E+04	5.6150E+06		6

	ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>	19	Be-13	0.5	n	5.00E-10 s	20.00	1.0170E+05			6
>	20	B-8	2.0	β^+,α	0.770 s	0.39	4.5179E+06	4.5179E+06	4.5179E+06	6
>	21	B-9	1.5	p	8.00E-19 s	37.50	1.8503E+05			6
>	22	B-10	3.0							6
>	23	B-11	1.5							6
>	24	B-12	1.0	β^-:98.42;β^-,α:1.58	0.020 s	0.10	6.6417E+03	6.3084E+06	9.0565E+04	6
>	25	B-13	1.5	β^-:99.72;β^-,n:0.28	0.017 s	0.98	9.7573E+03	6.2783E+06	3.1353E+05	6
>	26	B-14	2.0	β^-	0.013 s	4.00	2.3180E+04	7.0847E+06	5.9363E+06	6
>	27	B-15	1.5	β^-:6.0;β^-,n:93.6;β^-,2n:0.4	0.010 s	0.71	4.1938E+06	4.5758E+06	4.5758E+06	6
>	28	C-9	1.5	β^+:60.0;β^+,p:23.0;β^+,α:17.0	0.127 s	0.71	1.5883E+06	4.8873E+06	4.8873E+06	6
>	29	C-10	0.0	β^+	19.255 s	0.28		8.0864E+05	1.7443E+06	6
>	30	C-11	1.5	β^+	20.370 m	0.14		3.8464E+05	1.0194E+06	6
>	31	C-12	0.0							6
>	32	C-13	0.5							6
>	33	C-14	0.0	β^-	5699.985 y	0.53		4.9475E+04		6
>	34	C-15	0.5	β^-	2.449 s	0.20		2.8562E+06	3.6218E+06	6
>	35	C-16	0.0	β^-:2.1;β^-,n:97.9	0.747 s	1.07	1.3513E+06	1.4074E+06	1.4074E+06	6
>	36	C-17	1.5	β^-:71.6;β^-,n:28.4	0.193 s	2.59	5.1716E+05	3.6599E+06	3.6599E+06	6
>	37	N-11	0.5	p	5.90E-22 s	35.59	1.3123E+06			6
>	38	N-12	1.0	β^+	0.011 s	0.15	2.4663E+04	7.7285E+06	1.1906E+06	6
>	39	N-13	0.5	β^+	9.967 m	0.04		4.9081E+05	1.0201E+06	6
>	40	N-14	1.0							6
>	41	N-15	0.5							6
>	42	N-16	2.0	β^-:100.0;β^-,α:~	7.130 s	0.28	2.9699E+01	2.6795E+06	4.6215E+06	6
>	43	N-17	0.5	β^-:5.0;β^-,n:95.0;β^-,α:~	4.170 s	0.10	9.0113E+05	1.6978E+06	4.4508E+04	6
	44	N-18	1.0	β^-	0.630 s	4.76		4.5630E+06	4.5700E+06	10
>	45	N-19	0.5	β^-:45.4;β^-,n:54.6	0.271 s	2.95	1.1701E+06	3.0659E+06	3.0659E+06	6
>	46	N-20	?	β^-:43.0;β^-,n:57.0	0.130 s	5.38	1.4768E+06	4.0529E+06	4.0529E+06	6
>	47	O-14	0.0	β^+	1.177 m	0.03		7.7622E+05	3.3201E+06	6
>	48	O-15	0.5	β^+	2.041 m	0.29		7.3565E+05	1.0208E+06	6
>	49	O-16	0.0							6
>	50	O-17	2.5							6
>	51	O-18	0.0							6
>	52	O-19	2.5	β^-	26.910 s	0.30		1.7096E+06	1.0046E+06	6
>	53	O-20	0.0	β^-	13.510 s	0.37		1.1974E+06	1.0574E+06	6
>	54	O-21	?	β^-	3.420 s	2.92	2.1777E+03	2.4467E+06	2.9464E+06	6
>	55	O-22	0.0	β^-:78.0;β^-,n:22.0	2.250 s	6.67	6.9097E+04	1.7557E+06	1.7557E+06	6
>	56	F-15	0.5	p	4.10E-22 s	14.63	1.4836E+06			6
>	57	F-16	0.0	p	1.10E-20 s	54.55	5.3540E+05			6
>	58	F-17	2.5	β^+	1.075 m	0.25		7.3859E+05	1.0207E+06	6
>	59	F-18	1.0	β^+	1.829 h	0.02		2.4197E+05	9.8991E+05	6
>	60	F-19	0.5							6
>	61	F-20	2.0	β^-	11.030 s	0.27		2.4673E+06	1.6447E+06	6
>	62	F-21	2.5	β^-	4.158 s	0.48		2.3418E+06	5.5687E+05	3
>	63	F-22	?	β^-	4.230 s	0.95	2.6606E+03	2.3261E+06	5.7490E+06	6
>	64	F-23	?	β^-	2.230 s	6.28		2.9705E+06	2.2819E+06	8
>	65	F-24	?	β^-	0.400 s	12.50	7.6842E+03	6.1010E+06	1.9815E+06	6
>	66	Ne-17	0.5	β^+:1.3;β^+,p:96.0;β^+,α:2.7	0.109 s	0.55	3.3968E+06	3.4597E+06	3.4597E+06	6
>	67	Ne-18	0.0	β^+	1.672 s	0.48		1.4992E+06	1.1050E+06	6
>	68	Ne-19	0.5	β^+	17.220 s	0.12		9.6214E+05	1.0211E+06	6
>	69	Ne-20	0.0							6
>	70	Ne-21	1.5							6
>	71	Ne-22	0.0							6
>	72	Ne-23	2.5	β^-	37.200 s	0.54		1.8901E+06	1.7279E+05	6
	73	Ne-24	0.0	β^-	3.380 m	0.59		8.0200E+05	5.4200E+05	4
	74	Ne-25	0.5	β^-	0.602 s	1.33		3.5000E+06	3.2400E+05	10
>	75	Ne-26	0.0	β^-	0.197 s	0.51	2.1788E+03			6
>	76	Ne-27	1.5	β^-:98.0;β^-,n:2.0	0.032 s	6.25	2.9304E+04	4.1411E+06	4.1411E+06	6
	77	Na-20	2.0	β^+	0.446 s	0.67		4.7600E+06	2.3510E+06	10
>	78	Na-21	1.5	β^+	22.490 s	0.18		1.1009E+06	1.0371E+06	6
>	79	Na-22	3.0	β^+	2.603 y	0.04		1.9421E+05	2.1925E+06	6
>	80	Na-23	1.5							6
>	81	Na-24	4.0	β^-	14.957 h	0.01		5.5477E+05	4.1212E+06	6
>	82	Na-24m	1.0	IT:99.5;β^-:0.5	0.020 s	0.99		1.3844E+04	4.6993E+05	6
>	83	Na-25	2.5	β^-	59.600 s	1.17		1.4965E+06	4.3690E+05	6
>	84	Na-26	3.0	β^-	1.080 s	0.93		3.3295E+06	2.1803E+06	6
>	85	Na-27	2.5	β^-	0.301 s	1.99	2.8018E+03	3.6155E+06	1.1663E+06	6
>	86	Na-28	1.0	β^-	0.031 s	1.31	6.8807E+03	6.1289E+06	1.1387E+06	6
>	87	Na-29	1.5	β^-:74.1;β^-,n:25.9	0.045 s	2.67	6.2240E+05	3.9035E+06	3.9035E+06	6
>	88	Na-30	2.0	β^-:68.83;β^-,n:30.0; β^-,2n:1.17;β^-,α:~	0.048 s	3.51	8.3932E+05	4.8021E+06	4.8021E+06	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
89	Mg-21	?	β^+:70.7;β^+,p:29.3	0.122 s	2.46	3.2000E+03	4.7000E+06	1.5100E+06	4
> 90	Mg-22	0.0	β^+	3.857 s	0.23		1.3691E+06	1.7227E+06	6
> 91	Mg-23	1.5	β^+	11.317 s	0.10		1.3364E+06	1.0573E+06	6
> 92	Mg-24	0.0							6
> 93	Mg-25	2.5							6
> 94	Mg-26	0.0							6
> 95	Mg-27	0.5	β^-	9.458 m	0.13		6.9962E+05	8.9499E+05	6
> 96	Mg-28	0.0	β^-	20.900 h	0.14		1.9786E+05	1.3800E+06	6
> 97	Mg-29	1.5	β^-	1.300 s	9.23	1.6107E+03	2.6340E+06	1.8582E+06	6
> 98	Mg-30	0.0	β^-:99.94;β^-,n:0.06	0.335 s	5.07	1.8495E+02	2.3191E+06	2.3191E+06	6
> 99	Mg-31	1.5	β^-:93.8;β^-,n:6.2	0.230 s	8.70	7.1047E+04	3.7408E+06	3.7408E+06	6
> 100	Al-23	2.5	β^+:92.0;β^+,p:8.0	0.470 s	6.38	9.3268E+04	3.8480E+06	3.8480E+06	6
> 101	Al-24	4.0	β^+	2.053 s	0.19	2.7412E+03	2.0261E+06	9.4988E+06	6
102	Al-24m	1.0	β^+:7.0;IT:93.0	0.130 s	3.08		4.4000E+05	5.3800E+05	4
> 103	Al-25	2.5	β^+	7.183 s	0.17		1.4536E+06	1.0343E+06	6
> 104	Al-26	5.0	β^+	7.17E+05 y	3.35		3.9892E+05	2.6749E+06	6
> 105	Al-26m	0.0	β^+	6.345 s	0.09		1.4338E+06	1.0261E+06	6
> 106	Al-27	2.5							6
> 107	Al-28	3.0	β^-	2.241 m	0.13		1.2376E+06	1.7829E+06	6
> 108	Al-29	2.5	β^-	6.560 m	0.91		9.7276E+05	1.3809E+06	6
> 109	Al-30	3.0	β^-	3.650 s	1.64		2.2902E+06	3.5124E+06	6
> 110	Al-31	?	β^-	0.644 s	3.88	2.0049E+03	3.3815E+06	7.1306E+05	6
> 111	Al-32	1.0	β^-	0.033 s	12.12	5.4450E+03	5.8938E+06	5.4606E+05	6
> 112	Al-33	2.5	β^-:91.5;β^-,n:8.5	0.042 s	0.48	1.5894E+05	3.8077E+06	3.8077E+06	6
> 113	Al-34	4.0	β^-:87.5;β^-,n:12.5	0.056 s	0.89	2.9662E+05	5.2628E+06	5.2628E+06	6
114	Si-25	2.5	β^+	0.220 s	1.36	1.2700E+03	2.3300E+06	1.0200E+06	4
> 115	Si-26	0.0	β_g^+:0.04;β_m^+:99.96	2.234 s	0.58		1.6200E+06	1.2550E+06	6
116	Si-27	2.5	β^+	4.170 s	0.24		1.7154E+06	1.0265E+06	4
> 117	Si-28	0.0							6
> 118	Si-29	0.5							6
> 119	Si-30	0.0							6
> 120	Si-31	1.5	β^-	2.620 h	0.38		5.9375E+05	2.1724E+03	6
> 121	Si-32	0.0	β^-	132.003 y	9.85		6.4675E+04		6
122	Si-33	?	β^-	6.180 s	2.91		2.0000E+06	2.3000E+06	4
123	Si-34	0.0	β^-	2.770 s	7.22		7.0000E+05	1.5900E+06	4
> 124	Si-35	?	β^-	0.780 s	15.38	1.9121E+03	2.6698E+06	4.4717E+06	6
> 125	Si-36	0.0	β^-	0.450 s	13.33	1.4621E+03	3.0680E+06	1.6714E+06	6
> 126	P-28	3.0	β^+	0.270 s	0.18	5.2771E+03	4.5870E+06	4.7285E+06	6
127	P-29	0.5	β^+	4.140 s	0.34		1.7709E+06	2.4000E+06	4
> 128	P-30	1.0	β^+	2.498 m	0.16		1.4354E+06	1.0222E+06	6
> 129	P-31	0.5							6
> 130	P-32	1.0	β^-	14.270 d	0.28		6.9292E+05	1.7104E+03	6
> 131	P-33	0.5	β^-	25.383 d	0.16		7.6400E+04		6
> 132	P-34	1.0	β^-	12.400 s	0.81		2.2846E+06	3.4748E+05	6
133	P-35	0.5	β^-	47.300 s	1.48		1.0600E+06	1.5789E+06	4
134	P-36	?	β^-	5.600 s	5.36		1.8700E+06	6.2820E+06	4
> 135	P-37	0.5	β^-	2.310 s	5.63		2.6355E+06	2.6355E+06	6
> 136	P-38	?	β^-	0.640 s	21.88	3.2214E+03	4.2900E+06	2.7779E+06	6
> 137	P-39	0.5	β^-:74.0;β^-,n:26.0	0.190 s	26.32	3.8478E+05	2.9230E+06	2.9230E+06	6
> 138	P-40	?	β^-:84.2;β^-,n:15.8	0.150 s	5.33	2.7566E+05	4.4183E+06	4.4183E+06	6
139	S-29	2.5	β^+	0.187 s	2.14	3.6000E+03	4.0700E+06	4.6116E+06	4
> 140	S-30	0.0	β^+	1.178 s	0.42		2.0836E+06	1.6080E+06	6
> 141	S-31	0.5	β^+	2.572 s	0.51		1.9961E+06	1.0381E+06	6
> 142	S-32	0.0							6
> 143	S-33	1.5							6
> 144	S-34	0.0							6
> 145	S-35	1.5	β^-	87.320 d	0.18		4.8720E+04		6
> 146	S-36	0.0							6
> 147	S-37	3.5	β^-	4.990 m	0.40		7.9324E+05	2.9369E+06	6
> 148	S-38	0.0	β^-	2.838 h	0.41		4.8902E+05	1.6953E+06	6
> 149	S-39	?	β^-	11.500 s	4.35		2.2556E+06	1.7831E+06	6
> 150	S-40	0.0	β^-	8.800 s	25.00		1.4450E+06	1.4709E+06	6
> 151	S-41	3.5	β^-	1.990 s	2.51		2.7633E+06	2.7633E+06	6
152	Cl-32	1.0	β^+	0.298 s	0.67		3.8100E+06	4.3100E+06	10
> 153	Cl-33	1.5	β^+	2.511 s	0.12		2.0822E+06	1.0480E+06	6
> 154	Cl-34	0.0	β^+	1.526 s	0.20		2.0438E+06	1.0292E+06	6
> 155	Cl-34m	3.0	β^+:52.0;IT:48.0	32.100 m	0.31		4.4140E+05	1.9791E+06	6
> 156	Cl-35	1.5							6
> 157	Cl-36	2.0	β^+:1.9;β^-:98.1	3.01E+05 y	1.00		2.7314E+05	1.8332E+01	6
> 158	Cl-37	1.5							6
> 159	Cl-38	2.0	β^-	37.200 m	0.27		1.5230E+06	1.4937E+06	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
> 160	Cl-38m	5.0	IT	0.715 s	0.42		4.2949E+02	6.7130E+05	6
> 161	Cl-39	1.5	β^-	55.600 m	0.36		8.2265E+05	1.4544E+06	3
> 162	Cl-40	2.0	β^-	1.350 m	1.48		1.5191E+06	4.0806E+06	6
> 163	Cl-41	?	β^-	38.400 s	2.08		1.9192E+06	1.9192E+06	6
> 164	Cl-42	?	β^-	6.800 s	4.41		3.1710E+06	3.1710E+06	6
> 165	Cl-43	1.5	β^-	3.070 s	2.28		2.6133E+06	2.6133E+06	6
> 166	Cl-44	?	β^-:92.0;β^-,n:8.0	0.560 s	19.64	7.4174E+04	3.8901E+06	3.8901E+06	6
> 167	Cl-45	1.5	β^-:76.0;β^-,n:24.0	0.400 s	10.00	3.7451E+05	3.2652E+06	3.2652E+06	6
168	Ar-33	0.5	β^+:66.0;β^+,p:34.0	0.173 s	1.16	1.4400E+03	3.8000E+06	1.3830E+06	4
> 169	Ar-34	0.0	β^+	0.845 s	0.40		2.2888E+06	1.1050E+06	6
> 170	Ar-35	1.5	β^+	1.775 s	0.23		2.2655E+06	1.0495E+06	6
> 171	Ar-36	0.0							6
> 172	Ar-37	1.5	β^+	35.040 d	0.09		1.9497E+03	2.2289E+02	6
> 173	Ar-38	0.0							6
> 174	Ar-39	3.5	β^-	269.006 y	3.35		2.1865E+05		6
> 175	Ar-40	0.0							6
> 176	Ar-41	3.5	β^-	1.827 h	0.36		4.6360E+05	1.2845E+06	6
> 177	Ar-42	0.0	β^-	33.001 y	6.06		2.3282E+05		6
> 178	Ar-43	2.5	β^-	5.370 m	1.12		1.3784E+06	1.4902E+06	6
179	Ar-44	0.0	β^-	11.867 m	0.42		8.6000E+05	1.8200E+06	4
180	Ar-45	3.5	β^-	21.480 s	0.70		2.0000E+06	2.9800E+06	4
181	Ar-46	0.0	β^-	8.400 s	7.14		1.7300E+06	1.9570E+06	4
> 182	Ar-47	1.5	β^-:99.0;β^-,n:1.0	0.580 s	20.69	3.5918E+03	3.2330E+06	3.2330E+06	6
> 183	K-36	2.0	β^+	0.342 s	0.58	2.8066E+03	3.4698E+06	5.4491E+06	6
> 184	K-37	1.5	β^+	1.226 s	0.57		2.3474E+06	1.0722E+06	6
> 185	K-38	3.0	β^+	7.610 m	0.53		1.2013E+06	3.1905E+06	6
> 186	K-38m	0.0	β^+	0.924 s	0.22		2.3124E+06	1.0306E+06	6
> 187	K-39	1.5							6
> 188	K-40	4.0	β^+:10.86;β^-:89.14	1.26E+09 y	1.58		4.5336E+05	1.5576E+05	6
> 189	K-41	1.5							6
> 190	K-42	2.0	β^-	12.359 h	0.02		1.4208E+06	2.7599E+05	6
> 191	K-43	1.5	β^-	22.200 h	0.90		3.0956E+05	9.6616E+05	6
> 192	K-44	2.0	β^-	22.130 m	0.86		1.4361E+06	2.3913E+06	6
> 193	K-45	1.5	β^-	17.300 m	3.47		9.8646E+05	1.8343E+06	6
> 194	K-46	2.0	β^-	1.750 m	9.52		2.3208E+06	2.6506E+06	6
> 195	K-47	0.5	β^-	17.500 s	1.37		1.8088E+06	2.6238E+06	6
> 196	K-48	2.0	β^-	6.800 s	2.94	1.5714E+03	2.6579E+06	6.4503E+06	6
197	Ca-37	1.5	β^+:24.0;β^+,p:76.0	0.175 s	1.71	1.1100E+03	3.2700E+06	1.1400E+06	4
> 198	Ca-38	0.0	β_g^+:0.02;β_m^+:99.98	0.440 s	1.82	1.0004E+03	2.4332E+06	1.3745E+06	6
> 199	Ca-39	1.5	β^+	0.860 s	0.16		2.5614E+06	1.0221E+06	6
> 200	Ca-40	0.0							6
> 201	Ca-41	3.5	β^+	1.03E+05 y	3.88		2.8431E+03	4.3712E+02	6
> 202	Ca-42	0.0							6
> 203	Ca-43	3.5							6
> 204	Ca-44	0.0							6
> 205	Ca-45	3.5	β_g^-:100.0;β_m^-:~	163.000 d	0.61		7.7202E+04	9.5432E-03	6
> 206	Ca-46	0.0							6
> 207	Ca-47	3.5	β^-	4.538 d	0.04		3.4461E+05	1.0604E+06	6
> 208	Ca-48	0.0	β^-,β^-:50.0;β^-:50.0	5.30E+19 y	32.08		2.1839E+06	4.7000E+04	6
> 209	Ca-49	1.5	β^-	8.720 m	0.23		8.6951E+05	3.1671E+06	6
> 210	Sc-40	4.0	β^+	0.182 s	0.38	2.7720E+03	3.3988E+06	7.1190E+06	6
> 211	Sc-41	3.5	β^+	0.596 s	0.29		2.5413E+06	1.0220E+06	6
> 212	Sc-42	0.0	β^+	0.681 s	0.04		2.5077E+06	1.0211E+06	6
> 213	Sc-42m	7.0	β^+	1.033 m	0.48		1.2556E+06	4.2042E+06	6
> 214	Sc-43	3.5	β^+	3.891 h	0.31		4.1985E+05	9.8481E+05	6
> 215	Sc-44	2.0	β^+	3.970 h	1.01		5.9603E+05	2.1358E+06	6
> 216	Sc-44m	6.0	β^+:1.23;IT:98.77	2.442 d	0.17		3.2820E+04	2.7527E+05	6
> 217	Sc-45	3.5							6
218	Sc-45m	1.5	IT	0.316 s	2.85		8.6000E+03	6.1000E+02	4
> 219	Sc-46	4.0	β^-	83.788 d	0.02		1.1207E+05	2.0095E+06	6
> 220	Sc-46m	1.0	IT	18.700 s	0.37		5.8900E+04	8.2959E+04	6
> 221	Sc-47	3.5	β^-	3.351 d	0.06		1.6257E+05	1.0839E+05	6
> 222	Sc-48	6.0	β^-	1.820 d	0.21		2.1959E+05	3.3496E+06	6
> 223	Sc-49	3.5	β^-	57.200 m	0.35		8.1988E+05	3.3403E+03	6
> 224	Sc-50	5.0	β^-	1.708 m	0.49		1.6241E+06	3.1981E+06	6
> 225	Sc-50m	2.0	β^-:1.25;IT:98.75	0.350 s	8.57		4.0686E+04	2.6440E+05	6
> 226	Sc-51	3.5	β^-	12.400 s	0.81		1.8412E+06	2.3500E+06	6
> 227	Sc-52	3.0	β^-	8.200 s	2.44	1.1650E+03	2.8494E+06	2.8928E+06	6
228	Ti-41	1.5	β^+:99.9;β^+,p:0.1	0.080 s	2.50	1.1670E+03	3.4300E+06	1.0960E+06	4
> 229	Ti-42	0.0	β^+	0.199 s	3.02	1.0140E+03	2.6373E+06	1.3846E+06	6
> 230	Ti-43	3.5	β^+	0.509 s	0.98		2.6368E+06	1.2021E+06	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
> 231	Ti-44	0.0	β^+	60.000 y	1.83		1.0627E+04	1.3826E+05	6
> 232	Ti-45	3.5	β^+	3.080 h	0.32		3.7334E+05	8.7185E+05	6
> 233	Ti-46	0.0							6
> 234	Ti-47	2.5							6
> 235	Ti-48	0.0							6
> 236	Ti-49	3.5							6
> 237	Ti-50	0.0							6
> 238	Ti-51	1.5	β^-	5.800 m	0.52		8.6893E+05	3.6456E+05	6
> 239	Ti-52	0.0	β^-	1.700 m	5.88		7.5460E+05	1.2842E+05	6
240	Ti-53	1.5	β^-	32.700 s	2.75		1.4100E+06	1.9700E+06	4
> 241	Ti-54	0.0	β^-	1.500 s	26.67		1.4337E+06	1.4337E+06	6
> 242	Ti-55	1.5	β^-	0.490 s	18.37		2.4933E+06	2.4933E+06	6
> 243	V-44	2.0	β^+	0.111 s	6.31	2.9913E+03	4.3488E+06	4.5262E+06	6
> 244	V-45	3.5	β^+	0.539 s	3.34	1.0383E+03	2.8536E+06	1.0224E+06	6
> 245	V-46	0.0	β^+	0.423 s	0.03		2.8143E+06	1.0216E+06	6
> 246	V-47	1.5	β^+	32.600 m	0.92		8.0315E+05	9.9505E+05	6
> 247	V-48	4.0	β^+	15.974 d	0.02		1.4928E+05	2.9159E+06	6
> 248	V-49	3.5	β^+	330.000 d	6.06		3.5832E+03	9.4695E+02	6
> 249	V-50	6.0	β^+:83.0;β^-:17.0	1.40E+17 y	28.57		1.5679E+04	1.4235E+06	6
> 250	V-51	3.5							6
> 251	V-52	3.0	β^-	3.745 m	0.13		1.0643E+06	1.4484E+06	6
> 252	V-53	3.5	β^-	1.620 m	2.47		1.0051E+06	1.0416E+06	6
> 253	V-54	3.0	β^-	49.800 s	1.00		1.3575E+06	4.0975E+06	6
> 254	V-55	3.5	β^-	6.540 s	2.29		2.3824E+06	6.8919E+05	6
> 255	V-56	1.0	β^-	0.216 s	1.85		3.0671E+06	3.0671E+06	6
> 256	V-57	1.5	β^-:99.6;β^-,n:0.4	0.350 s	2.86	3.0199E+03	2.7699E+06	2.7699E+06	6
> 257	V-58	3.0	β^-:20.0;β^-,n:80.0	0.191 s	4.19	8.4856E+05	1.6232E+06	1.6232E+06	6
> 258	Cr-46	0.0	β^+	0.260 s	23.08	1.1679E+03	3.0890E+06	1.0220E+06	6
> 259	Cr-47	1.5	β^+	0.500 s	3.00	1.0934E+03	3.0125E+06	1.0252E+06	6
> 260	Cr-48	0.0	β^+	21.560 h	0.14		8.2222E+03	4.3306E+05	6
> 261	Cr-49	2.5	β^+	41.900 m	0.72		5.9649E+05	1.0472E+06	6
> 262	Cr-50	0.0	β^+,β^+	1.80E+17 y	0.00		1.1672E+06		6
> 263	Cr-51	3.5	β^+	27.703 d	0.01		3.6647E+03	3.2711E+04	6
> 264	Cr-52	0.0							6
> 265	Cr-53	1.5							6
> 266	Cr-54	0.0							6
> 267	Cr-55	1.5	β^-	3.540 m	0.85		1.0965E+06	4.2428E+03	6
> 268	Cr-56	0.0	β^-	5.940 m	1.68		6.0666E+05	9.1689E+04	6
> 269	Cr-57	?	β^-	21.100 s	4.74		1.9493E+06	4.6221E+05	6
> 270	Cr-58	0.0	β^-	7.000 s	4.29		1.3600E+06	1.3600E+06	6
> 271	Cr-59	2.5	β^-	0.460 s	10.87		2.5300E+06	2.5300E+06	6
> 272	Mn-48	4.0	β^+:99.72;β^+,p:0.28;β^+,α:~	0.158 s	1.39	3.7839E+03	4.4908E+06	4.4908E+06	6
> 273	Mn-49	2.5	β^+	0.382 s	1.83	1.1186E+03	3.1049E+06	1.0944E+06	6
> 274	Mn-50	0.0	β^+	0.284 s	0.16	1.0833E+03	3.1001E+06	1.0210E+06	6
275	Mn-50m	5.0	β^+	1.750 m	1.71		1.6600E+06	4.7800E+06	4
> 276	Mn-51	2.5	β^+	46.200 m	0.22		9.3497E+05	9.9768E+05	6
> 277	Mn-52	6.0	β^+	5.595 d	0.05		7.1558E+04	3.4613E+06	6
> 278	Mn-52m	2.0	β^+:98.25;IT:1.75	21.200 m	1.89		1.1329E+06	2.4086E+06	6
> 279	Mn-53	3.5	β^+	3.68E+06 y	5.71		4.0016E+03	1.4222E+03	6
> 280	Mn-54	3.0	β^+	312.130 d	0.01		4.0270E+03	8.3600E+05	6
> 281	Mn-55	2.5							6
> 282	Mn-56	3.0	β^-	2.582 h	0.19		8.2119E+05	1.7102E+06	6
> 283	Mn-57	2.5	β^-	1.423 m	2.11		1.1043E+06	9.9630E+04	6
> 284	Mn-58	3.0	β^-	1.087 m	0.77		1.7114E+06	2.3822E+06	6
> 285	Mn-58m	0.0	β^-	2.700 s	22.22		2.8284E+06	1.2007E+05	6
> 286	Mn-59	2.5	β^-	4.590 s	1.09		2.0598E+06	5.3789E+05	6
> 287	Mn-60	0.0	β^-	51.000 s	11.76	1.2148E+03	3.8400E+06		6
288	Mn-60m	3.0	β^-	1.790 s	5.59		2.7200E+06	2.6900E+06	12
> 289	Mn-61	2.5	β^-	0.670 s	5.97		3.2557E+06	1.3029E+05	6
> 290	Mn-62	3.0	β^-	0.880 s	17.05	1.5521E+03	3.8030E+06	2.1475E+06	6
> 291	Mn-63	2.5	β^-	0.275 s	1.45		3.0667E+06	3.0667E+06	6
> 292	Mn-64	1.0	β^-	0.089 s	2.82		4.0500E+06	4.0500E+06	6
293	Fe-49	0.0							1
> 294	Fe-50	0.0	β^+	0.155 s	7.10		2.7156E+06	2.7156E+06	6
> 295	Fe-51	2.5	β^+	5.083 h	1.64	1.1740E+03	3.2701E+06	1.0623E+06	6
> 296	Fe-52	0.0	β_g^+:~;β_m^+:100.0	8.275 h	0.10		1.9200E+05	7.4236E+05	6
> 297	Fe-52m	12.0	β^+	45.900 s	1.31		1.9817E+06	4.8861E+06	6
> 298	Fe-53	3.5	β^+	8.510 m	0.82		1.1070E+06	1.1843E+06	6
> 299	Fe-53m	9.5	IT	2.580 m	1.16			3.0347E+06	6
> 300	Fe-54	0.0							6
> 301	Fe-55	1.5	β^+	2.735 y	0.80		4.0036E+03	1.6611E+03	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
> 302	Fe-56	0.0							6
> 303	Fe-57	0.5							6
> 304	Fe-58	0.0							6
> 305	Fe-59	1.5	β^-	44.495 d	0.02		1.1837E+05	1.1890E+06	6
> 306	Fe-60	0.0	β_m^-	1.50E+06 y	20.00		8.7668E+04		6
307	Fe-61	1.5	β^-	5.980 m	1.00		1.0548E+06	1.3910E+06	4
> 308	Fe-62	0.0	β^-	1.133 m	2.94		8.2400E+05	5.0610E+05	6
> 309	Fe-63	2.5	β^-	6.100 s	9.84		2.6043E+06	3.1773E+05	6
> 310	Fe-64	0.0	β^-	2.000 s	10.00		2.1055E+06	1.5540E+04	6
> 311	Fe-65	0.5	β^-	1.300 s	23.08		2.7633E+06	2.7633E+06	6
> 312	Co-52	6.0	β_g^+:50.0;β_m^+:50.0	0.115 s	20.00		3.6690E+06	3.6690E+06	6
> 313	Co-53	3.5	β^+	0.240 s	8.33	1.2128E+03	3.3974E+06	1.0964E+06	6
> 314	Co-54	0.0	β^+	0.193 s	0.07	1.1833E+03	3.3992E+06	1.0210E+06	6
> 315	Co-54m	7.0	β^+	1.480 m	1.35		2.0472E+06	3.9306E+06	6
> 316	Co-55	3.5	β^+	17.530 h	0.17		4.3658E+05	2.0070E+06	6
> 317	Co-56	4.0	β^+	77.310 d	0.25		1.2223E+05	3.5916E+06	6
> 318	Co-57	3.5	β^+	271.800 d	0.02		1.8293E+04	1.2522E+05	6
> 319	Co-58	2.0	β^+	70.860 d	0.10		3.4311E+04	9.7620E+05	6
> 320	Co-58m	5.0	IT	8.900 h	1.12		2.2270E+04	1.8165E+03	6
> 321	Co-59	3.5							6
> 322	Co-60	5.0	β^-	5.271 y	0.02		9.6773E+04	2.5038E+06	6
> 323	Co-60m	2.0	IT:99.75;β^-:0.25	10.470 m	0.38		5.5689E+04	6.7864E+03	6
> 324	Co-61	3.5	β^-	1.650 h	0.30		4.6636E+05	9.6966E+04	6
> 325	Co-62	2.0	β^-	1.500 m	2.67		1.6397E+06	1.6003E+06	6
326	Co-62m	5.0	β^-:99.0;IT:1.0	13.910 m	0.36		1.0110E+06	2.6982E+06	5
> 327	Co-63	3.5	β^-	27.400 s	1.82		1.5684E+06	1.4408E+05	6
> 328	Co-64	1.0	β^-	0.300 s	10.00		3.2887E+06	1.8117E+05	6
> 329	Co-65	3.5	β^-	1.200 s	5.00		2.6649E+06	1.1473E+05	6
> 330	Co-66	3.0	β^-	0.233 s	7.30	1.1698E+03	3.3560E+06	2.7543E+06	6
> 331	Co-67	3.5	β^-	0.425 s	4.71		2.7542E+06	6.9410E+05	6
> 332	Co-68	7.0	β^-	0.199 s	10.55	1.5801E+03	3.8389E+06	3.4444E+06	6
> 333	Co-68m	3.0	β^-:50.0;IT:50.0	1.600 s	18.75		2.0440E+06	2.1190E+06	6
> 334	Co-69	3.5	β^-:99.0;β^-,n:1.0	0.227 s	5.73	1.3481E+04	3.3066E+06	3.3066E+06	6
335	Ni-53	3.5	β^+	0.045 s	33.33		1.6600E+06	4.5990E+05	4
> 336	Ni-54	0.0	β^+	0.104 s	6.73		2.9332E+06	2.9332E+06	6
> 337	Ni-55	3.5	β^+	0.204 s	1.47	1.2936E+03	3.5994E+06	1.0169E+06	6
> 338	Ni-56	0.0	β^+	6.075 d	0.16		7.1413E+03	1.7207E+06	8
> 339	Ni-57	1.5	β^+	1.496 d	0.84		1.5657E+05	1.9410E+06	6
> 340	Ni-58	0.0	β^+,β^+	7.00E+20 y	0.00		1.9257E+06		6
> 341	Ni-59	1.5	β^+	7.60E+04 y	6.58		4.6224E+03	2.5439E+03	6
> 342	Ni-60	0.0							6
> 343	Ni-61	1.5							6
> 344	Ni-62	0.0							6
> 345	Ni-63	0.5	β^-	100.600 y	1.39		1.7425E+04		6
> 346	Ni-64	0.0							6
> 347	Ni-65	2.5	β^-	2.520 h	0.04		6.2970E+05	5.4993E+05	6
> 348	Ni-66	0.0	β^-	2.267 d	0.92		6.5239E+04		6
> 349	Ni-67	0.5	β^-	21.000 s	4.76		1.5232E+06	5.0252E+04	6
> 350	Ni-68	0.0	β^-	29.000 s	6.90		7.0107E+05	7.0107E+05	6
> 351	Ni-69	?	β^-	11.400 s	2.63		1.1739E+06	2.6354E+06	6
+ 352	Ni-69m	0.5	β^-	3.500 s	11.43		2.0261E+06	2.0261E+06	6
> 353	Ni-70	0.0	β_n^-	6.000 s	5.00		1.1947E+06	1.1947E+06	6
> 354	Ni-71	0.5	β^-	2.560 s	1.17		2.5037E+06	2.5037E+06	6
> 355	Cu-56	4.0	β^+:99.6;β^+,p:0.4	0.093 s	3.23	8.1386E+03	5.0891E+06	5.0891E+06	6
> 356	Cu-57	1.5	β^+	0.196 s	0.36	1.2603E+03	3.6001E+06	1.1398E+06	6
> 357	Cu-58	1.0	β^+	3.204 s	0.22	1.1108E+03	3.2955E+06	1.5414E+06	6
> 358	Cu-59	1.5	β^+	1.358 m	0.61		1.4883E+06	1.4436E+06	6
> 359	Cu-60	2.0	β^+	23.700 m	1.69		9.0164E+05	3.9124E+06	6
> 360	Cu-61	1.5	β^+	3.333 h	0.15		3.0883E+05	8.2352E+05	6
> 361	Cu-62	1.0	β^+	9.750 m	0.10		1.2829E+06	1.0117E+06	6
> 362	Cu-63	1.5							6
> 363	Cu-64	1.0	β^+:61.0;β^-:39.0	12.701 h	0.02		1.2588E+05	1.9008E+05	6
> 364	Cu-65	1.5							6
> 365	Cu-66	1.0	β^-	5.100 m	0.20		1.0706E+06	8.1860E+04	6
> 366	Cu-67	1.5	β^-	2.579 d	0.16		1.5567E+05	1.1541E+05	6
> 367	Cu-68	1.0	β^-	31.100 s	4.82		1.4815E+06	1.0209E+06	6
368	Cu-68m	6.0	β^-:16.0;IT:84.0	3.750 m	1.33		2.0400E+05	1.1000E+06	4
> 369	Cu-69	1.5	β^-	2.850 m	5.26		8.8652E+05	5.2500E+05	6
> 370	Cu-70	1.0	β^-	4.500 s	22.22		2.7823E+06	4.7779E+05	6
> 371	Cu-70m	3.0	β^-:50.0;IT:50.0	33.000 s	6.06		1.1149E+06	1.1654E+06	6
+ 372	Cu-70n	1.0	β_g^-:95.0;IT_m:5.0	6.600 s	3.03		2.1630E+06	2.1700E+06	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
373	Cu-71	1.5	β^-	19.500 s	8.21		1.4580E+06	1.2443E+06	10
> 374	Cu-72	1.0	β^-	6.600 s	1.52		3.1207E+06	1.4284E+06	6
> 375	Cu-73	1.5	β_g^-:100.0;β_m^-:~	4.200 s	7.14			3.0561E+05	6
> 376	Cu-74	1.0	β^-	1.594 s	0.63		3.2347E+06	3.2347E+06	6
> 377	Cu-75	1.5	β^-:96.5;β^-,n:3.5	1.224 s	0.25	3.0789E+04	2.7167E+06	2.7167E+06	6
> 378	Zn-58	0.0	β^+:97.0;β^+,p:3.0	0.084 s	10.71	4.8698E+04	3.0758E+06	3.0758E+06	6
> 379	Zn-59	1.5	β^+	0.182 s	0.99	1.3304E+03	3.8015E+06	1.0565E+06	6
> 380	Zn-60	0.0	β^+	2.380 m	2.10		1.1186E+06	1.5065E+06	6
> 381	Zn-61	1.5	β^+	1.485 m	0.22		1.8553E+06	1.5249E+06	6
> 382	Zn-62	0.0	β^+	9.260 h	0.22		3.2143E+04	4.4322E+05	6
> 383	Zn-63	1.5	β^+	38.400 m	0.26		9.1674E+05	1.1042E+06	6
> 384	Zn-64	0.0	β^+,β^+	2.30E+18 y	0.00		1.0957E+06		6
> 385	Zn-65	2.5	β^+	244.150 d	0.04		6.6926E+03	5.8217E+05	6
> 386	Zn-66	0.0							6
> 387	Zn-67	2.5							6
> 388	Zn-68	0.0							6
> 389	Zn-69	0.5	β^-	56.400 m	1.24		3.2290E+05	6.0048E+00	3
> 390	Zn-69m	4.5	β^-:0.03;IT:99.97	13.780 h	0.36		2.2379E+04	4.1643E+05	3
> 391	Zn-70	0.0							6
> 392	Zn-71	0.5	β^-	2.450 m	4.08		1.0481E+06	3.1492E+05	6
> 393	Zn-71m	4.5	β^-	3.960 h	1.26		5.3704E+05	1.5597E+06	6
> 394	Zn-72	0.0	β_g^-:96.67;β_m^-:3.33	1.938 d	0.22		1.0290E+05	1.5249E+05	6
> 395	Zn-73	0.5	β^-	23.500 s	4.26		1.8443E+06	1.0487E+05	6
> 396	Zn-73m	2.5	IT	13.000 s	1.54			1.9550E+05	6
+ 397	Zn-73n	3.5	IT_m:50.0;β_g^-:50.0	5.800 s	13.79		7.5448E+05	7.7553E+05	6
398	Zn-74	0.0	β^-	1.593 m	1.26		8.0000E+05	3.0000E+05	4
> 399	Zn-75	3.5	β^-	10.200 s	1.96		1.9398E+06	1.7133E+06	6
> 400	Zn-76	0.0	β^-	5.700 s	5.26		1.5858E+06	5.2295E+05	6
> 401	Ga-63	1.5	β^+	32.400 s	1.54		1.8899E+06	1.3729E+06	6
> 402	Ga-64	0.0	β^+	2.627 m	0.46		1.6989E+06	3.3523E+06	6
> 403	Ga-65	1.5	β^+	15.200 m	1.32		8.2357E+05	1.1678E+06	6
> 404	Ga-66	0.0	β^+	9.490 h	0.74		9.7596E+05	2.4587E+06	6
> 405	Ga-67	1.5	β^+	3.261 d	0.02		3.5158E+04	1.5959E+05	6
> 406	Ga-68	1.0	β^+	1.128 h	0.09		7.3993E+05	9.5103E+05	6
> 407	Ga-69	1.5							6
> 408	Ga-70	1.0	β^+:0.41;β^-:99.59	21.140 m	0.14		6.4409E+05	7.2822E+03	6
> 409	Ga-71	1.5							6
> 410	Ga-72	3.0	β^-	14.100 h	0.07		5.0670E+05	2.7047E+06	6
+ 411	Ga-72m	0.0	IT	0.040 s	0.33			1.1966E+05	6
> 412	Ga-73	1.5	β_g^-:1.47;β_m^-:98.53	4.860 h	0.62		4.4666E+05	3.4096E+05	6
> 413	Ga-74	3.0	β^-	8.120 m	1.48		9.8830E+05	3.0061E+06	6
414	Ga-74m	1.0	IT	9.500 s	10.53		1.6867E+04	4.2963E+04	4
415	Ga-75	1.5	β_g^-:99.3;β_m^-:0.7	2.170 m	4.61		1.3853E+06	6.7089E+04	4
> 416	Ga-76	?	β^-	32.600 s	1.84		1.8008E+06	2.7146E+06	6
> 417	Ga-77	1.5	β_m^-	13.000 s	2.31		2.1117E+06	4.5702E+05	6
> 418	Ga-78	3.0	β^-	5.090 s	0.98		2.6036E+06	2.5000E+06	6
419	Ga-79	1.5	β_g^-:94.71;β_m^-:5.2;β^-,n:0.09	3.000 s	3.00	2.8000E+05	2.2300E+06	1.8400E+06	4
420	Ge-64	0.0	β^+	1.062 m	3.92		1.0800E+06	1.2130E+06	4
> 421	Ge-65	1.5	β^+	30.900 s	1.62		2.1178E+06	1.7541E+06	8
> 422	Ge-66	0.0	β^+	2.260 h	2.21		9.7141E+04	6.7453E+05	6
> 423	Ge-67	0.5	β^+	18.900 m	1.59		1.1354E+06	1.3919E+06	8
> 424	Ge-68	0.0	β^+	270.950 d	0.06		4.7457E+03	4.1430E+03	6
> 425	Ge-69	2.5	β^+	1.627 d	0.26		1.1998E+05	9.5054E+05	6
> 426	Ge-70	0.0							6
> 427	Ge-71	0.5	β^+	11.430 d	0.26		4.7924E+03	4.1951E+03	6
> 428	Ge-72	0.0							6
> 429	Ge-73	4.5							6
> 430	Ge-73m	0.5	IT	0.499 s	2.20		5.3486E+04	1.0967E+04	8
> 431	Ge-74	0.0							6
> 432	Ge-75	0.5	β^-	1.380 h	0.05		4.2037E+05	3.5235E+04	6
> 433	Ge-75m	3.5	β^-:0.03;IT:99.97	47.700 s	1.05		8.1277E+04	5.7760E+04	8
> 434	Ge-76	0.0	β^-,β^-	1.58E+21 y	10.76		2.0391E+06		6
> 435	Ge-77	3.5	β^-	11.300 h	0.09		6.4219E+05	1.0785E+06	6
> 436	Ge-77m	0.5	β^-:81.0;IT:19.0	52.900 s	1.13		9.6595E+05	7.4015E+04	6
> 437	Ge-78	0.0	β^-	1.467 h	1.14		2.2672E+05	2.7806E+05	6
> 438	Ge-79	0.5	β^-	18.980 s	0.16		1.7140E+06	2.5966E+05	6
> 439	Ge-79m	3.5	β^-:96.0;IT:4.0	39.000 s	2.56		1.2915E+06	1.1961E+06	6
> 440	Ge-80	0.0	β^-	27.000 s	7.41		9.4924E+05	3.4275E+05	2
> 441	Ge-81	4.5	β^-	7.600 s	7.89		1.6699E+06	2.6398E+06	8
> 442	Ge-81m	0.5	β^-:100.0;IT:1.0	7.600 s	7.89		2.4754E+06	1.4953E+06	6
> 443	As-67	2.5	β^+	42.500 s	2.82		2.0683E+06	1.4638E+06	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
> 444	As-68	3.0	β^+	2.527 m	0.53		2.0207E+06	3.6930E+06	6
> 445	As-69	2.5	β^+	15.230 m	1.05		1.2191E+06	1.1347E+06	6
> 446	As-70	4.0	β^+	52.600 m	0.57		8.4073E+05	3.9973E+06	6
> 447	As-71	2.5	β^+	2.720 d	0.23		1.1581E+05	5.7509E+05	6
> 448	As-72	2.0	β^+	1.083 d	0.38		1.0401E+06	1.7805E+06	6
449	As-73	1.5	β^+	80.301 d	0.09		5.7700E+04	1.5870E+04	4
> 450	As-74	2.0	β^-:34.0;β^+:66.0	17.780 d	0.17		2.6831E+05	7.5966E+05	6
> 451	As-75	1.5							6
> 452	As-76	2.0	β^-	1.093 d	0.34		1.0646E+06	4.1634E+05	6
> 453	As-77	1.5	β^-	1.618 d	0.13		2.2547E+05	8.3133E+03	6
> 454	As-78	2.0	β^-	1.512 h	0.22		1.2561E+06	1.2996E+06	6
> 455	As-79	1.5	β_g^-:2.37;β_m^-:97.63	9.010 m	1.66		8.3924E+05	3.3780E+04	6
> 456	As-80	1.0	β^-	15.200 s	1.32		2.1477E+06	5.8213E+05	6
> 457	As-81	1.5	β_g^-:96.41;β_m^-:3.59	33.300 s	2.40		1.5753E+06	2.3027E+05	6
> 458	As-82	1.0	β^-	19.100 s	2.62		3.2968E+06	3.2728E+05	6
> 459	As-82m	5.0	β^-	13.600 s	2.21		2.0372E+06	2.9696E+06	6
460	As-83	1.5	β_g^-:30.0;β_m^-:70.0	13.400 s	2.24		1.3700E+06	2.0200E+06	4
461	As-84	?	β^-:99.72;β^-,n:0.28	5.500 s	5.45		2.0000E+06	5.3400E+06	4
+ 462	As-84m	?	β^-	0.650 s	23.08		3.2907E+06	3.2907E+06	6
> 463	Se-68	0.0	β^+	35.500 s	1.97		1.5633E+06	1.5633E+06	6
> 464	Se-69	1.5	β^+	27.400 s	0.73		2.3037E+06	1.8651E+06	6
> 465	Se-70	0.0	β^+	41.100 m	0.73		4.8423E+05	9.9282E+05	6
> 466	Se-71	2.5	β^+	4.740 m	1.05		1.3970E+06	1.5838E+06	6
> 467	Se-72	0.0	β^+	8.400 d	0.95		2.2457E+04	3.4343E+04	6
> 468	Se-73	4.5	β^+	7.150 h	1.12		3.8655E+05	1.0900E+06	6
> 469	Se-73m	1.5	β^+:27.4;IT:72.6	39.800 m	3.27		1.6331E+05	2.6313E+05	8
> 470	Se-74	0.0							6
> 471	Se-75	2.5	β^+	119.640 d	0.20		1.4650E+04	3.9020E+05	6
> 472	Se-76	0.0							6
> 473	Se-77	0.5							6
> 474	Se-77m	3.5	IT	17.360 s	0.29		7.2932E+04	8.8810E+04	8
> 475	Se-78	0.0							6
> 476	Se-79	3.5	β^-	1.10E+06 y	18.18		5.5800E+04		6
> 477	Se-79m	0.5	IT:99.94;β^-:0.06	3.900 m	0.51		8.1866E+04	1.3961E+04	6
> 478	Se-80	0.0							6
> 479	Se-81	0.5	β^-	18.450 m	0.65		6.1070E+05	7.9913E+03	6
> 480	Se-81m	3.5	β^-:0.05;IT:99.95	57.280 m	0.03		8.4445E+04	1.8253E+04	6
> 481	Se-82	0.0	β^-,β^-	1.21E+20 y	14.05		2.9950E+06		6
482	Se-83	4.5	β^-	22.333 m	5.22		6.0000E+05	2.4100E+06	4
> 483	Se-83m	0.5	β^-	1.168 m	0.57		1.2726E+06	9.7149E+05	6
> 484	Se-84	0.0	β_g^-:100.0;β_m^-:~	3.100 m	3.23		5.4037E+05	4.0820E+05	6
485	Se-85	2.5	β^-	31.700 s	2.84		1.6200E+06	2.3800E+06	4
486	Br-71	?	β^+	21.400 s	2.80		1.5000E+06	7.6000E+05	4
> 487	Br-72	1.0	β^+	1.310 m	3.05		2.7169E+06	2.9218E+06	6
> 488	Br-72m	1.0	IT	10.600 s	3.77		5.0878E+04	5.0003E+04	6
> 489	Br-73	0.5	β_g^+:20.59;β_m^+:79.41	3.400 m	5.88		1.3613E+06	1.4164E+06	8
> 490	Br-74	0.0	β^+	25.400 m	1.18		1.0551E+06	4.3571E+06	6
> 491	Br-74m	4.0	β^+	46.000 m	4.35		1.2426E+06	3.7950E+06	6
> 492	Br-75	1.5	β^+	1.612 h	1.34		5.2826E+05	1.1939E+06	6
> 493	Br-76	1.0	β^+	16.200 h	1.23		6.4814E+05	2.7160E+06	6
494	Br-76m	4.0	β^+:0.3;IT:99.7	1.310 s	1.53			3.4000E+04	4
> 495	Br-77	1.5	β^+	2.377 d	0.01		6.0336E+03	3.2083E+05	6
> 496	Br-77m	4.5	IT	4.280 m	2.34		8.4793E+04	1.9569E+04	6
> 497	Br-78	1.0	β^+	6.460 m	0.62		1.0238E+06	1.0339E+06	6
> 498	Br-79	1.5							6
> 499	Br-79m	4.5	IT	4.864 s	0.72		4.7014E+04	1.5984E+05	6
> 500	Br-80	1.0	β^-:91.7;β^+:8.3	17.600 m	0.28		7.2405E+05	7.7004E+04	6
> 501	Br-80m	5.0	IT	4.410 h	0.23		6.1759E+04	2.4259E+04	6
> 502	Br-81	1.5							6
> 503	Br-82	5.0	β^-	1.472 d	0.08		1.4269E+05	2.6380E+06	6
> 504	Br-82m	2.0	β^-:2.4;IT:97.6	6.090 m	1.15		7.0088E+04	8.1810E+03	6
> 505	Br-83	1.5	β_g^-:0.09;β_m^-:99.91	2.400 h	0.83		3.2524E+05	6.8744E+03	6
> 506	Br-84	2.0	β^-	31.800 m	0.25		1.2403E+06	1.7573E+06	6
> 507	Br-84m	?	β^-	6.000 m	3.33		9.1000E+05	2.7684E+06	6
> 508	Br-85	1.5	β_g^-:0.16;β_m^-:99.84	2.900 m	2.07		1.0413E+06	6.1313E+04	6
> 509	Br-86	2.0	β^-	55.000 s	1.45		1.9680E+06	3.2322E+06	6
> 510	Br-87	1.5	β^-:97.49;β^-,n:2.51	55.700 s	0.36	3.7830E+03	1.5767E+06	3.0893E+06	6
> 511	Br-88	2.0	β^-:93.3;β^-,n:6.7	16.500 s	0.61	8.0682E+03	2.3935E+06	3.1122E+06	6
512	Kr-72	0.0	β^+	17.200 s	1.74		1.5300E+06	1.2900E+06	4
> 513	Kr-73	1.5	β^+	27.300 s	3.66		2.6187E+06	1.4784E+06	6
> 514	Kr-74	0.0	β^+	11.500 m	0.96		7.0038E+05	1.1206E+06	8

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
> 515	Kr-75	2.5	β^+	4.290 m	3.96		1.5754E+06	1.2808E+06	6
516	Kr-76	0.0	β^+	14.806 h	0.75		5.4000E+03	4.2500E+05	4
> 517	Kr-77	2.5	β^+	1.240 h	0.81		6.7859E+05	1.0384E+06	6
> 518	Kr-78	0.0	β^+,β^+	1.10E+20 y	0.00		2.8464E+06		6
> 519	Kr-79	0.5	β^+	1.460 d	0.29		2.4631E+04	2.5777E+05	6
> 520	Kr-79m	3.5	IT	50.000 s	6.00		9.0064E+04	3.9801E+04	6
> 521	Kr-80	0.0							6
> 522	Kr-81	3.5	β^+	2.10E+05 y	4.76		5.3851E+03	7.3689E+03	6
> 523	Kr-81m	0.5	β^+:~;IT:100.0	13.200 s	0.76		5.8768E+04	1.3172E+05	6
> 524	Kr-82	0.0							6
> 525	Kr-83	4.5							6
> 526	Kr-83m	0.5	IT	1.830 h	1.09		3.9097E+04	2.7668E+03	6
> 527	Kr-84	0.0							6
> 528	Kr-85	4.5	β^-	10.752 y	0.21		2.2812E+05	2.2362E+03	6
> 529	Kr-85m	0.5	IT:21.4;β^-:78.6	4.480 h	0.18		2.5423E+05	1.5740E+05	6
> 530	Kr-86	0.0							6
> 531	Kr-87	2.5	β^-	1.272 h	0.79		1.3302E+06	7.8788E+05	6
> 532	Kr-88	0.0	β^-	2.840 h	1.06		3.7139E+05	1.9498E+06	6
> 533	Kr-89	1.5	β^-	3.150 m	1.27		1.3774E+06	1.8357E+06	6
534	Kr-90	0.0	β_g^-:87.8;β_m^-:12.2	32.320 s	0.28		1.2950E+06	1.2370E+06	4
> 535	Rb-77	1.5	β^+	3.770 m	1.06		1.6871E+06	1.5163E+06	6
> 536	Rb-78	0.0	β^+	17.660 m	0.45		1.2158E+06	4.0593E+06	6
> 537	Rb-78m	4.0	β^+:90.0;IT:10.0	5.740 m	0.87		1.4491E+06	3.2116E+06	6
> 538	Rb-79	2.5	β^+	22.900 m	2.18		8.0714E+05	1.4023E+06	6
> 539	Rb-80	1.0	β^+	34.000 s	11.76		2.0335E+06	1.1838E+06	6
540	Rb-81	1.5	β^+	4.576 h	0.11		1.8600E+05	6.4600E+05	4
> 541	Rb-81m	4.5	IT:96.2;β_g^+:3.77;β_m^+:0.03	30.250 m	0.83		7.3949E+04	2.8349E+04	6
> 542	Rb-82	1.0	β^+	1.273 m	0.16		1.4116E+06	1.1083E+06	6
> 543	Rb-82m	5.0	β^+	6.472 h	0.09		7.9565E+04	2.9042E+06	6
> 544	Rb-83	2.5	β_g^+:25.0;β_m^+:75.0	86.200 d	0.12		8.6362E+03	4.9607E+05	6
> 545	Rb-84	2.0	β^-:3.2;β^+:96.8	33.500 d	1.79		1.4404E+05	8.8723E+05	6
> 546	Rb-84m	6.0	IT	20.400 m	0.49		8.0182E+04	3.8288E+05	6
> 547	Rb-85	2.5							6
> 548	Rb-86	2.0	β^+:~;β^-:100.0	18.640 d	0.11		6.5618E+05	9.3783E+04	6
> 549	Rb-86m	6.0	IT	1.017 m	0.33		9.9598E+03	5.4602E+05	6
> 550	Rb-87	1.5	β^-	4.75E+10 y	0.84		8.1700E+04		6
> 551	Rb-88	2.0	β^-	17.800 m	0.56		2.0570E+06	6.6716E+05	6
> 552	Rb-89	1.5	β^-	15.400 m	1.30		9.2924E+05	2.2342E+06	6
> 553	Rb-90	0.0	β^-	2.633 m	3.16		2.0494E+06	1.9819E+06	6
> 554	Rb-90m	3.0	IT:2.6;β^-:97.4	4.300 m	1.55		1.4030E+06	3.2406E+06	6
> 555	Rb-91	1.5	β^-	58.400 s	0.68		1.6118E+06	2.2693E+06	6
> 556	Rb-92	0.0	β^-	4.492 s	0.45		2.8748E+06	1.7497E+06	6
> 557	Rb-93	2.5	β^-:98.6;β^-,n:1.4	5.800 s	0.69	4.1493E+03	2.1177E+06	2.6024E+06	6
> 558	Rb-94	3.0	β^-:89.9;β^-,n:10.1	2.702 s	0.26	1.0053E+04	3.1015E+06	2.7474E+06	6
> 559	Sr-78	0.0	β^+	2.650 m	5.03		1.2540E+06	1.2540E+06	6
> 560	Sr-79	1.5	β^+	2.250 m	4.44		1.8949E+06	1.2018E+06	8
> 561	Sr-80	0.0	β^+	1.772 h	1.41		6.3394E+04	4.8636E+05	6
> 562	Sr-81	0.5	β_g^+:99.86;β_m^+:0.14	22.300 m	1.79		9.6509E+05	1.3762E+06	8
> 563	Sr-82	0.0	β^+	25.550 d	0.59		5.0414E+03	7.8553E+03	6
> 564	Sr-83	3.5	β^+	1.350 d	0.09		1.4899E+05	7.7622E+05	6
> 565	Sr-83m	0.5	IT	4.950 s	2.42		3.1172E+04	2.2809E+05	6
> 566	Sr-84	0.0							6
> 567	Sr-85	4.5	β^+	64.849 d	0.01		8.7249E+03	5.1868E+05	6
> 568	Sr-85m	0.5	β^+:13.4;IT:86.6	1.127 h	0.07		1.3247E+04	2.1591E+05	6
> 569	Sr-86	0.0							6
> 570	Sr-87	4.5							6
> 571	Sr-87m	0.5	β^+:0.3;IT:99.7	2.803 h	0.11		6.6544E+04	3.1954E+05	6
> 572	Sr-88	0.0							6
> 573	Sr-89	2.5	β_g^-:99.99;β_m^-:~	50.570 d	0.06		5.8462E+05	8.6908E+01	13
> 574	Sr-90	0.0	β^-	28.790 y	0.21		1.7400E+05		6
> 575	Sr-91	2.5	β_g^-:41.16;β_m^-:58.84	9.630 h	0.52		6.4753E+05	7.0716E+05	6
> 576	Sr-92	0.0	β^-	2.710 h	0.37		1.7990E+05	1.3810E+06	6
> 577	Sr-93	2.5	β_g^-:74.98;β_m^-:25.02	7.423 m	0.32		7.9458E+05	2.2183E+06	6
> 578	Sr-94	0.0	β^-	1.255 m	0.53		8.3317E+05	1.4273E+06	6
> 579	Sr-95	0.5	β^-	23.900 s	0.59		2.2080E+06	1.1181E+06	6
> 580	Sr-96	0.0	β^-	1.060 s	2.83		1.9722E+06	9.2491E+05	6
> 581	Y-81	2.5	β^+	1.173 m	1.42		1.9782E+06	1.1767E+06	6
582	Y-82	1.0	β^+	9.500 s	3.16		3.1000E+06	1.2600E+06	4
583	Y-83	4.5	β^+	7.083 m	0.94		1.3900E+06	1.4100E+06	4
584	Y-83m	0.5	β^+	2.850 m	0.70		1.3500E+06	1.1700E+06	4
> 585	Y-84	1.0	β^+	4.600 s	4.35		2.3569E+06	1.2792E+06	6

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> 586	Y-84m	5.0	β^+	40.000 m	2.50		1.2221E+06	3.9730E+06	6
587	Y-85	0.5	β^+	2.681 h	1.87		4.9700E+05	1.2760E+06	4
588	Y-85m	4.5	β^+	4.861 h	2.86		5.7200E+05	1.3540E+06	4
> 589	Y-86	4.0	β^+	14.740 h	0.14		2.1754E+05	3.5701E+06	6
> 590	Y-86m	8.0	β^+:0.69;IT:99.31	48.000 m	2.08		2.3069E+04	2.2011E+05	6
591	Y-87	0.5	β^+	3.346 d	0.38		6.7600E+03	4.5800E+05	4
> 592	Y-87m	4.5	β^+:1.57;IT:98.43	13.370 h	0.22		7.8270E+04	3.0680E+05	8
> 593	Y-88	4.0	β^+	106.629 d	0.02		6.3338E+03	2.6952E+06	6
> 594	Y-89	0.5							6
> 595	Y-89m	4.5	IT	15.663 s	0.03		7.2457E+03	9.0140E+05	6
> 596	Y-90	2.0	β^-	2.671 d	0.12		9.3382E+05	1.2366E+00	6
> 597	Y-90m	7.0	IT:100.0;β_g^-:~;β_m^-:~	3.190 h	0.31		4.5276E+04	6.3531E+05	6
> 598	Y-91	0.5	β^-	58.510 d	0.10		6.0594E+05	3.1330E+03	6
> 599	Y-91m	4.5	IT	49.710 m	0.08		2.6285E+04	5.2825E+05	6
> 600	Y-92	2.0	β^-	3.540 h	0.56		1.4370E+06	2.5160E+05	6
> 601	Y-93	0.5	β^-	10.180 h	0.79		1.1723E+06	9.5184E+04	6
> 602	Y-93m	3.5	IT	0.820 s	4.88		7.5078E+04	6.7961E+05	6
> 603	Y-94	2.0	β^-	18.700 m	0.53		1.8143E+06	7.6423E+05	6
> 604	Y-95	0.5	β^-	10.300 m	0.97		1.4365E+06	1.0920E+06	6
> 605	Y-96	0.0	β^-	5.340 s	0.94		3.2047E+06	8.0090E+04	6
> 606	Y-96m	8.0	β^-	9.620 s	1.56		1.8511E+06	4.4865E+06	6
> 607	Y-97	0.5	β^-:99.95;β^-,n:0.06	3.750 s	0.53	1.1894E+02	2.1350E+06	1.8460E+06	2
> 608	Y-97m	4.5	β^-:99.25;IT:0.7;β^-,n:0.05	1.170 s	2.56	1.4248E+02	2.3175E+06	2.1106E+06	2
+ 609	Y-97n	13.5	β_g^-:1.6;IT$_m$:98.4	0.142 s	5.63		1.2075E+05	2.8075E+06	2
> 610	Y-98	0.0	β^-:99.73;β^-,n:0.27	0.590 s	5.08	1.0395E+03	2.7799E+06	2.6134E+06	6
> 611	Y-98m	5.0	β^-:96.56;β^-,n:3.44	2.000 s	10.00	1.5758E+04	2.7882E+06	3.2944E+06	6
> 612	Zr-82	0.0	β^+	32.000 s	15.63		1.3333E+06	1.3333E+06	6
> 613	Zr-83	0.5	β_g^+:3.9;β_m^+:96.1	41.600 s	5.77		2.1006E+06	1.1875E+06	6
614	Zr-84	0.0	β^+	25.833 m	3.23		9.3332E+05	9.3000E+05	4
> 615	Zr-85	3.5	β^+	7.860 m	0.51		1.3249E+06	1.4564E+06	6
616	Zr-85m	0.5	IT	10.900 s	2.75			2.9220E+05	4
617	Zr-86	0.0	β^+	16.500 h	0.67		3.0300E+04	2.9500E+05	4
> 618	Zr-87	4.5	β_g^+:0.28;β_m^+:99.72	1.680 h	0.60		8.2564E+05	9.4114E+05	6
> 619	Zr-87m	0.5	IT	14.000 s	1.43		9.8187E+04	2.3739E+05	6
> 620	Zr-88	0.0	β^+	83.000 d	0.48		1.4026E+04	3.9191E+05	6
> 621	Zr-89	4.5	β_g^+:0.13;β_m^+:99.87	3.267 d	0.26		9.2784E+04	2.5388E+05	6
> 622	Zr-89m	0.5	β^+:6.66;IT:93.34	4.180 m	0.24		3.2738E+04	6.3804E+05	6
> 623	Zr-90	0.0							6
> 624	Zr-90m	5.0	IT	0.809 s	0.25		1.5542E+04	2.3034E+06	6
> 625	Zr-91	2.5							6
> 626	Zr-92	0.0							6
> 627	Zr-93	2.5	β_g^-:2.5;β_m^-:97.5	1.53E+06 y	6.54		1.9220E+04		6
> 628	Zr-94	0.0	β^-,β^-	6.00E+15 y	0.00		1.1436E+06		6
> 629	Zr-95	2.5	β_g^-:98.92;β_m^-:1.08	64.032 d	0.01		1.2004E+05	7.3284E+05	6
> 630	Zr-96	0.0	β^-,β^-	3.90E+19 y	23.08		3.3503E+06		6
> 631	Zr-97	0.5	β_g^-:4.95;β_m^-:95.05	16.744 h	0.07		7.0229E+05	1.5910E+05	6
> 632	Zr-98	0.0	β^-	30.700 s	1.30		9.1000E+05		6
> 633	Zr-99	0.5	β_m^-:36.8;β_g^-:63.2	2.200 s	4.55		1.5390E+06	8.4141E+05	6
634	Nb-86	5.0	β^+	1.467 m	1.14		1.9900E+06	3.7000E+06	4
+ 635	Nb-86m	?	β^+	56.000 s	14.29		2.7400E+06	2.7400E+06	6
> 636	Nb-87	0.5	β^+	3.750 m	2.40		1.7740E+06	1.2204E+06	6
> 637	Nb-87m	4.5	β^+	2.600 m	3.85		1.3895E+06	1.7671E+06	6
638	Nb-88	8.0	β^+	14.500 m	0.69		1.5000E+06	4.2500E+06	4
> 639	Nb-88m	4.0	β^+	7.780 m	0.64		1.3916E+06	4.0607E+06	8
> 640	Nb-89	4.5	β_g^+:98.77;β_m^+:1.23	2.030 h	3.45		1.1050E+06	1.3646E+06	6
> 641	Nb-89m	0.5	β_g^+:82.59;β_m^+:16.92	1.100 h	3.03		8.3617E+05	1.8623E+06	8
642	Nb-90	8.0	β^+	14.600 h	0.34		3.5000E+05	4.2100E+06	4
643	Nb-90m	4.0	IT	18.820 s	0.48		3.9400E+04	8.2400E+04	4
> 644	Nb-91	4.5	β^+	680.016 y	19.12		5.8802E+03	1.2566E+04	6
> 645	Nb-91m	0.5	IT:97.6;β^+:2.4	60.900 d	0.33		9.3459E+04	3.8033E+04	6
> 646	Nb-92	7.0	β^+	3.50E+07 y	8.57		7.9320E+03	1.5033E+06	6
> 647	Nb-92m	2.0	β^+	10.150 d	0.20		6.4474E+03	9.7038E+05	6
> 648	Nb-93	4.5							6
> 649	Nb-93m	0.5	IT	16.126 y	0.85		2.8959E+04	1.9547E+03	6
> 650	Nb-94	6.0	β^-	2.00E+04 y	12.33		1.6828E+05	1.5715E+06	6
> 651	Nb-94m	3.0	β^-:0.5;IT:99.5	6.260 m	0.16		3.5089E+04	1.2271E+04	6
> 652	Nb-95	4.5	β^-	34.991 d	0.02		4.4525E+04	7.6449E+05	6
> 653	Nb-95m	0.5	β^-:5.6;IT:94.4	3.608 d	0.92		1.7867E+05	7.0692E+04	6
> 654	Nb-96	6.0	β^-	23.350 h	0.21		2.5016E+05	2.4458E+06	3
> 655	Nb-97	4.5	β^-	1.202 h	0.97		4.6840E+05	6.6423E+05	6
> 656	Nb-97m	0.5	IT	52.700 s	3.42		1.4403E+04	7.2801E+05	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
> 657	Nb-98	1.0	β^-	2.860 s	2.10		1.9652E+06	3.2453E+05	6
> 658	Nb-98m	5.0	β^-	51.300 m	0.78		7.7136E+05	2.7821E+06	6
> 659	Nb-99	4.5	β^-	15.000 s	1.33		1.5138E+06	1.7435E+05	6
> 660	Nb-99m	0.5	β^-:98.0;IT:2.0	2.600 m	7.69		1.4155E+06	6.5041E+05	6
> 661	Nb-100	1.0	β^-	1.500 s	13.33		2.4931E+06	7.0820E+05	6
> 662	Nb-100m	4.0	β^-	2.900 s	6.90		2.0473E+06	2.0644E+06	6
> 663	Nb-101	2.5	β^-	7.100 s	4.23		1.8634E+06	2.4457E+05	6
> 664	Nb-102	1.0	β^-	1.300 s	15.38		2.4023E+06	2.4023E+06	6
> 665	Nb-102m	?	β^-	4.300 s	9.30		2.2756E+06	2.0935E+06	6
666	Nb-103	2.5	β^-:99.99;β^-,n:0.01	1.500 s	13.33		2.0970E+06	7.6600E+05	4
> 667	Nb-104	1.0	β^-:99.94;β^-,n:0.06	4.900 s	6.12	8.3806E+01	2.7018E+06	2.7018E+06	6
+ 668	Nb-104m	?	β^-:99.95;β^-,n:0.05	0.940 s	4.26	9.7338E+01	2.7754E+06	2.7754E+06	6
669	Mo-88	0.0	β^+	8.000 m	2.50		1.2000E+06	3.0570E+05	4
> 670	Mo-89	4.5	β^+	2.110 m	4.74		1.9552E+06	1.2262E+06	6
> 671	Mo-90	0.0	β^+	5.560 h	1.62		2.0062E+05	8.1818E+05	8
> 672	Mo-91	4.5	β_g^+:99.97;β_m^+:0.03	15.490 m	0.06		1.4513E+06	9.7762E+05	6
> 673	Mo-91m	0.5	β_g^+:~;β_m^+:50.0;IT:50.0	1.077 m	0.93		5.5626E+05	1.3867E+06	6
> 674	Mo-92	0.0	β^+,β^+	1.90E+20 y	0.00		1.6489E+06		6
> 675	Mo-93	2.5	β_g^+:12.0;β_m^+:88.0	4000.009 y	20.00		5.0858E+03	1.0726E+04	6
> 676	Mo-93m	10.5	β^+:0.12;IT:99.88	6.850 h	1.02		1.0722E+05	2.3175E+06	6
> 677	Mo-94	0.0							6
> 678	Mo-95	2.5							6
> 679	Mo-96	0.0							6
> 680	Mo-97	2.5							6
> 681	Mo-98	0.0	β^-,β^-	1.00E+14 y	0.00		1.1200E+05		6
> 682	Mo-99	0.5	β_g^-:11.94;β_m^-:88.06	2.748 d	0.02		3.9373E+05	1.4842E+05	6
> 683	Mo-100	0.0	β^-,β^-	9.90E+18 y	7.07		3.0340E+06		6
> 684	Mo-101	0.5	β^-	14.610 m	0.21		5.4335E+05	1.4242E+06	6
> 685	Mo-102	0.0	β^-	11.300 m	1.77		3.4909E+05	1.8452E+04	6
> 686	Mo-103	1.5	β^-	1.132 m	0.88		1.3163E+06	6.3620E+05	6
687	Mo-104	0.0	β^-	1.000 m	3.33		8.8000E+05	1.7600E+05	4
> 688	Mo-105	2.5	β^-	35.600 s	4.49		1.9220E+06	5.5149E+05	6
> 689	Tc-90	1.0	β^+	8.700 s	2.30		3.3484E+06	1.7514E+06	6
> 690	Tc-90m	8.0	β^+	49.200 s	0.81		3.0890E+06	3.0890E+06	6
> 691	Tc-91	4.5	β^+	3.140 m	0.64		1.7333E+06	2.2862E+06	8
692	Tc-91m	0.5	β^+	3.300 m	3.03		1.9800E+06	1.4800E+06	4
693	Tc-92	8.0	β^+	4.400 m	6.82		1.7600E+06	3.9300E+06	4
> 694	Tc-93	4.5	β^+	2.750 h	1.82		4.3094E+04	1.5685E+06	6
> 695	Tc-93m	0.5	β^+:23.4;IT:76.6	43.500 m	2.30		9.0772E+04	8.0772E+05	6
> 696	Tc-94	7.0	β^+	4.883 h	0.34		4.3140E+04	2.6486E+06	6
> 697	Tc-94m	2.0	β^+	52.000 m	1.92		7.5403E+05	1.9300E+06	6
> 698	Tc-95	4.5	β^+	20.000 h	0.50		6.2964E+03	7.9646E+05	6
> 699	Tc-95m	0.5	β^+:96.12;IT:3.88	61.000 d	3.28		1.4775E+04	6.8846E+05	6
> 700	Tc-96	7.0	β^+	4.280 d	1.64		5.3064E+03	2.5030E+06	6
701	Tc-96m	4.0	β^+:2.0;IT:98.0	51.500 m	1.94		9.5436E+01	4.5113E+04	5
> 702	Tc-97	4.5	β^+	2.60E+06 y	15.38		5.6534E+03	1.1679E+04	6
> 703	Tc-97m	0.5	IT	90.200 d	1.22		8.7044E+04	9.4963E+03	6
> 704	Tc-98	6.0	β^-	4.20E+06 y	7.14		1.1800E+05	1.4127E+06	6
> 705	Tc-99	4.5	β^-	2.14E+05 y	3.74		8.5402E+04	7.0399E-01	6
> 706	Tc-99m	0.5	IT:100.0;β^-:~	6.010 h	0.17		1.5492E+04	1.2654E+05	6
> 707	Tc-100	1.0	β^-	15.800 s	0.63		1.3148E+06	8.2720E+04	6
> 708	Tc-101	4.5	β^-	14.200 m	0.70		4.7858E+05	3.3593E+05	6
> 709	Tc-102	1.0	β^-	5.280 s	2.84		1.9450E+06	8.0762E+04	6
> 710	Tc-102m	?	β^-	4.350 m	1.61		7.7978E+05	2.5108E+06	6
> 711	Tc-103	2.5	β^-	54.200 s	1.48		9.8099E+05	2.4845E+05	6
> 712	Tc-104	3.0	β^-	18.300 m	1.64		1.5951E+06	1.8900E+06	6
> 713	Tc-105	1.5	β^-	7.600 m	1.32		1.3096E+06	6.6842E+05	6
> 714	Tc-106	?	β^-	36.000 s	2.78		1.9429E+06	2.1906E+06	6
> 715	Tc-107	?	β^-	21.200 s	0.94		2.0557E+06	5.1478E+05	6
716	Tc-108	3.0	β^-	5.170 s	1.35		2.2600E+06	1.4900E+06	4
> 717	Tc-109	1.5	β^-:99.92;β^-,n:0.08	0.860 s	4.65	2.1174E+02	2.1019E+06	2.1019E+06	6
718	Ru-92	0.0	β^+	3.650 m	1.37		6.1200E+05	2.1237E+06	4
> 719	Ru-93	4.5	β^+	59.700 s	1.01		2.3399E+06	1.1312E+06	6
720	Ru-93m	0.5	β^+:77.8;IT:22.2	10.800 s	2.78		1.5500E+06	1.9900E+06	4
> 721	Ru-94	0.0	β_g^+:~;β_m^+:100.0	51.800 m	1.16		5.0051E+03	5.1953E+05	6
> 722	Ru-95	2.5	β_g^+:97.39;β_m^+:2.61	1.643 h	0.85		8.1723E+04	1.2382E+06	6
> 723	Ru-96	0.0	β^+,β^+	6.70E+16 y	0.00		2.7185E+06		6
> 724	Ru-97	2.5	β_g^+:99.96;β_m^+:0.04	2.900 d	3.45		1.2328E+04	2.4071E+05	6
> 725	Ru-98	0.0							6
> 726	Ru-99	2.5							6
> 727	Ru-100	0.0							6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
> 728	Ru-101	2.5							6
> 729	Ru-102	0.0							6
> 730	Ru-103	1.5	β_g^-:1.2;β_m^-:98.8	39.260 d	0.05		6.6555E+04	4.9610E+05	6
> 731	Ru-104	0.0							6
> 732	Ru-105	1.5	β_g^-:71.61;β_m^-:28.39	4.440 h	0.45		4.1312E+05	7.3793E+05	6
> 733	Ru-106	0.0	β^-	1.020 y	0.27		1.0100E+04		6
> 734	Ru-107	2.5	β^-	3.750 m	1.33		1.0839E+06	3.4531E+05	6
735	Ru-108	0.0	β^-	4.500 m	4.44		4.6688E+05	4.6186E+04	4
> 736	Ru-109	2.5	β^-	34.500 s	1.45		1.0443E+06	1.6643E+06	6
> 737	Ru-110	0.0	β^-	11.600 s	5.17		1.1572E+06	3.4716E+04	6
> 738	Ru-111	2.5	β^-	2.120 s	3.30		1.8957E+06	1.8957E+06	6
739	Rh-95	4.5	β^+	5.017 m	1.99		8.9000E+05	2.4700E+06	4
740	Rh-95m	0.5	β^+:12.0;IT:88.0	1.960 m	2.04		1.9000E+05	8.9000E+05	4
741	Rh-96	5.0	β^+	9.900 m	1.01		8.5000E+05	3.9900E+06	4
742	Rh-96m	2.0	β^+:40.0;IT:60.0	1.510 m	1.32		6.0000E+05	1.2200E+06	4
> 743	Rh-97	4.5	β^+	30.700 m	1.95		5.2076E+05	1.3547E+06	6
> 744	Rh-97m	0.5	β^+:94.4;IT:5.6	46.200 m	3.46		1.8656E+05	2.0919E+06	6
> 745	Rh-98	2.0	β^+	8.720 m	1.38		1.3213E+06	1.7735E+06	6
746	Rh-98m	5.0	β^+	3.500 m	8.57		9.9000E+05	2.3400E+06	4
747	Rh-99	0.5	β^+	16.100 d	1.29		5.8000E+04	5.0200E+05	4
748	Rh-99m	4.5	β^+	4.694 h	2.37		3.5200E+04	6.4200E+05	4
> 749	Rh-100	1.0	β^+	20.800 h	0.48		4.5967E+04	2.7418E+06	6
750	Rh-100m	5.0	β^+:1.7;IT:98.3	4.600 m	4.35		2.9000E+03	4.6300E+04	4
> 751	Rh-101	0.5	β^+	3.300 y	9.09		2.5537E+04	2.8775E+05	6
752	Rh-101m	4.5	β^+:92.3;IT:7.7	4.340 d	0.24		1.9800E+04	3.0400E+05	4
> 753	Rh-102	6.0	β^+	2.902 y	1.42		1.2156E+04	2.1221E+06	6
> 754	Rh-102m	2.0	β^-:20.0;β^+:75.0;IT:5.0	208.000 d	1.92		1.7360E+05	4.9317E+05	6
> 755	Rh-103	0.5							6
> 756	Rh-103m	3.5	IT	56.114 m	0.00		3.5808E+04	1.6857E+03	6
> 757	Rh-104	1.0	β^-:99.55;β^+:0.45	42.300 s	0.95		9.8050E+05	1.5022E+04	6
> 758	Rh-104m	5.0	β^-:0.13;IT:99.87	4.340 m	0.69		8.6203E+04	4.5522E+04	6
> 759	Rh-105	3.5	β^-	1.473 d	0.17		1.5348E+05	7.7271E+04	6
> 760	Rh-105m	0.5	IT	40.000 s	0.00		9.2419E+04	3.4589E+04	6
> 761	Rh-106	1.0	β^-	30.000 s	0.67		1.4114E+06	2.0429E+05	6
> 762	Rh-106m	6.0	β^-	2.200 h	2.27		3.2163E+05	2.7592E+06	6
> 763	Rh-107	3.5	β^-	21.700 m	1.84		4.3209E+05	3.1186E+05	6
> 764	Rh-108	1.0	β^-	16.800 s	2.98		1.8535E+06	3.1709E+05	6
> 765	Rh-108m	5.0	β^-	6.000 m	5.00		6.2620E+05	2.6942E+06	8
> 766	Rh-109	3.5	β^-	1.333 m	2.50		9.4774E+05	2.9784E+05	8
> 767	Rh-110	4.0	β^-	28.500 s	5.26		1.1821E+06	2.5536E+06	6
> 768	Rh-110m	1.0	β^-	3.200 s	6.25		2.2662E+06	3.3596E+05	6
> 769	Rh-111	3.5	β^-	12.000 s	8.33		1.3894E+06	3.5705E+05	2
> 770	Rh-112	1.0	β^-	2.100 s	14.29		2.8730E+06	1.9235E+05	6
> 771	Rh-112m	?	β^-	6.800 s	2.94		1.9086E+06	2.2610E+06	6
> 772	Rh-113	3.5	β^-	2.800 s	4.29		1.6700E+06	1.6700E+06	6
> 773	Rh-114	1.0	β^-	1.850 s	2.70		1.9573E+06	4.0679E+05	6
774	Rh-114m	4.0	β^-	1.850 s	2.70		2.0300E+06	2.5157E+06	4
> 775	Pd-96	0.0	β_g^+:~;β_m^+:100.0	2.033 m	1.64		2.2135E+05	1.4361E+06	6
> 776	Pd-97	2.5	β_g^+:98.31;β_m^+:1.69	3.100 m	2.90		7.7000E+05	2.2050E+06	6
> 777	Pd-98	0.0	β^+	17.700 m	1.69		4.3818E+04	4.1598E+05	6
> 778	Pd-99	2.5	β_g^+:2.95;β_m^+:97.05	21.400 m	0.93		4.2432E+05	1.2605E+06	6
> 779	Pd-100	0.0	β^+	3.630 d	2.48		4.3274E+04	1.2280E+05	6
> 780	Pd-101	2.5	β_g^+:0.27;β_m^+:99.73	8.470 h	0.71		3.1172E+04	3.5093E+05	6
> 781	Pd-102	0.0							6
> 782	Pd-103	2.5	β_g^+:0.03;β_m^+:99.97	16.980 d	0.12		5.8831E+03	1.4678E+04	6
> 783	Pd-104	0.0							6
> 784	Pd-105	2.5							6
> 785	Pd-106	0.0							6
> 786	Pd-107	2.5	β^-	6.50E+06 y	4.62		9.3000E+03		6
> 787	Pd-107m	5.5	IT	21.300 s	2.35		6.2686E+04	1.5185E+05	6
> 788	Pd-108	0.0							6
> 789	Pd-109	2.5	β_g^-:0.05;β_m^-:99.95	13.701 h	0.02		3.6079E+05	6.4453E+02	6
> 790	Pd-109m	5.5	IT	4.690 m	0.21		7.6219E+04	1.1129E+05	6
> 791	Pd-110	0.0	β^-,β^-	6.00E+17 y	0.00		2.0000E+06		6
> 792	Pd-111	2.5	β_g^-:0.7;β_m^-:99.3	23.400 m	0.85		8.3188E+05	4.6250E+04	6
793	Pd-111m	5.5	β_g^-:7.5;β_m^-:19.5;IT:73.0	5.500 h	1.82		1.7330E+05	3.8293E+05	4
> 794	Pd-112	0.0	β^-	20.300 h	0.99		8.9897E+04	5.2483E+03	6
> 795	Pd-113	2.5	β_m^-:95.0;β_g^-:5.0	1.517 m	2.20		1.3302E+06	1.2755E+05	2
> 796	Pd-113m	4.5	IT	0.300 s	33.33		5.9421E+04	2.1403E+04	2
> 797	Pd-114	0.0	β^-	2.420 m	2.48		5.3276E+05	2.5886E+04	6
> 798	Pd-115	2.5	β_g^-:73.0;β_m^-:27.0	25.000 s	8.00		1.5263E+06	1.5263E+06	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
> 799	Pd-115m	5.5	β_m^-:92.0;IT$_g$:8.0	50.000 s	6.00		1.4223E+06	1.4295E+06	6
> 800	Pd-116	0.0	β^-	11.800 s	3.39		1.0035E+06	1.5711E+05	6
> 801	Pd-117	2.5	β_g^-:50.0;β_m^-:50.0	4.300 s	6.98		1.9086E+06	1.9086E+06	6
> 802	Pd-118	0.0	β_g^-:85.7;β_m^-:14.3	1.900 s	5.26		1.5624E+06	4.1590E+05	6
803	Ag-100	5.0	β^+	2.017 m	4.96		1.4600E+06	3.4100E+06	4
804	Ag-100m	2.0	β^+	2.233 m	5.97		1.5000E+06	2.5800E+06	4
> 805	Ag-101	4.5	β^+	11.100 m	2.70		8.3222E+05	1.5435E+06	6
> 806	Ag-101m	0.5	IT	3.100 s	3.23		1.1512E+05	1.5536E+05	8
> 807	Ag-102	5.0	β^+	12.900 m	2.33		9.6147E+05	2.9809E+06	6
808	Ag-102m	2.0	β^+:51.0;IT:49.0	7.667 m	6.52		4.7000E+05	1.9900E+06	4
> 809	Ag-103	3.5	β^+	1.095 h	1.07		1.8598E+05	8.3622E+05	6
810	Ag-103m	0.5	IT	5.700 s	5.26		9.5000E+04	3.7700E+04	4
811	Ag-104	5.0	β^+	1.153 h	1.45		9.0000E+04	2.7100E+06	4
812	Ag-104m	2.0	β^+:67.0;IT:33.0	33.500 m	5.97		5.1000E+05	1.2400E+06	4
> 813	Ag-105	0.5	β^+	41.300 d	0.24		1.9926E+04	5.3041E+05	6
> 814	Ag-105m	3.5	β^+:0.34;IT:99.66	7.230 m	2.21		2.5339E+04	1.2209E+03	6
> 815	Ag-106	1.0	β^-:0.5;β^+:99.5	24.000 m	0.42		5.0352E+05	7.0598E+05	6
> 816	Ag-106m	6.0	β^+	8.460 d	1.18		1.2274E+04	2.7544E+06	6
> 817	Ag-107	0.5							6
> 818	Ag-107m	3.5	IT	44.300 s	0.45		7.9179E+04	1.2728E+04	6
> 819	Ag-108	1.0	β^-:97.1;β^+:2.9	2.400 m	0.83		6.0553E+05	2.2825E+04	6
> 820	Ag-108m	6.0	β^+:91.3;IT:8.7	418.010 y	3.59		1.6041E+04	1.6301E+06	6
> 821	Ag-109	0.5							6
> 822	Ag-109m	3.5	IT	39.600 s	0.51		7.5751E+04	1.1242E+04	6
> 823	Ag-110	1.0	β^+:0.3;β^-:99.7	24.560 s	0.45		1.1812E+06	3.1338E+04	6
> 824	Ag-110m	6.0	IT:1.36;β^-:98.64	249.780 d	0.01		7.2233E+04	2.7623E+06	6
> 825	Ag-111	0.5	β^-	7.450 d	0.13		3.5089E+05	2.6483E+04	6
> 826	Ag-111m	3.5	β^-:0.5;IT:99.5	1.080 m	1.23		5.6008E+04	6.8782E+03	6
> 827	Ag-112	2.0	β^-	3.130 h	0.29		1.4192E+06	6.8362E+05	8
> 828	Ag-113	0.5	β_g^-:98.27;β_m^-:1.73	5.370 h	0.93		7.6131E+05	7.1537E+04	6
> 829	Ag-113m	3.5	IT:64.0;β^-:36.0	1.145 m	7.28		2.2114E+05	2.1231E+05	6
> 830	Ag-114	1.0	β^-	4.600 s	4.35		2.1500E+06	2.5807E+05	6
> 831	Ag-114m	4.0	IT	0.002 s	3.33		1.0188E+05	9.7116E+04	6
> 832	Ag-115	0.5	β_g^-:94.24;β_m^-:5.76	20.000 m	2.50		1.0821E+06	4.4951E+05	6
> 833	Ag-115m	3.5	β_g^-:76.7;β_m^-:2.3;IT:21.0	18.600 s	4.30		8.4406E+05	4.5499E+05	6
> 834	Ag-116	2.0	β^-	2.680 m	3.73		1.7508E+06	2.0938E+06	6
> 835	Ag-116m	5.0	β^-:94.0;IT:6.0	8.600 s	3.49		1.6612E+06	1.6882E+06	6
836	Ag-117	0.5	β_g^-:86.0;β_m^-:14.0	1.213 m	2.84		1.3067E+06	1.0924E+06	4
837	Ag-117m	3.5	β_g^-:21.5;β_m^-:78.5	5.340 s	0.94		1.5034E+06	6.4452E+05	4
838	Ag-118	0.0	β^-	3.700 s	0.00		2.5080E+06	8.9272E+05	4
839	Ag-118m	4.0	β^-:59.0;IT:41.0	2.000 s	10.00		1.2500E+06	1.5000E+06	12
840	Ag-119	3.5	β_g^-:78.99;β_m^-:21.0;β^-,n:0.01	2.100 s	4.76		1.7706E+06	1.3367E+06	4
841	Ag-119m	0.5	β_g^-:50.0;β_m^-:50.0	6.000 s	0.00		1.7589E+06	1.7589E+06	12
842	Ag-120	3.0	β^-:100.0;β^-,n:~	1.170 s	4.27		2.2838E+06	1.0766E+06	4
> 843	Ag-121	3.5	β_g^-:89.55;β_m^-:10.45	0.780 s	1.28		2.3009E+06	1.1670E+06	6
> 844	Ag-122	3.0	β^-	0.480 s	16.67		3.5667E+06	1.0807E+06	6
+ 845	Ag-122m	8.0	β^-	1.500 s	33.33		3.1933E+06	3.1933E+06	6
> 846	Cd-102	0.0	β_g^+:5.77;β_m^+:94.23	5.500 m	9.09		7.2639E+04	8.2854E+05	6
847	Cd-103	2.5	β^+	7.300 m	1.37		3.4000E+05	2.0800E+06	4
848	Cd-104	0.0	β^+	57.667 m	1.73		2.9000E+04	1.8638E+05	4
849	Cd-105	2.5	β^+	55.500 m	0.72		2.1500E+05	1.2600E+06	4
> 850	Cd-106	0.0	β^+,β^+	6.60E+18 y	0.00		2.7700E+06		6
> 851	Cd-107	2.5	β_g^+:0.06;β_m^+:99.94	6.520 h	0.31		6.2740E+03	2.1241E+04	6
> 852	Cd-108	0.0	β^+,β^+	4.10E+17 y	0.00		2.7200E+05		6
> 853	Cd-109	2.5	β_m^+	1.267 y	0.15		5.7124E+03	1.5146E+04	6
> 854	Cd-110	0.0							6
> 855	Cd-111	0.5							6
> 856	Cd-111m	5.5	IT	48.540 m	0.10		1.0541E+05	2.8419E+05	6
> 857	Cd-112	0.0							6
> 858	Cd-113	0.5	β^-	7.70E+15 y	3.90		9.3300E+04		6
> 859	Cd-113m	5.5	IT:0.14;β^-:99.86	14.100 y	3.55		1.8563E+05	7.0704E+01	6
> 860	Cd-114	0.0	β^-,β^-	6.00E+17 y	0.00		5.3600E+05		6
> 861	Cd-115	0.5	β_g^-:~;β_m^-:100.0	2.228 d	0.19		3.1866E+05	1.9254E+05	6
> 862	Cd-115m	5.5	β_g^-:99.99;β_m^-:0.01	44.600 d	0.67		6.0443E+05	3.2918E+04	6
> 863	Cd-116	0.0	β^-,β^-	3.40E+19 y	8.82		2.8040E+06		6
> 864	Cd-117	0.5	β_g^-:8.36;β_m^-:91.64	2.490 h	1.61		4.3114E+05	1.0784E+06	6
> 865	Cd-117m	5.5	β_g^-:98.48;β_m^-:1.52	3.360 h	1.49		2.0747E+05	2.0345E+06	6
> 866	Cd-118	0.0	β^-	50.300 m	0.40		1.6100E+05		6
> 867	Cd-119	1.5	β_g^-:9.72;β_m^-:90.28	2.690 m	0.74		8.1073E+05	1.4848E+06	6
> 868	Cd-119m	5.5	β_g^-:99.78;β_m^-:0.22	2.200 m	0.91		7.0003E+05	2.1621E+06	6
> 869	Cd-120	0.0	β^-	50.800 s	0.41		7.0800E+05		6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
> 870	Cd-121	1.5	β_g^-:33.68;β_m^-:66.32	13.500 s	2.22		1.2396E+06	1.7251E+06	6
> 871	Cd-121m	5.5	β^-	8.300 s	9.64		1.1906E+06	2.1240E+06	6
> 872	Cd-122	0.0	β^-	5.240 s	0.57		1.2470E+06		6
> 873	Cd-123	1.5	β_g^-:30.97;β_m^-:69.03	2.100 s	0.95		1.7294E+06	1.8835E+06	6
> 874	Cd-123m	5.5	β_g^-:98.78;β_m^-:1.22	1.820 s	1.65		1.6090E+06	2.3306E+06	6
875	Cd-124	?	β^-	1.000 s	20.00		2.0474E+06	1.1978E+05	4
> 876	Cd-125	1.5	β_g^-:47.86;β_m^-:52.14	0.650 s	3.08		2.2166E+06	1.8603E+06	6
877	In-106	7.0	β^+	6.200 m	1.61		9.2000E+05	3.5600E+06	4
878	In-106m	3.0	β^+	5.200 m	1.92		1.5500E+06	2.9500E+06	4
> 879	In-107	4.5	β^+	32.400 m	0.93		3.4701E+05	1.4979E+06	6
> 880	In-107m	0.5	IT	50.400 s	1.19		3.7316E+04	6.4073E+05	6
881	In-108	6.0	β^+	58.000 m	2.30		1.6700E+05	3.2300E+06	4
882	In-108m	3.0	β^+	39.667 m	2.10		7.0900E+05	2.7600E+06	4
> 883	In-109	4.5	β^+	4.200 h	2.38		3.1313E+04	6.3355E+05	6
> 884	In-109m	0.5	IT	1.340 m	5.22		3.6662E+04	6.1030E+05	6
> 885	In-109n	9.5	IT	0.209 s	2.87		1.7030E+04	2.0854E+06	6
> 886	In-110	7.0	β^+	4.900 h	2.04		1.0711E+04	3.0790E+06	8
> 887	In-110m	2.0	β^+	1.152 h	0.72		6.5264E+05	1.5721E+06	6
> 888	In-111	4.5	β_g^+:100.0;β_m^+:~	2.805 d	0.02		3.2509E+04	4.0593E+05	6
> 889	In-111m	0.5	IT	7.900 m	5.06		6.7837E+04	4.6964E+05	6
> 890	In-112	1.0	β^-:44.0;β^+:56.0	14.700 m	4.76		2.4521E+05	2.9019E+05	6
> 891	In-112m	4.0	IT	20.700 m	0.48		1.2220E+05	3.4564E+04	6
> 892	In-113	4.5							6
> 893	In-113m	0.5	IT	1.658 h	0.23		1.3090E+05	2.6053E+05	6
> 894	In-114	1.0	β^-:99.5;β^+:0.5	1.198 m	0.14		7.6923E+05	4.3697E+03	6
> 895	In-114m	5.0	β^+:3.5;IT:96.5	50.000 d	0.40		1.4090E+05	8.8989E+04	6
> 896	In-115	4.5	β^-	4.41E+14 y	5.67		1.5200E+05		6
> 897	In-115m	0.5	β^-:5.0;IT:95.0	4.486 h	0.09		1.7337E+05	1.6262E+05	6
> 898	In-116	1.0	β^-	14.200 s	2.11		1.3567E+06	5.2650E+03	6
> 899	In-116m	5.0	β^-	54.600 m	0.55		3.1260E+05	2.4908E+06	6
> 900	In-116n	8.0	IT_m	2.170 s	2.30		9.4116E+04	6.8171E+04	6
> 901	In-117	4.5	β_g^-:99.66;β_m^-:0.34	43.200 m	1.62		2.6406E+05	6.9422E+05	6
> 902	In-117m	0.5	IT:47.1;β^-:52.9	1.937 h	0.60		4.3358E+05	9.0933E+04	6
> 903	In-118	1.0	β^-	5.000 s	6.00		1.8794E+06	7.7825E+04	6
> 904	In-118m	5.0	β^-	4.450 m	1.12		6.0647E+05	2.7661E+06	6
905	In-118n	8.0	β_g^-:1.5;IT_m:98.5	8.500 s	3.53		1.1059E+05	7.5137E+04	4
906	In-119	4.5	β_g^-:99.07;β_m^-:0.93	2.400 m	4.17		6.1137E+05	7.6634E+05	4
907	In-119m	0.5	β^-:97.5;IT:2.5	18.000 m	1.67		1.0496E+06	1.0958E+04	10
> 908	In-120	1.0	β^-	3.080 s	2.60		2.2099E+06	2.5656E+05	6
> 909	In-120m	?	β^-	46.200 s	1.73		1.3102E+06	2.8383E+06	6
910	In-120n	8.0	β^-	46.200 s	1.73		1.3000E+06	2.8400E+06	5
> 911	In-121	4.5	β_g^-:88.67;β_m^-:11.33	23.100 s	2.60		9.8466E+05	9.2289E+05	6
> 912	In-121m	0.5	IT:1.2;β^-:98.8	3.880 m	0.00		1.5163E+06	6.4017E+04	6
> 913	In-122	1.0	β^-	1.500 s	20.00		2.5346E+06	6.3107E+05	6
> 914	In-122m	8.0	β^-	10.800 s	3.70		1.3633E+06	3.4603E+06	6
> 915	In-122n	8.0	β^-	10.800 s	3.70		1.3633E+06	3.4603E+06	6
> 916	In-123	4.5	β_g^-:7.62;β_m^-:92.38	5.980 s	1.00		1.4060E+06	1.0463E+06	6
> 917	In-123m	0.5	β_g^-:~;β_m^-:100.0	47.800 s	1.05		2.0317E+06	6.2500E+04	6
> 918	In-124	3.0	β^-	3.110 s	3.22		2.0525E+06	2.6504E+06	6
> 919	In-124m	8.0	β^-	3.700 s	5.41		1.6230E+06	3.5313E+06	6
> 920	In-125	4.5	β_g^-:16.89;β_m^-:83.11	2.360 s	1.69		1.8095E+06	1.2025E+06	6
921	In-125m	0.5	β_m^-	12.200 s	0.82		2.4193E+06	1.6809E+05	4
> 922	In-126	3.0	β^-	1.600 s	6.25		2.3992E+06	2.7639E+06	6
923	In-126m	6.0	β^-	1.450 s	15.17		1.8814E+06	4.3144E+06	5
> 924	In-127	4.5	β_g^-:38.98;β_m^-:61.02	1.090 s	0.92		2.4185E+06	1.1358E+06	6
925	In-127m	0.5	β_m^-:49.81;β_g^-:49.5;β^-,n:0.69	3.700 s	2.70	1.1000E+05	2.7420E+06	5.0120E+05	4
> 926	In-128	3.0	β^-	0.840 s	7.14		2.6431E+06	3.0170E+06	6
+ 927	In-128m	1.0	IT	0.010 s	70.00			2.4787E+05	6
+ 928	In-128n	8.0	β_m^-	0.720 s	13.89		2.4012E+06	2.4012E+06	6
929	Sn-107	?	β^+	2.900 m	1.72		1.7000E+06	1.7000E+06	4
> 930	Sn-108	0.0	β_g^+:~;β_m^+:100.0	10.300 m	0.78		3.0701E+04	6.7164E+05	6
> 931	Sn-109	2.5	β_g^+:87.22;β_m^+:12.78	18.000 m	1.11		5.6977E+04	2.3295E+06	8
> 932	Sn-110	0.0	β_m^+	4.100 h	2.44		1.4169E+04	2.9043E+05	6
> 933	Sn-111	3.5	β_g^+:99.91;β_m^+:0.09	35.300 m	1.70		1.9559E+05	4.9877E+05	8
> 934	Sn-112	0.0							6
> 935	Sn-113	0.5	β_g^+:0.01;β_m^+:99.99	115.090 d	0.03		6.2722E+03	2.3254E+04	6
> 936	Sn-113m	3.5	β^+:8.9;IT:91.1	20.900 m	2.39		5.8576E+04	1.4483E+04	6
> 937	Sn-114	0.0							6
> 938	Sn-115	0.5							6
> 939	Sn-116	0.0							6
> 940	Sn-117	0.5							6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
> 941	Sn-117m	5.5	IT	13.600 d	0.29		1.5574E+05	1.5754E+05	6
> 942	Sn-118	0.0							6
> 943	Sn-119	0.5							6
> 944	Sn-119m	5.5	IT	293.000 d	0.44		7.8261E+04	1.1361E+04	6
> 945	Sn-120	0.0							6
> 946	Sn-121	1.5	β^-	1.128 d	0.15		1.1520E+05		6
> 947	Sn-121m	5.5	β^-:22.4;IT:77.6	55.001 y	9.09		3.5326E+04	5.0957E+03	6
> 948	Sn-122	0.0							6
> 949	Sn-123	5.5	β^-	129.200 d	0.31		5.2277E+05	6.8921E+03	6
> 950	Sn-123m	1.5	β^-	40.060 m	0.02		4.7846E+05	1.4066E+05	6
> 951	Sn-124	0.0	β^-,β^-	1.00E+17 y	0.00		2.2875E+06		6
> 952	Sn-125	5.5	β^-	9.640 d	0.31		8.0335E+05	3.3355E+05	6
> 953	Sn-125m	1.5	β^-	9.520 m	0.53		8.0628E+05	3.4603E+05	6
> 954	Sn-126	0.0	β_g^-:~;β_m^-:33.07;β_n^-:66.93	2.30E+05 y	6.09		1.2209E+05	5.6653E+04	6
955	Sn-127	5.5	β^-	2.100 h	1.90		4.9003E+05	1.8572E+06	4
956	Sn-127m	1.5	β^-	4.130 m	0.73		1.0008E+06	5.6840E+05	4
> 957	Sn-128	0.0	β_g^-:100.0;β_m^-:~	59.100 m	0.85		2.5025E+05	6.0339E+05	6
> 958	Sn-128m	7.0	IT	6.500 s	7.69		7.8600E+04	2.0116E+06	6
> 959	Sn-129	1.5	β^-	2.230 m	1.35		1.0976E+06	1.3500E+06	2
> 960	Sn-129m	5.5	β_m^-:31.0;β_g^-:69.0	7.200 m	4.17		7.0553E+05	1.7075E+06	2
> 961	Sn-130	0.0	β_m^-	3.730 m	1.88		4.6210E+05	9.3756E+05	2
> 962	Sn-130m	7.0	β_m^-:16.0;β_g^-:84.0	1.700 m	5.88		1.3885E+06	8.1303E+05	2
963	Sn-131	1.5	β^-	39.000 s	5.13		8.8000E+05	2.3600E+06	4
964	Sn-131m	5.5	β^-	1.020 m	4.90		1.0980E+06	2.3910E+06	10
> 965	Sb-112	3.0	β^+	51.400 s	1.95		1.7538E+06	2.7552E+06	6
966	Sb-113	2.5	β^+	6.667 m	1.25		7.3000E+05	1.2900E+06	4
> 967	Sb-114	3.0	β^+	3.490 m	0.86		1.1521E+06	2.6320E+06	6
> 968	Sb-115	2.5	β^+	32.100 m	0.93		2.3333E+05	8.8746E+05	6
> 969	Sb-116	3.0	β^+	15.800 m	5.06		5.2170E+05	2.2873E+06	6
> 970	Sb-116m	8.0	β^+	1.005 h	1.00		2.1425E+05	3.1870E+06	6
> 971	Sb-117	2.5	β^+	2.800 h	0.36		2.8130E+04	1.8479E+05	6
> 972	Sb-118	1.0	β^+	3.600 m	2.78		8.7311E+05	8.0408E+05	6
> 973	Sb-118m	8.0	β^+	5.000 h	0.40		3.5192E+04	2.5985E+06	6
> 974	Sb-119	2.5	β^+	1.596 d	0.52		2.5972E+04	2.3418E+04	6
+ 975	Sb-119m	13.5	IT	0.850 s	10.59			2.8520E+06	6
> 976	Sb-120	1.0	β^+	15.900 m	0.63		3.0676E+05	4.6003E+05	6
> 977	Sb-120m	8.0	β^+	5.760 d	0.52		4.5054E+04	2.4623E+06	6
> 978	Sb-121	2.5							6
> 979	Sb-122	2.0	β^+:2.6;β^-:97.4	2.700 d	0.37		5.6260E+05	4.4290E+05	6
> 980	Sb-122m	8.0	IT	4.190 m	2.15		9.3057E+04	7.0525E+04	6
> 981	Sb-123	3.5							6
> 982	Sb-124	3.0	β^-	60.200 d	0.05		3.9215E+05	1.8398E+06	6
> 983	Sb-124m	5.0	β^-:25.0;IT:75.0	1.550 m	5.38		1.1407E+05	4.3754E+05	6
> 984	Sb-124n	8.0	IT_m	20.200 m	0.99		2.5771E+04	3.3800E+02	6
> 985	Sb-125	3.5	β_g^-:77.62;β_m^-:22.38	2.759 y	0.01		1.0024E+05	4.3702E+05	6
> 986	Sb-126	8.0	β^-	12.400 d	0.81		3.3671E+05	2.7771E+06	6
> 987	Sb-126m	5.0	IT:14.0;β^-:86.0	19.100 m	1.05		6.2477E+05	1.5760E+06	6
> 988	Sb-126n	3.0	IT_m	11.000 s	18.18		2.2436E+04	3.7851E+02	6
> 989	Sb-127	3.5	β_g^-:83.52;β_m^-:16.48	3.850 d	1.30		3.1290E+05	6.9207E+05	6
> 990	Sb-128	8.0	β^-	9.010 h	0.33		4.8635E+05	3.0483E+06	6
> 991	Sb-128m	5.0	β^-:96.4;IT:3.6	10.400 m	1.92		9.4479E+05	1.8815E+06	6
> 992	Sb-129	3.5	β_g^-:83.4;β_m^-:16.6	4.360 h	0.69		3.5483E+05	1.3801E+06	6
> 993	Sb-129m	9.5	β_g^-:2.0;β_m^-:83.0;IT:15.0	17.700 m	0.56		9.9886E+05	1.4780E+06	6
> 994	Sb-130	8.0	β^-	39.500 m	2.03		7.1386E+05	3.1258E+06	6
995	Sb-130m	4.0	β^-	6.300 m	3.17		9.9738E+05	2.4907E+06	4
> 996	Sb-131	3.5	β_g^-:91.99;β_m^-:8.01	23.030 m	0.17		5.7615E+05	1.7356E+06	6
> 997	Sb-132	4.0	β^-	2.790 m	1.79		1.2546E+06	2.4957E+06	6
> 998	Sb-132m	8.0	β^-	4.100 m	1.71		1.2761E+06	2.4081E+06	6
> 999	Sb-133	3.5	β_g^-:82.71;β_m^-:17.29	2.500 m	4.00		6.5710E+05	2.1836E+06	6
>1000	Te-113	3.5	β^+	1.700 m	11.76		1.6827E+06	1.8875E+06	6
>1001	Te-114	0.0	β^+	15.200 m	4.61		1.7893E+05	1.0863E+06	6
>1002	Te-115	3.5	β^+	5.800 m	3.45		6.3949E+05	2.0191E+06	6
>1003	Te-115m	0.5	β^+	6.700 m	5.97		5.0291E+05	2.0880E+06	6
>1004	Te-116	0.0	β^+	2.490 h	1.61		5.8228E+04	1.1283E+05	6
>1005	Te-117	0.5	β^+	1.033 h	3.23		2.1143E+05	1.5404E+06	6
>1006	Te-117m	5.5	IT	0.103 s	2.91		3.4215E+04	2.6504E+05	6
>1007	Te-118	0.0	β^+	6.000 d	0.33		4.9639E+03	1.9881E+04	6
>1008	Te-119	0.5	β^+	16.050 h	0.31		1.3039E+04	7.6687E+05	6
>1009	Te-119m	5.5	β^+	4.700 d	0.85		1.6540E+04	1.4979E+06	6
>1010	Te-120	0.0							6
>1011	Te-121	0.5	β^+	19.160 d	0.26		9.8405E+03	5.7747E+05	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>1012	Te-121m	5.5	β^+:11.3;IT:88.7	154.000 d	4.55		8.0090E+04	2.1695E+05	6
>1013	Te-122	0.0							6
>1014	Te-123	0.5	β^+	9.20E+16 y	0.00		2.0018E+03	2.5947E+02	6
>1015	Te-123m	5.5	IT	119.500 d	0.08		9.6043E+04	1.4766E+05	6
>1016	Te-124	0.0							6
>1017	Te-125	0.5							6
>1018	Te-125m	5.5	IT	57.400 d	0.26		1.0534E+05	3.5132E+04	6
>1019	Te-126	0.0							6
>1020	Te-127	1.5	β^-	9.350 h	0.64		2.2440E+05	4.8472E+03	6
>1021	Te-127m	5.5	IT:97.6;β^-:2.4	109.000 d	1.83		8.2138E+04	1.1580E+04	6
>1022	Te-128	0.0	β^-,β^-	2.20E+24 y	13.64		8.6720E+05		6
>1023	Te-129	1.5	β^-	1.160 h	0.29		5.4284E+05	6.2372E+04	6
>1024	Te-129m	5.5	β^-:37.0;IT:63.0	33.600 d	0.30		2.6299E+05	3.7655E+04	6
>1025	Te-130	0.0	β^-,β^-	7.90E+23 y	12.66		2.5281E+06		6
>1026	Te-131	1.5	β^-	25.000 m	0.40		7.3686E+05	4.4566E+05	6
>1027	Te-131m	5.5	IT:21.0;β^-:79.0	1.250 d	0.64		1.9323E+05	1.4565E+06	6
>1028	Te-132	0.0	β^-	3.204 d	0.41		1.0141E+05	2.3400E+05	6
>1029	Te-133	1.5	β^-	12.450 m	2.41		6.7799E+05	1.1816E+06	6
>1030	Te-133m	5.5	β^-:82.5;IT:17.5	55.400 m	0.72		3.7609E+05	1.8232E+06	6
>1031	Te-134	0.0	β^-	41.800 m	1.91		2.2483E+05	8.7728E+05	6
>1032	Te-135	3.5	β^-	19.000 s	1.05		2.4420E+06	3.8439E+05	6
1033	I-116	1.0	β^+	2.910 s	5.15		3.0200E+06	1.0552E+06	4
1034	I-117	2.5	β^+	2.300 m	4.35		6.0000E+05	1.0000E+06	4
>1035	I-118	2.0	β^+	13.700 m	3.65		2.1068E+06	1.9608E+06	6
>1036	I-118m	7.0	β^+	8.500 m	5.88		1.1483E+06	3.7008E+06	6
>1037	I-119	2.5	β_g^+:99.05;β_m^+:0.95	19.100 m	2.09		4.8288E+05	8.7804E+05	6
>1038	I-120	2.0	β^+	1.360 h	0.25		1.1677E+06	2.0991E+06	6
1039	I-120m	4.0	β^+	53.000 m	7.55		8.9900E+05	5.1100E+06	5
>1040	I-121	2.5	β_g^+:99.71;β_m^+:0.29	2.120 h	0.47		6.7160E+04	3.9660E+05	6
>1041	I-122	1.0	β^+	3.630 m	1.65		1.1066E+06	9.6159E+05	6
>1042	I-123	2.5	β^+	13.223 h	0.03		2.6207E+04	1.7190E+05	6
>1043	I-124	2.0	β^+	4.176 d	0.01		1.9242E+05	1.1111E+06	6
>1044	I-125	2.5	β^+	59.407 d	0.02		1.6478E+04	4.2243E+04	6
>1045	I-126	2.0	β^-:43.7;β^+:56.3	12.980 d	0.39		1.4382E+05	4.3563E+05	6
>1046	I-127	2.5							6
>1047	I-128	1.0	β^+:6.9;β^-:93.1	24.990 m	0.08		7.4012E+05	8.6093E+04	6
>1048	I-129	3.5	β^-	1.61E+07 y	4.35		6.2333E+04	2.4511E+04	6
>1049	I-130	5.0	β^-	12.360 h	0.08		2.7889E+05	2.1364E+06	6
1050	I-130m	2.0	β^-:16.7;IT:83.3	9.000 m	1.11		1.9023E+05	1.1903E+05	4
>1051	I-131	3.5	β_g^-:98.91;β_m^-:1.09	8.023 d	0.02		1.9243E+05	3.8154E+05	6
>1052	I-132	4.0	β^-	2.295 h	0.57		4.9676E+05	2.2547E+06	6
>1053	I-132m	8.0	IT:86.0;β^-:14.0	1.383 h	1.20		1.6274E+05	3.4482E+05	6
>1054	I-133	3.5	β_g^-:97.15;β_m^-:2.85	20.800 h	0.48		4.0886E+05	6.1152E+05	6
>1055	I-133m	9.5	IT	9.000 s	22.22		4.9083E+04	1.5814E+06	6
>1056	I-134	4.0	β^-	52.500 m	0.38		6.2319E+05	2.5232E+06	6
>1057	I-134m	8.0	IT:97.7;β_g^-:~;β_m^-:2.3	3.600 m	2.78		8.6715E+04	2.4253E+05	6
>1058	I-135	3.5	β_g^-:83.49;β_m^-:16.51	6.570 h	0.30		3.6629E+05	1.5780E+06	6
>1059	I-136	1.0	β^-	1.390 m	1.20		1.9862E+06	2.3493E+06	6
1060	I-136m	6.0	β^-	45.000 s	2.22		2.2100E+06	2.5100E+06	4
>1061	I-137	3.5	β^-:93.5;β^-,n:6.5	24.510 s	0.24	3.9379E+04	1.8618E+06	1.2196E+06	6
1062	Xe-117	2.5	β^+	1.017 m	0.00		1.2900E+04	2.9500E+05	4
1063	Xe-118	0.0	β^+	6.000 m	16.67		1.0667E+06	5.7000E+05	4
1064	Xe-119	3.5	β^+	5.800 m	5.17		1.6633E+06	1.3100E+06	4
>1065	Xe-120	0.0	β^+	40.000 m	2.50		5.0872E+04	4.2386E+05	6
>1066	Xe-121	2.5	β^+	40.100 m	0.50		5.4341E+05	1.4002E+06	6
>1067	Xe-122	0.0	β^+	20.100 h	0.50		8.6753E+03	6.8203E+04	6
>1068	Xe-123	0.5	β^+	2.080 h	0.96		1.8216E+05	6.3715E+05	6
>1069	Xe-124	0.0	β^+,β^+	2.00E+14 y	0.00		2.8644E+06		6
>1070	Xe-125	0.5	β^+	16.900 h	1.18		3.4513E+04	2.7053E+05	6
>1071	Xe-125m	4.5	IT	56.000 s	5.36		1.3639E+05	1.1606E+05	6
>1072	Xe-126	0.0							6
>1073	Xe-127	0.5	β^+	36.400 d	0.27		2.9867E+04	2.8058E+05	6
>1074	Xe-127m	4.5	IT	1.160 m	1.29		1.2874E+05	1.6848E+05	6
>1075	Xe-128	0.0							6
>1076	Xe-129	0.5							6
>1077	Xe-129m	5.5	IT	8.880 d	0.23		1.8142E+05	5.1220E+04	6
>1078	Xe-130	0.0							6
>1079	Xe-131	1.5							6
>1080	Xe-131m	5.5	IT	11.930 d	0.13		1.4237E+05	2.0075E+04	6
>1081	Xe-132	0.0							6
>1082	Xe-133	1.5	β^-	5.244 d	0.08		1.3347E+05	4.6125E+04	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>1083	Xe-133m	5.5	IT	2.188 d	0.50		1.8946E+05	4.1605E+04	6
>1084	Xe-134	0.0	β^-,β^-	1.10E+16 y	0.00		8.3000E+05		6
>1085	Xe-134m	7.0	IT	0.290 s	5.86		6.9139E+04	1.9007E+06	8
>1086	Xe-135	1.5	β^-	9.140 h	0.22		3.1498E+05	2.4823E+05	6
>1087	Xe-135m	5.5	β^-:0.6;IT:99.4	15.290 m	0.33		9.3689E+04	4.2555E+05	6
>1088	Xe-136	0.0	β^-,β^-	2.10E+20 y	0.00		2.4670E+06		6
>1089	Xe-137	3.5	β^-	3.818 m	0.34		1.6950E+06	1.9046E+05	6
>1090	Xe-138	0.0	β^-	14.080 m	0.57		6.4188E+05	1.1239E+06	6
>1091	Xe-139	1.5	β^-	39.680 s	0.35		1.8068E+06	9.6862E+05	8
>1092	Cs-122	1.0	β^+	21.200 s	0.94		2.5183E+06	1.2978E+06	6
1093	Cs-122m	8.0	β^+	4.500 m	4.44		1.4600E+06	3.1291E+06	4
1094	Cs-122n	5.0	IT	0.360 s	5.56		4.0000E+03	3.3000E+03	5
>1095	Cs-123	0.5	β^+	5.910 m	0.85		9.4245E+05	1.0675E+06	2
>1096	Cs-123m	5.5	IT	1.700 s	11.76		1.1215E+05	4.4127E+04	2
>1097	Cs-124	1.0	β^+	30.800 s	1.62		1.9163E+06	1.1137E+06	8
1098	Cs-124m	7.0	IT	6.300 s	3.17		1.0400E+05	3.0400E+05	4
>1099	Cs-125	0.5	β^+	46.700 m	0.21		3.4966E+05	6.8884E+05	6
+1100	Cs-125m	5.5	IT	0.900 s	3.33			2.6660E+05	6
>1101	Cs-126	1.0	β^+	1.640 m	1.22		1.3177E+06	1.1404E+06	6
>1102	Cs-127	0.5	β_g^+:100.0;β_m^+:~	6.250 h	1.60		2.7743E+04	4.3122E+05	6
>1103	Cs-128	1.0	β^+	3.620 m	0.55		8.7479E+05	8.9169E+05	6
>1104	Cs-129	0.5	β^+	1.342 d	0.62		1.7418E+04	2.8321E+05	6
>1105	Cs-130	1.0	β^+:98.4;β^-:1.6	29.210 m	0.14		3.8666E+05	5.0277E+05	6
>1106	Cs-130m	5.0	IT:99.84;β^+:0.16	3.460 m	1.73		1.6773E+03	1.6467E+05	6
>1107	Cs-131	2.5	β^+	9.690 d	0.21		6.3696E+03	2.3121E+04	6
>1108	Cs-132	2.0	β^-:1.8;β^+:98.2	6.530 d	0.31		1.4114E+04	7.1525E+05	6
>1109	Cs-133	3.5							6
>1110	Cs-134	4.0	β^+:~;β^-:100.0	2.065 y	0.03		1.6360E+05	1.5554E+06	6
>1111	Cs-134m	8.0	IT	2.908 h	0.10		1.1178E+05	2.7075E+04	6
>1112	Cs-135	3.5	β^-	2.30E+06 y	13.04		8.9400E+04		6
>1113	Cs-135m	9.5	IT	53.000 m	3.77		3.3705E+04	1.6005E+06	6
>1114	Cs-136	5.0	β^-	13.030 d	0.54		1.4189E+05	2.1456E+06	6
>1115	Cs-136m	8.0	β^-:50.0;IT:50.0	19.000 s	10.53		6.1667E+05	6.1667E+05	6
>1116	Cs-137	3.5	β_g^-:5.6;β_m^-:94.4	30.041 y	0.10		1.8787E+05	1.6443E+00	6
>1117	Cs-138	3.0	β^-	33.410 m	0.54		1.2455E+06	2.3550E+06	6
>1118	Cs-138m	6.0	β^-:19.0;IT:81.0	2.910 m	2.75		3.2269E+05	4.1419E+05	8
>1119	Cs-139	3.5	β^-	9.270 m	0.54		1.6399E+06	3.4456E+05	6
>1120	Cs-140	1.0	β^-	1.062 m	0.47		1.9636E+06	1.6754E+06	6
>1121	Cs-141	3.5	β^-	24.940 s	0.24		1.9352E+06	7.6962E+05	6
1122	Ba-123	?	β^+	2.700 m	14.81		1.8333E+06	3.8100E+05	4
>1123	Ba-124	0.0	β^+	11.000 m	4.55		1.6213E+05	5.5004E+05	6
1124	Ba-125	0.5	β^+	3.500 m	11.43		1.5267E+06	3.1600E+05	4
>1125	Ba-126	0.0	β^+	1.667 h	2.00		1.8127E+04	5.6512E+05	6
>1126	Ba-127	0.5	β^+	12.700 m	3.15		5.9275E+05	7.1230E+05	6
>1127	Ba-127m	3.5	IT	1.900 s	10.53			8.0330E+04	6
>1128	Ba-128	0.0	β^+	2.430 d	2.06		7.0545E+03	6.5989E+04	6
>1129	Ba-129	0.5	β^+	2.380 h	4.62		1.2727E+05	4.6647E+05	6
>1130	Ba-129m	3.5	β^+	2.140 h	2.34		6.9097E+04	1.2075E+06	6
>1131	Ba-130	0.0							6
>1132	Ba-131	0.5	β^+	11.550 d	0.43		4.6252E+04	4.5952E+05	6
>1133	Ba-131m	4.5	IT	14.600 m	1.37		1.1009E+05	7.7147E+04	6
>1134	Ba-132	0.0							6
>1135	Ba-133	0.5	β^+	10.540 y	0.09		5.3484E+04	4.0166E+05	6
>1136	Ba-133m	5.5	β^+:0.01;IT:99.99	1.592 d	0.79		2.2161E+05	6.6909E+04	6
>1137	Ba-134	0.0							6
>1138	Ba-135	1.5							6
>1139	Ba-135m	5.5	IT	1.196 d	0.70		2.0590E+05	6.1082E+04	6
>1140	Ba-136	0.0							6
>1141	Ba-136m	7.0	IT	0.308 s	0.62		1.0196E+05	1.9267E+06	6
>1142	Ba-137	1.5							6
>1143	Ba-137m	5.5	IT	2.552 m	0.04		6.0730E+04	5.9839E+05	6
>1144	Ba-138	0.0							6
>1145	Ba-139	3.5	β^-	1.384 h	0.34		8.9767E+05	4.5616E+04	6
>1146	Ba-140	0.0	β^-	12.765 d	0.12		3.1060E+05	1.8015E+05	6
>1147	Ba-141	1.5	β^-	18.270 m	0.38		9.4510E+05	8.7123E+05	6
>1148	Ba-142	0.0	β^-	10.600 m	1.89		3.9914E+05	1.0450E+06	6
>1149	Ba-143	2.5	β^-	14.500 s	2.07		1.2410E+06	1.1121E+06	8
1150	La-128	?	β^+	5.000 m	6.00		2.2100E+06	2.9000E+06	4
+1151	La-128m	?	β^+	1.400 m	0.00		2.2907E+06	2.2907E+06	6
>1152	La-129	1.5	β_g^+:92.61;β_m^+:7.39	11.600 m	1.72		6.2122E+05	9.2171E+05	6
1153	La-129m	5.5	IT	0.560 s	8.93		1.1100E+05	4.8400E+04	4

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>1154	La-130	3.0	β^+	8.700 m	1.15		1.1134E+06	2.1994E+06	6
>1155	La-131	1.5	β^+	59.000 m	3.39		2.1152E+05	6.5859E+05	6
>1156	La-132	2.0	β^+	4.800 h	4.17		5.5615E+05	1.9443E+06	6
1157	La-132m	6.0	β^+:24.0;IT:76.0	24.300 m	2.06			4.9100E+05	4
>1158	La-133	2.5	β_g^+:100.0;β_m^+:~	3.912 h	0.20		3.7584E+04	1.2747E+05	6
>1159	La-134	1.0	β^+	6.450 m	2.48		7.5802E+05	7.1609E+05	6
>1160	La-135	2.5	β_g^+:100.0;β_m^+:~	19.500 h	1.03		5.1523E+03	3.5737E+04	6
>1161	La-136	1.0	β^+	9.870 m	0.30		3.0296E+05	4.1456E+05	6
1162	La-136m	7.0	IT	0.114 s	2.63		4.2000E+04	1.5000E+05	5
>1163	La-137	3.5	β^+	6.00E+04 y	33.33		6.5521E+03	2.5590E+04	6
>1164	La-138	5.0	β^+:65.6;β^-:34.4	1.02E+11 y	0.98		3.6499E+04	1.2258E+06	6
>1165	La-139	3.5							6
>1166	La-140	3.0	β^-	1.679 d	0.01		5.3511E+05	2.3126E+06	6
>1167	La-141	3.5	β^-	3.920 h	0.77		9.6252E+05	2.6780E+04	6
>1168	La-142	2.0	β^-	1.518 h	0.55		8.6822E+05	2.3247E+06	6
>1169	La-143	3.5	β^-	14.140 m	1.13		1.2369E+06	2.5229E+05	6
>1170	La-144	3.0	β^-	40.800 s	0.98		1.3823E+06	2.3299E+06	6
>1171	La-145	2.5	β^-	24.800 s	8.06		1.4991E+06	6.2387E+05	6
>1172	La-146	2.0	β^-	6.270 s	1.59		2.3452E+06	1.1947E+06	6
1173	La-146m	6.0	β^-	10.000 s	1.00		2.1740E+06	1.3238E+06	4
>1174	La-147	2.5	β^-	4.015 s	0.20		2.0586E+06	1.8373E+05	6
>1175	Ce-129	2.5	β_g^+:50.0;β_m^+:50.0	3.500 m	14.29		1.6510E+06	1.6510E+06	6
>1176	Ce-130	0.0	β^+	22.900 m	2.18		2.5375E+04	4.9286E+05	6
1177	Ce-131	3.5	β^+	10.000 m	10.00		9.7000E+03	7.3856E+05	5
1178	Ce-131m	0.5	β^+	5.000 m	20.00		1.3403E+06	1.8422E+05	5
>1179	Ce-132	0.0	β^+	3.510 h	3.13		1.4904E+04	2.7219E+05	6
>1180	Ce-133	0.5	β^+	1.617 h	4.12		3.4871E+05	4.5620E+05	6
>1181	Ce-133m	4.5	β^+	4.900 h	8.16		6.1527E+04	1.6710E+06	8
>1182	Ce-134	0.0	β^+	3.160 d	1.27		5.4257E+03	2.7980E+04	6
>1183	Ce-135	0.5	β^+	17.700 h	1.69		2.7274E+04	8.2195E+05	6
>1184	Ce-135m	5.5	IT	20.000 s	5.00		1.5677E+05	2.9173E+05	6
>1185	Ce-136	0.0	β^+,β^+	7.00E+13 y	0.00		2.4189E+06		6
>1186	Ce-137	1.5	β^+	9.000 h	3.33		1.2469E+04	3.8087E+04	6
>1187	Ce-137m	5.5	β^+:0.78;IT:99.22	1.433 d	0.87		2.0275E+05	5.5436E+04	6
>1188	Ce-138	0.0							6
>1189	Ce-139	1.5	β^+	137.641 d	0.01		3.2207E+04	1.6054E+05	6
>1190	Ce-139m	5.5	IT	56.100 s	1.07		5.5095E+04	6.9912E+05	6
>1191	Ce-140	0.0							6
>1192	Ce-141	3.5	β^-	32.500 d	0.03		1.6841E+05	7.6511E+04	6
>1193	Ce-142	0.0	β^-,β^-	5.00E+16 y	0.00		1.4171E+06		6
>1194	Ce-143	1.5	β^-	1.379 d	0.15		4.2889E+05	2.7899E+05	6
>1195	Ce-144	0.0	β_g^-:98.62;β_m^-:1.38	285.000 d	0.07		9.1232E+04	1.9053E+04	6
>1196	Ce-145	1.5	β^-	2.950 m	2.03		7.6259E+05	6.0103E+05	6
>1197	Ce-146	0.0	β^-	13.520 m	0.96		2.4264E+05	3.1744E+05	8
>1198	Ce-147	2.5	β^-	57.000 s	3.51		1.2820E+06	1.7416E+05	6
1199	Ce-148	0.0	β^-	56.000 s	1.79		6.3000E+05	3.0300E+05	4
>1200	Ce-149	1.5	β^-	5.300 s	3.77		1.8182E+06	8.4561E+04	2
>1201	Pr-134	2.0	β^+	17.000 m	11.76		1.1921E+06	2.0665E+06	6
1202	Pr-134m	5.0	β^+	11.000 m	45.45		2.0337E+06	2.0337E+06	10
1203	Pr-135	1.5	β^+	24.000 m	8.33		6.1000E+05	8.9000E+05	4
>1204	Pr-136	2.0	β^+	13.100 m	0.76		7.5352E+05	2.0652E+06	6
>1205	Pr-137	2.5	β^+	1.280 h	1.56		1.9297E+05	3.6387E+05	6
>1206	Pr-138	1.0	β^+	1.450 m	3.45		1.1610E+06	8.1500E+05	6
>1207	Pr-138m	7.0	β^+	2.120 h	1.89		2.2267E+05	2.4426E+06	6
>1208	Pr-139	2.5	β_g^+:99.98;β_m^+:0.02	4.410 h	0.91		4.6206E+04	1.2942E+05	6
>1209	Pr-140	1.0	β^+	3.390 m	0.29		5.4654E+05	5.4251E+05	6
>1210	Pr-141	2.5							6
>1211	Pr-142	2.0	β^+:0.02;β^-:99.98	19.120 h	0.21		8.0931E+05	5.8105E+04	6
1212	Pr-142m	5.0	IT	14.600 m	3.42			3.6830E+03	4
>1213	Pr-143	3.5	β^-	13.560 d	0.07		3.1460E+05	8.9038E-03	6
>1214	Pr-144	0.0	β^-	17.280 m	0.12		1.2006E+06	3.3763E+04	6
>1215	Pr-144m	3.0	IT:99.93;β^-:0.07	6.900 m	10.14		4.7168E+04	1.3662E+04	6
>1216	Pr-145	3.5	β^-	5.984 h	0.17		6.5734E+05	1.8575E+04	8
>1217	Pr-146	2.0	β^-	24.150 m	0.75		1.3169E+06	9.8741E+05	6
1218	Pr-147	0.0	β^-	13.600 m	3.68		7.6000E+05	8.4000E+05	4
>1219	Pr-148	1.0	β^-	2.290 m	0.87		1.6792E+06	9.3772E+05	6
>1220	Pr-148m	4.0	β^-	2.020 m	4.46		1.7009E+06	9.3677E+05	6
>1221	Pr-149	2.5	β^-	2.260 m	3.10		1.2855E+06	3.0492E+05	6
>1222	Pr-150	1.0	β^-	6.100 s	6.56		2.2302E+06	5.5420E+05	6
1223	Pr-151	0.5	β^-	18.900 s	0.37		1.4730E+06	6.5500E+05	4
1224	Nd-135	4.5	β^+	12.333 m	5.41		9.8000E+05	1.2700E+06	4

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>1225	Nd-135m	0.5	β^+:99.97;IT:0.03	5.500 m	9.09		1.5952E+06	1.5952E+06	6
>1226	Nd-136	0.0	β^+	50.650 m	0.65		6.0932E+04	2.8042E+05	6
1227	Nd-137	0.5	β^+	38.500 m	3.90		2.5400E+05	1.1664E+06	4
>1228	Nd-137m	5.5	IT	1.600 s	9.37		1.4200E+05	3.6982E+05	8
>1229	Nd-138	0.0	β^+	5.040 h	1.79		6.3270E+03	4.2862E+04	8
>1230	Nd-139	1.5	β^+	29.700 m	1.68		2.0745E+05	4.2109E+05	6
1231	Nd-139m	5.5	β^+:88.2;IT:11.8	5.500 h	4.04		1.1300E+07	1.5800E+06	4
>1232	Nd-140	0.0	β^+	3.370 d	0.59		6.7347E+03	2.7727E+04	6
>1233	Nd-141	1.5	β^+	2.490 h	1.20		1.4156E+04	7.5155E+04	6
>1234	Nd-141m	5.5	β^+:5.0;IT:99.95	1.033 m	1.29		6.0697E+04	8.1454E+05	8
>1235	Nd-142	0.0							6
>1236	Nd-143	3.5							6
>1237	Nd-144	0.0	α	2.29E+15 y	6.99	1.9052E+06			6
>1238	Nd-145	3.5							6
>1239	Nd-146	0.0							6
>1240	Nd-147	2.5	β^-	10.980 d	0.09		2.6903E+05	1.3762E+05	6
>1241	Nd-148	0.0	β^-,β^-	2.70E+18 y	0.00		1.9288E+06		6
>1242	Nd-149	2.5	β^-	1.728 h	0.06		5.0209E+05	3.7004E+05	6
>1243	Nd-150	0.0	β^-,β^-	2.10E+19 y	23.81		3.3675E+06		6
>1244	Nd-151	1.5	β^-	12.440 m	0.56		6.0736E+05	8.4279E+05	6
>1245	Nd-152	0.0	β^-	11.400 m	1.75		3.3006E+05	1.6423E+05	8
>1246	Nd-153	1.5	β^-	31.600 s	3.16		1.1120E+06	1.1120E+06	6
>1247	Nd-154	0.0	β^-	25.900 s	0.77		8.9751E+05	4.5896E+05	8
1248	Pm-135	5.5	β^+	49.000 s	14.29		2.0000E+06	2.6585E+06	4
>1249	Pm-135m	5.5	β^+	40.000 s	7.50		2.0947E+06	2.0947E+06	6
1250	Pm-136	2.0	β^+	1.783 m	5.61		1.1200E+05	2.6300E+06	12
>1251	Pm-136m	2.0	β^+	47.000 s	4.26		2.7597E+06	2.7597E+06	6
>1252	Pm-137	2.5	β_g^+:50.0;β_m^+:50.0	2.000 m	0.00		1.7491E+06	1.7491E+06	6
+1253	Pm-137m	5.5	β_g^+:37.42;β_m^+:62.58	2.400 m	4.17		1.7873E+06	1.7873E+06	6
1254	Pm-138	1.0	β^+	10.000 s	20.00		2.6300E+06	9.5754E+05	4
1255	Pm-138m	3.0	β^+	3.233 m	1.55		9.1000E+03	2.4200E+06	12
>1256	Pm-139	2.5	β^+	4.150 m	1.20		1.0697E+06	9.3996E+05	6
>1257	Pm-139m	5.5	IT	0.180 s	11.11		1.0066E+05	8.5190E+04	6
>1258	Pm-140	1.0	β^+	9.200 s	2.17		2.0343E+06	9.8369E+05	6
>1259	Pm-140m	7.0	β^+	5.950 m	0.84		9.7935E+05	2.9631E+06	6
>1260	Pm-141	2.5	β_g^+:99.84;β_m^+:0.16	20.900 m	0.24		6.3144E+05	7.4914E+05	6
>1261	Pm-142	1.0	β^+	40.500 s	1.23		1.3678E+06	8.6901E+05	6
>1262	Pm-143	2.5	β^+	266.000 d	3.01		8.1138E+03	3.1582E+05	6
>1263	Pm-144	5.0	β^+	363.000 d	3.86		1.6773E+04	1.5556E+06	6
>1264	Pm-145	2.5	β^+:100.0;α:~	17.700 y	2.26	6.5020E-03	1.2201E+04	3.1528E+04	6
>1265	Pm-146	3.0	β^-:34.0;β^+:66.0	5.531 y	0.89		9.4413E+04	7.5429E+05	6
>1266	Pm-147	3.5	β^-	2.623 y	0.01		6.1960E+04	4.3750E+00	6
>1267	Pm-148	1.0	β^-	5.368 d	0.15		7.2630E+05	5.7649E+05	6
>1268	Pm-148m	6.0	β^-:95.0;IT:5.0	41.050 d	0.34		1.7105E+05	1.9836E+06	6
>1269	Pm-149	3.5	β^-	2.212 d	0.09		3.6613E+05	1.1857E+04	6
>1270	Pm-150	1.0	β^-	2.680 h	0.75		7.3419E+05	1.4499E+06	6
>1271	Pm-151	2.5	β^-	1.183 d	0.14		3.0317E+05	3.2672E+05	6
>1272	Pm-152	1.0	β^-	4.120 m	1.94		1.3260E+06	2.8516E+05	6
>1273	Pm-152m	4.0	β^-	7.520 m	1.06		9.1586E+05	1.4757E+06	6
>1274	Pm-152n	8.0	β^-	14.400 m	4.86		7.2841E+05	2.1608E+06	6
>1275	Pm-153	2.5	β^-	5.250 m	0.38		6.8576E+05	7.3394E+04	6
1276	Pm-154	0.0	β^-	1.700 m	11.76		8.8445E+05	1.7925E+06	4
1277	Pm-154m	3.0	β^-	2.700 m	3.70		8.9759E+05	1.8530E+06	4
>1278	Pm-155	2.5	β^-	41.500 s	0.48		1.0611E+06	5.6166E+05	2
>1279	Pm-156	4.0	β^-	26.700 s	0.37		1.7167E+06	1.7167E+06	6
>1280	Pm-157	2.5	β^-	10.560 s	0.95		1.4533E+06	1.4533E+06	6
>1281	Sm-136	0.0	β^+	47.000 s	4.26		1.0124E+06	9.1169E+05	6
>1282	Sm-137	4.5	β_m^+	45.000 s	2.22		1.9543E+06	1.9543E+06	6
>1283	Sm-137m	0.5	β^+	20.000 s	0.00		2.0743E+06	2.0743E+06	6
>1284	Sm-138	0.0	β_m^+	3.100 m	6.45		1.1373E+06	1.1373E+06	6
>1285	Sm-139	0.5	β^+	2.570 m	3.89		1.0914E+06	1.4587E+06	6
1286	Sm-139m	5.5	β^+:6.3;IT:93.7	10.700 s	5.61		1.5400E+05	2.6300E+05	4
1287	Sm-140	0.0	β^+	14.817 m	0.67		2.3000E+05	6.0000E+05	4
>1288	Sm-141	0.5	β^+	10.200 m	1.96		6.8574E+05	1.3849E+06	6
1289	Sm-141m	5.5	β^+:99.69;IT:0.31	22.600 m	0.88		3.4900E+05	1.9100E+06	4
>1290	Sm-142	0.0	β^+	1.208 h	0.07		3.2659E+04	8.9283E+04	6
>1291	Sm-143	1.5	β^+	8.750 m	0.91		4.7766E+05	5.1271E+05	6
>1292	Sm-143m	5.5	β^+:0.24;IT:99.76	1.100 m	3.03		7.0252E+04	6.8376E+05	8
>1293	Sm-144	0.0							6
>1294	Sm-145	3.5	β^+	340.000 d	0.88		2.9495E+04	6.2987E+04	6
>1295	Sm-146	0.0	α	1.00E+08 y	8.00	2.5705E+06			6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>1296	Sm-147	3.5	α	1.06E+11 y	1.89	2.3110E+06			6
>1297	Sm-148	0.0	α	8.00E+15 y	25.00	1.9861E+06			6
>1298	Sm-149	3.5	α	2.00E+15 y	0.00	1.8697E+06			6
>1299	Sm-150	0.0							6
>1300	Sm-151	2.5	β^-	90.002 y	6.67		1.9873E+04	1.4325E+01	6
>1301	Sm-152	0.0							6
>1302	Sm-153	1.5	β^-	1.928 d	0.01		2.6747E+05	6.2329E+04	6
>1303	Sm-154	0.0							6
>1304	Sm-155	1.5	β^-	22.300 m	0.90		5.6821E+05	1.0257E+05	6
>1305	Sm-156	0.0	β^-	9.400 h	2.13		2.1850E+05	1.1490E+05	6
1306	Sm-157	1.5	β^-	8.067 m	1.65		1.2000E+04	5.3200E+05	4
1307	Sm-158	0.0	β^-	5.517 m	1.81		4.7943E+05	3.3000E+05	4
>1308	Sm-159	2.5	β^-	11.370 s	1.32		1.4062E+06	4.3060E+05	6
1309	Eu-138	7.0	β^+	12.100 s	4.96		3.0666E+06	3.0666E+06	4
1310	Eu-139	5.5	β^+	17.900 s	3.35		2.2000E+06	1.6200E+06	4
>1311	Eu-140	1.0	β^+	1.510 s	1.32		3.1563E+06	1.2617E+06	6
>1312	Eu-141	2.5	β_g^+:98.23;β_m^+:1.77	40.700 s	1.72		1.8605E+06	1.0590E+06	6
1313	Eu-141m	5.5	β^+:67.0;IT:33.0	2.700 s	11.11		1.3020E+06	6.2000E+05	4
>1314	Eu-142	1.0	β^+	2.340 s	5.13		2.7537E+06	1.1965E+06	6
>1315	Eu-142m	8.0	β^+	1.223 m	0.65		1.7731E+06	3.4162E+06	6
>1316	Eu-143	2.5	β_g^+:99.88;β_m^+:0.12	2.590 m	0.77		1.2951E+06	1.0997E+06	6
>1317	Eu-144	1.0	β^+	10.200 s	0.98		2.0571E+06	1.0896E+06	6
>1318	Eu-145	2.5	β^+	5.930 d	0.67		2.2801E+04	1.2781E+06	6
>1319	Eu-146	4.0	β^+	4.590 d	0.65		4.2277E+04	2.3757E+06	6
>1320	Eu-147	2.5	α:~;β^+:100.0	24.000 d	4.17	6.3976E+01	3.4480E+04	4.3852E+05	6
>1321	Eu-148	5.0	β^+	54.500 d	0.92		1.9105E+04	2.2268E+06	6
>1322	Eu-149	2.5	β^+	93.100 d	0.43		2.4141E+04	6.6020E+04	6
>1323	Eu-150	5.0	β^+	36.359 y	1.96		2.7212E+04	1.5280E+06	6
>1324	Eu-150m	0.0	β^-:88.0;β^+:12.0	12.800 h	1.56		3.0729E+05	5.0219E+04	6
>1325	Eu-151	2.5							6
>1326	Eu-152	3.0	β^+:72.1;β^-:27.9	13.525 y	0.10		1.2484E+05	1.1610E+06	6
>1327	Eu-152m	0.0	β^-:72.0;β^+:28.0	9.275 h	0.10		5.0195E+05	3.1109E+05	6
>1328	Eu-152n	8.0	IT	1.600 h	3.13		7.2264E+04	7.5506E+04	6
>1329	Eu-153	2.5							6
>1330	Eu-154	3.0	β^-:99.98;β^+:0.02	8.593 y	0.04		2.7446E+05	1.2453E+06	6
>1331	Eu-154m	8.0	IT	46.400 m	1.08		8.2497E+04	7.4358E+04	6
>1332	Eu-155	2.5	β^-	4.753 y	0.29		6.2958E+04	6.1290E+04	6
>1333	Eu-156	0.0	β^-	15.190 d	0.53		4.5406E+05	1.2301E+06	6
>1334	Eu-157	2.5	β^-	15.180 h	0.20		3.9277E+05	2.8988E+05	6
>1335	Eu-158	1.0	β^-	45.900 m	0.44		8.8443E+05	1.2708E+06	6
>1336	Eu-159	2.5	β^-	18.100 m	0.55		9.0013E+05	2.8748E+05	6
>1337	Eu-160	1.0	β^-	38.000 s	10.53		1.5262E+06	1.5262E+06	6
>1338	Eu-161	2.5	β^-	26.000 s	11.54		1.2442E+06	1.2442E+06	6
>1339	Eu-162	?	β^-	10.600 s	9.43		1.8790E+06	1.8790E+06	6
>1340	Eu-163	2.5	β^-	6.000 s	0.00		1.6200E+06	1.6200E+06	6
>1341	Gd-139	4.5	β^+	5.700 s	7.02		2.6227E+06	2.6227E+06	6
+1342	Gd-139m	0.5	β^+	4.800 s	18.75		2.7060E+06	2.7060E+06	6
>1343	Gd-140	0.0	β^+	15.800 s	2.53		1.7360E+06	1.7360E+06	6
>1344	Gd-141	0.5	β^+	14.000 s	28.57		2.3651E+06	1.3138E+06	6
>1345	Gd-141m	5.5	β_m^+:89.0;IT_g:11.0	24.500 s	2.04		2.0720E+06	2.1136E+06	6
>1346	Gd-142	0.0	β^+	1.170 m	0.85		3.5467E+03	4.8500E+05	6
>1347	Gd-143	0.5	β^+	39.000 s	5.13		1.8125E+06	1.2209E+06	6
>1348	Gd-143m	5.5	β^+	1.833 m	1.27		1.2510E+06	2.0940E+06	6
1349	Gd-144	0.0	β^+	4.500 m	2.22		1.2333E+06	1.2333E+06	4
>1350	Gd-145	0.5	β^+	23.000 m	1.74		3.4411E+05	2.4282E+06	6
1351	Gd-145m	5.5	β^+:5.7;IT:94.3	1.417 m	3.53		1.8400E+05	6.7300E+05	4
>1352	Gd-146	0.0	β^+	48.270 d	0.21		1.2168E+05	2.5443E+05	6
1353	Gd-147	3.5	β^+	1.588 d	0.29		5.2000E+04	1.2500E+06	4
>1354	Gd-148	0.0	α	74.602 y	4.02	3.2713E+06			6
>1355	Gd-149	3.5	β^+	9.280 d	1.08		6.4847E+04	5.2897E+05	6
>1356	Gd-150	0.0	α	1.82E+06 y	9.34	2.7967E+06			6
>1357	Gd-151	3.5	β^+:100.0;α:~	124.000 d	0.81	2.6708E-02	3.8833E+04	7.0400E+04	6
>1358	Gd-152	0.0	α	1.08E+14 y	7.41	2.2046E+06			6
>1359	Gd-153	1.5	β^+	240.400 d	0.42		3.9835E+04	1.0552E+05	6
>1360	Gd-154	0.0							6
>1361	Gd-155	1.5							6
>1362	Gd-156	0.0							6
>1363	Gd-157	1.5							6
>1364	Gd-158	0.0							6
>1365	Gd-159	1.5	β^-	18.479 h	0.02		3.0859E+05	5.6693E+04	6
>1366	Gd-160	0.0	β^-,β^-	1.30E+17 y	0.00		1.7295E+06		6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>1367	Gd-161	2.5	β^-	3.660 m	1.37		5.8610E+05	3.9269E+05	6
>1368	Gd-162	0.0	β^-	8.400 m	2.38		3.3956E+05	4.1682E+05	6
>1369	Gd-163	2.5	β^-	1.133 m	4.41		1.0643E+06	4.9040E+05	2
>1370	Gd-164	0.0	β^-	45.000 s	6.67		7.7667E+05	7.7667E+05	6
>1371	Gd-165	0.5	β^-	10.300 s	15.53		1.3967E+06	1.3967E+06	6
>1372	Tb-144	1.0	β^+	1.000 s	0.00			2.8773E+05	6
1373	Tb-144m	6.0	β^+:34.0;IT:66.0	4.250 s	3.53		2.4900E+03	6.5670E+05	4
>1374	Tb-145	1.5	β^+	20.000 m	0.00		2.3490E+06	2.3490E+06	6
1375	Tb-145m	5.5	β^+	29.500 s	5.08		1.0300E+06	2.2500E+06	12
>1376	Tb-146	1.0	β^+	8.000 s	50.00		2.9943E+06	1.3658E+06	2
>1377	Tb-146m	5.0	β^+	24.000 s	2.08		1.4544E+06	4.0972E+06	2
>1378	Tb-147	0.5	β^+	1.700 h	5.88		2.5777E+05	1.9169E+06	6
>1379	Tb-147m	5.5	β^+	1.830 m	3.28			1.5661E+06	6
>1380	Tb-148	2.0	β^+	1.000 h	1.67		8.3965E+05	2.1857E+06	6
1381	Tb-148m	9.0	β^+	2.200 m	2.27		2.7900E+05	2.9000E+06	4
>1382	Tb-149	0.5	α:16.7;β^+:83.3	4.118 h	0.61	6.8100E+05	8.3519E+04	1.3585E+06	6
>1383	Tb-149m	5.5	β^+:99.98;α:0.02	4.160 m	0.96	8.7978E+02	1.7309E+05	1.0691E+06	6
1384	Tb-150	2.0	β^+:95.0;α:5.0	3.472 h	4.80	1.7460E+05	4.0000E+05	2.0200E+06	4
1385	Tb-150m	9.0	β^+	5.800 m	3.45		1.4500E+04	2.3700E+06	5
>1386	Tb-151	0.5	α:~;β^+:100.0	17.609 h	0.08	3.2416E+02	7.5947E+04	9.8810E+05	6
1387	Tb-151m	5.5	β^+:6.6;IT:93.4	25.000 s	12.00		1.2000E+03	7.8000E+04	4
>1388	Tb-152	2.0	β^+	17.500 h	0.57		2.1065E+05	1.3913E+06	6
1389	Tb-152m	8.0	β^+:21.1;IT:78.9	4.300 m	4.65		1.3000E+05	7.5000E+05	4
>1390	Tb-153	2.5	β^+	2.340 d	0.43		4.2271E+04	3.2160E+05	6
1391	Tb-154	0.0	β^+	21.500 h	1.94		3.2000E+04	2.2100E+06	4
1392	Tb-154m	3.0	β^+:78.2;IT:21.8	9.000 h	5.56		4.6000E+04	1.2900E+06	4
1393	Tb-154n	7.0	β^+:98.2;IT:1.8	22.694 h	2.20		9.4000E+04	2.0600E+06	4
>1394	Tb-155	1.5	β^+	5.320 d	1.13		3.8345E+04	1.7659E+05	6
>1395	Tb-156	3.0	β^+	5.170 d	2.32		8.4601E+04	1.9354E+06	6
>1396	Tb-156m	7.0	IT	1.017 d	4.10		2.2064E+04	3.7589E+04	6
>1397	Tb-156n	0.0	β^+:0.19;IT:99.81	5.100 h	5.88		8.4062E+04	4.7432E+03	6
>1398	Tb-157	1.5	β^+	99.002 y	10.10		5.6996E+03	1.0394E+04	6
>1399	Tb-158	3.0	β^-:16.8;β^+:83.2	180.000 y	6.11		1.1173E+05	8.1370E+05	3
>1400	Tb-158m	0.0	IT	10.800 s	1.85		8.5927E+04	2.4203E+04	3
>1401	Tb-159	1.5							6
>1402	Tb-160	3.0	β^-	72.300 d	0.28		2.5728E+05	1.1297E+06	3
>1403	Tb-161	1.5	β^-	6.890 d	0.44		2.0074E+05	3.3762E+04	6
>1404	Tb-162	1.0	β^-	7.600 m	1.97		5.3956E+05	1.1059E+06	6
>1405	Tb-163	1.5	β^-	19.500 m	1.54		3.6225E+05	7.8594E+05	6
1406	Tb-164	5.0	β^-	3.000 m	3.33		7.0000E+04	2.3400E+06	4
>1407	Tb-165	1.5	β^-	2.110 m	4.74		9.1156E+05	6.4184E+05	6
>1408	Tb-166	?	β^-	25.600 s	8.59		1.6100E+06	1.6100E+06	6
>1409	Tb-167	1.5	β^-	19.000 s	15.79		1.3667E+06	1.3667E+06	6
>1410	Tb-168	4.0	β^-	8.200 s	15.85		2.0200E+06	2.0200E+06	6
>1411	Dy-147	0.5	β^+:99.95;β^+,p:0.05	40.000 s	25.00	5.7700E+02	2.1875E+06	2.1875E+06	6
1412	Dy-147m	5.5	β^+:60.0;IT:40.0	59.000 s	5.08		2.5560E+06	1.1660E+06	4
>1413	Dy-148	0.0	β^+	3.300 m	6.06		2.5707E+04	7.1751E+05	6
>1414	Dy-149	3.5	β^+	4.200 m	3.33		1.0311E+05	1.6130E+06	6
1415	Dy-150	0.0	β^+:64.0;α:36.0	7.170 m	0.28	1.3969E+06	1.9000E+03	2.5400E+05	4
1416	Dy-151	3.5	β^+:94.4;α:5.6	17.900 m	1.68	2.2775E+05	7.5000E+04	1.3500E+06	4
>1417	Dy-152	0.0	α:0.1;β^+:99.9	2.380 h	0.84	3.6280E+03	1.0299E+04	2.8654E+05	6
>1418	Dy-153	3.5	α:~;β^+:100.0	6.400 h	1.56	3.2561E+02	8.0936E+04	7.0890E+05	6
>1419	Dy-154	0.0	α	3.00E+06 y	50.00	2.9467E+06			6
>1420	Dy-155	1.5	β^+	9.900 h	2.02		2.3624E+04	6.0539E+05	6
>1421	Dy-156	0.0	α:50.0;β^+,β^+:50.0	1.00E+18 y	0.00	8.7965E+05	1.0061E+06		6
>1422	Dy-157	1.5	β^+	8.140 h	0.61		1.3286E+04	3.5036E+05	6
>1423	Dy-158	0.0							6
>1424	Dy-159	1.5	β^+	144.400 d	0.14		1.2822E+04	4.5509E+04	6
>1425	Dy-160	0.0							6
>1426	Dy-161	2.5							6
>1427	Dy-162	0.0							6
>1428	Dy-163	2.5							6
>1429	Dy-164	0.0							6
>1430	Dy-165	3.5	β^-	2.334 h	0.26		4.4796E+05	2.6281E+04	6
1431	Dy-165m	0.5	β^-:2.4;IT:97.6	1.258 m	0.48		1.0533E+05	1.9360E+04	4
1432	Dy-166	0.0	β^-	3.400 d	0.12		1.5589E+05	3.9681E+04	4
>1433	Dy-167	0.5	β^-	6.200 m	1.29		7.0627E+05	5.2371E+05	6
>1434	Dy-168	0.0	β^-	8.700 m	3.45		5.0333E+05	5.0333E+05	6
>1435	Dy-169	2.5	β^-	39.000 s	20.51		1.0677E+06	1.0677E+06	6
>1436	Dy-170	0.0	β_m^-	30.000 s	0.00		8.2667E+05	8.2667E+05	6
>1437	Dy-171	3.5	β^-	6.000 s	0.00		1.4700E+06	1.4700E+06	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
1438	Ho-152	2.0	β^+:88.0;α:12.0	2.697 m	0.19	5.2830E+05	3.4100E+05	1.6500E+06	4
1439	Ho-152m	9.0	β^+:89.2;α:10.8	49.500 s	0.61	4.8200E+05	5.0710E+05	3.3700E+06	4
>1440	Ho-153	5.5	α:0.05;β^+:99.95	2.010 m	1.49	1.9941E+03	5.2711E+05	9.1474E+05	6
1441	Ho-153m	0.5	β^+:99.82;α:0.18	9.333 m	5.36	7.2200E+03	2.4800E+05	1.5500E+06	4
1442	Ho-154	2.0	β^+:99.98;α:0.02	11.833 m	4.23	7.4800E+02	1.5800E+04	1.1500E+06	5
1443	Ho-154m	8.0	β^+:99.98;α:0.02	3.250 m	3.08	3.7210E+01	3.2000E+04	1.9900E+06	4
>1444	Ho-155	2.5	β^+	48.000 m	4.17		2.0845E+05	4.4547E+05	6
1445	Ho-156	5.0	β^+	56.000 m	1.79		6.2800E+04	1.4040E+06	4
+1446	Ho-156m	1.0	IT:50.0;β^+:50.0	9.500 s	15.79		8.7207E+05	8.9827E+05	6
+1447	Ho-156n	9.0	β^+:75.0;IT:25.0	7.800 m	3.85		1.3200E+06	1.3450E+06	6
1448	Ho-157	3.5	β^+	12.600 m	1.59		4.7100E+04	4.6300E+05	4
1449	Ho-158	5.0	β^+	11.000 m	3.64		1.4067E+06	1.4067E+06	10
1450	Ho-158m	2.0	IT	27.000 m	7.41			1.2500E+02	4
1451	Ho-158n	9.0	β^+	21.333 m	10.94		5.5000E+03	2.7357E+06	4
>1452	Ho-159	3.5	β^+	33.050 m	0.33		5.1167E+04	3.8059E+05	6
>1453	Ho-159m	0.5	IT	8.300 s	0.96		1.0361E+05	1.0004E+05	6
>1454	Ho-160	5.0	β^+	25.300 m	2.77		7.0342E+04	1.7135E+06	6
>1455	Ho-160m	2.0	IT:65.0;β^+:35.0	5.000 h	2.00		8.1668E+04	6.4978E+05	6
>1456	Ho-160n	9.0	IT	2.900 s	6.90		9.3875E+04	1.0568E+05	6
>1457	Ho-161	3.5	β^+	2.480 h	4.84		3.3441E+04	5.8169E+04	6
>1458	Ho-161m	0.5	IT	6.770 s	0.89		1.0719E+05	1.0368E+05	6
>1459	Ho-162	1.0	β^+	15.000 m	6.67		5.6755E+04	1.6414E+05	6
1460	Ho-162m	6.0	β^+:37.0;IT:63.0	1.117 h	1.49		6.0000E+03	5.8000E+05	4
>1461	Ho-163	3.5	β^+	4570.090 y	0.46		2.6500E+03	1.0534E-03	6
>1462	Ho-163m	0.5	IT	1.100 s	6.36		6.1236E+04	2.3653E+05	6
>1463	Ho-164	1.0	β^-:51.7;β^+:48.3	28.600 m	2.10		1.8426E+05	2.8159E+04	6
>1464	Ho-164m	6.0	IT	37.600 m	1.33		9.1905E+04	4.8025E+04	6
>1465	Ho-165	3.5							6
>1466	Ho-166	0.0	β^-	1.117 d	0.07		6.9475E+05	3.0211E+04	6
>1467	Ho-166m	7.0	β^-	1200.000 y	16.67		1.4106E+05	1.6272E+06	6
>1468	Ho-167	3.5	β_g^-:88.05;β_m^-:11.95	3.100 h	3.23		2.2689E+05	3.6301E+05	6
>1469	Ho-168	3.0	β^-	2.990 m	2.34		8.0094E+05	8.6327E+05	6
+1470	Ho-168m	6.0	IT:99.5;β^-:0.5	2.200 m	3.03		4.9762E+03	6.3681E+04	6
1471	Ho-169	3.5	β^-	4.400 m	4.55		6.0300E+05	4.8100E+05	4
>1472	Ho-170	6.0	β^-	2.780 m	5.04		8.3608E+05	1.8346E+06	6
>1473	Ho-170m	1.0	β^-	43.000 s	4.65		1.3653E+06	6.7937E+05	6
>1474	Ho-171	3.5	β^-	53.000 s	3.77		1.0683E+06	1.0683E+06	6
>1475	Ho-172	?	β^-	25.000 s	12.00		1.6963E+06	1.6963E+06	6
>1476	Ho-173	3.5	β^-	10.000 s	0.00		1.5167E+06	1.5167E+06	6
>1477	Er-153	3.5	α:53.0;β^+:47.0	37.100 s	0.54	2.5439E+06	1.3285E+03	3.2268E+05	6
>1478	Er-154	0.0	α:0.47;β^+:99.53	3.730 m	2.41	1.9590E+04	3.1833E+04	7.5961E+04	6
1479	Er-155	3.5	β^+:99.98;α:0.02	5.300 m	5.66	8.8260E+02	2.8200E+05	1.7200E+06	4
>1480	Er-156	0.0	β_g^+:4.59;β_m^+:95.41	19.500 m	5.13		6.9797E+04	5.7248E+04	6
1481	Er-157	1.5	β^+	18.650 m	0.54		2.4000E+04	3.1300E+05	4
1482	Er-158	0.0	β^+	2.250 h	3.70		1.1000E+05	1.2960E+05	4
>1483	Er-159	1.5	β_g^+:76.43;β_m^+:23.57	36.000 m	2.78		6.8040E+04	7.4123E+05	6
>1484	Er-160	0.0	β_m^+	1.191 d	0.31		9.9128E+03	3.6249E+04	8
1485	Er-161	1.5	β^+	3.211 h	0.95		6.6866E+05	8.8000E+05	4
>1486	Er-162	0.0	α:50.0;β^+,β^+:50.0	1.40E+14 y	0.00	8.2205E+05	9.2190E+05		6
>1487	Er-163	2.5	β_g^+:99.98;β_m^+:0.02	1.250 h	0.53		5.2704E+03	4.0180E+04	6
>1488	Er-164	0.0							6
>1489	Er-165	2.5	β^+	10.360 h	0.39		5.1780E+03	3.7827E+04	6
>1490	Er-166	0.0							6
>1491	Er-167	3.5							6
>1492	Er-167m	0.5	IT	2.269 s	0.26		1.1126E+05	9.6570E+04	2
>1493	Er-168	0.0							6
>1494	Er-169	0.5	β^-	9.400 d	0.21		1.0179E+05	1.9807E+01	6
>1495	Er-170	0.0							6
>1496	Er-171	2.5	β^-	7.516 h	0.03		4.1642E+05	3.7258E+05	6
>1497	Er-172	0.0	β^-	2.054 d	0.61		1.2872E+05	5.1568E+05	6
>1498	Er-173	3.5	β^-	1.400 m	7.14		6.9753E+05	8.3033E+05	6
>1499	Er-174	0.0	β^-	3.200 m	6.25		6.4000E+05	6.4000E+05	6
>1500	Er-175	4.5	β^-	1.200 m	25.00		1.2233E+06	1.2233E+06	6
>1501	Tm-158	2.0	β^+	3.980 m	1.51		1.5569E+06	1.5551E+06	6
1502	Tm-159	2.5	β^+	9.150 m	2.00		1.3300E+06	1.3333E+06	4
1503	Tm-160	1.0	β^+	9.400 m	3.19		1.8667E+06	1.1100E+06	4
>1504	Tm-160m	5.0	IT:85.0;β^+:15.0	1.242 m	2.01		2.9140E+05	3.5090E+05	6
1505	Tm-161	3.5	β^+	38.000 m	10.53		1.0343E+06	8.9917E+05	4
+1506	Tm-161m	0.5	β^+:50.0;IT:50.0	5.000 m	0.00		5.5290E+05	5.5660E+05	6
1507	Tm-162	1.0	β^+	21.700 m	0.92		1.3100E+05	1.6390E+06	4
1508	Tm-162m	5.0	β^+:18.0;IT:82.0	24.300 s	7.00		8.0000E+04	3.0000E+05	4

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
1509	Tm-163	0.5	β^+	1.810 h	0.28		6.2600E+04	1.2930E+06	4
>1510	Tm-164	1.0	β^+	2.000 m	5.00		5.4398E+05	7.1760E+05	6
>1511	Tm-164m	6.0	IT:80.0;β^+:20.0	5.100 m	1.96		2.7147E+05	2.7947E+05	6
>1512	Tm-165	0.5	β^+	1.253 d	0.10		5.5952E+04	5.4640E+05	6
>1513	Tm-166	2.0	β^+	7.700 h	0.39		8.1154E+04	1.9558E+06	6
>1514	Tm-167	0.5	β_g^+:2.38;β_m^+:97.62	9.250 d	0.22		1.8077E+04	5.0306E+04	8
>1515	Tm-168	3.0	β^+:99.99;β^-:0.01	93.100 d	0.21		7.7901E+04	1.2422E+06	8
>1516	Tm-169	0.5							6
>1517	Tm-170	1.0	β^+:0.13;β^-:99.87	128.600 d	0.23		3.2753E+05	4.1851E+03	6
>1518	Tm-171	0.5	β^-	1.917 y	0.71		2.5558E+04	6.8211E+02	3
>1519	Tm-172	2.0	β^-	2.650 d	0.31		5.2771E+05	4.8050E+05	3
>1520	Tm-173	0.5	β^-	8.240 h	0.97		3.0971E+05	3.8837E+05	6
>1521	Tm-174	4.0	β^-	5.400 m	1.85		5.1393E+05	1.7787E+06	6
1522	Tm-175	0.5	β^-	15.167 m	3.30		4.2600E+05	1.1650E+06	4
1523	Tm-176	4.0	β^-	1.900 m	5.26		8.4000E+05	1.7060E+06	4
>1524	Tm-177	3.5	β_m^-	1.500 m	6.67		1.0626E+06	1.0626E+06	6
>1525	Tm-178	?	β^-	30.000 s	0.00		1.8593E+06	1.8593E+06	6
>1526	Tm-179	0.5	β^-	20.000 s	0.00		1.6067E+06	1.6067E+06	6
1527	Yb-159	?	β^+	1.400 m	14.29		1.5333E+06	4.7100E+05	4
>1528	Yb-160	0.0	β^+	4.800 m	4.17		5.7671E+04	2.7064E+05	6
1529	Yb-161	1.5	β^+	4.200 m	4.76		1.4267E+06	9.4000E+05	4
>1530	Yb-162	0.0	β^+	18.870 m	1.01		3.1518E+04	2.3568E+05	6
1531	Yb-163	1.5	β^+	11.050 m	2.26		4.5000E+05	7.1000E+05	4
>1532	Yb-164	0.0	β^+	1.263 h	2.24		6.0271E+03	5.2122E+04	6
1533	Yb-165	2.5	β^+	9.900 m	3.03		1.4800E+05	3.3600E+05	4
>1534	Yb-166	0.0	β^+	2.363 d	0.18		3.6272E+04	8.4862E+04	8
1535	Yb-167	2.5	β^+	17.500 m	1.14		7.4200E+04	2.7400E+05	4
>1536	Yb-168	0.0	α:50.0;β^+,β^+:50.0	1.30E+14 y	0.00	9.7505E+05	7.1085E+05		6
>1537	Yb-169	3.5	β^+	32.018 d	0.02		1.1180E+05	3.1326E+05	6
1538	Yb-169m	0.5	IT	46.000 s	4.35		2.4200E+04	9.0977E-02	4
>1539	Yb-170	0.0							6
>1540	Yb-171	0.5							6
>1541	Yb-172	0.0							6
>1542	Yb-173	2.5							6
>1543	Yb-174	0.0							6
>1544	Yb-175	3.5	β^-	4.185 d	0.02		1.2164E+05	7.9937E+04	6
>1545	Yb-176	0.0							6
1546	Yb-176m	8.0	IT	11.400 s	4.39		1.5000E+05	9.0000E+05	4
>1547	Yb-177	4.5	β^-	1.911 h	0.16		4.2600E+05	1.9913E+05	6
>1548	Yb-177m	0.5	IT	6.410 s	0.31		1.7821E+05	1.5004E+05	6
1549	Yb-178	0.0	β^-	1.233 h	4.05		2.1000E+05	6.1660E+05	4
>1550	Yb-179	0.5	β^-	8.000 m	5.00		5.6905E+05	8.9014E+05	8
>1551	Yb-180	0.0	β_m^-	2.400 m	20.83		7.5870E+05	7.5870E+05	6
>1552	Yb-181	1.5	β^-	1.000 m	0.00		1.2967E+06	1.2967E+06	6
1553	Lu-162	1.0	β^+	1.370 m	1.46		2.3633E+06	1.3800E+06	4
+1554	Lu-162m	4.0	β^+	1.500 m	0.00		2.3707E+06	2.3707E+06	6
+1555	Lu-162n	?	β^+	1.900 m	0.00		2.4307E+06	2.4307E+06	6
1556	Lu-163	0.5	β^+	3.967 m	3.36		1.3000E+06	4.1600E+06	4
1557	Lu-164	?	β^+	3.140 m	0.96		5.1000E+04	9.3000E+05	4
1558	Lu-165	3.5	β^+	10.733 m	0.93		3.5200E+05	1.3053E+06	4
1559	Lu-166	6.0	β^+	2.650 m	3.77		3.3300E+05	2.1500E+06	4
1560	Lu-166m	3.0	β^+:58.0;IT:42.0	1.417 m	7.06		4.7000E+04	8.7000E+05	4
1561	Lu-166n	0.0	β^+	2.117 m	4.72		4.7900E+05	2.1000E+06	4
1562	Lu-167	3.5	β^+	51.500 m	1.94		1.0233E+06	9.2400E+05	4
+1563	Lu-167m	0.5	IT:50.0;β^+:50.0	1.000 m	0.00		5.1567E+05	5.1567E+05	6
1564	Lu-168	6.0	β^+	5.500 m	1.82		2.7100E+05	4.4000E+06	4
1565	Lu-168m	3.0	β^+	6.700 m	5.97		1.7600E+05	2.2700E+06	4
1566	Lu-169	3.5	β^+	1.419 d	0.15		4.1000E+04	1.2140E+06	4
1567	Lu-169m	0.5	IT	2.667 m	6.25		2.1800E+04	1.4200E+03	4
1568	Lu-170	0.0	β^+	2.002 d	1.73		5.3000E+04	2.5200E+06	4
1569	Lu-170m	4.0	IT	0.670 s	14.93		7.6200E+04	3.6000E+03	4
>1570	Lu-171	3.5	β^+	8.250 d	0.36		8.8330E+04	6.4130E+05	6
>1571	Lu-171m	0.5	IT	1.300 m	2.56		6.9435E+04	1.7866E+03	6
>1572	Lu-172	4.0	β^+	6.700 d	0.15		1.1138E+05	1.9552E+06	6
>1573	Lu-172m	1.0	IT	3.700 m	13.51		4.0205E+04	1.6674E+03	6
>1574	Lu-173	3.5	β^+	1.336 y	2.66		4.6178E+04	1.7016E+05	6
>1575	Lu-174	1.0	β^+	3.559 y	11.54		4.4819E+04	1.1667E+05	6
>1576	Lu-174m	6.0	β^+:0.58;IT:99.42	142.000 d	2.11		1.1685E+05	6.1667E+04	6
>1577	Lu-175	3.5							6
>1578	Lu-176	7.0	β^-	4.00E+10 y	5.50		2.9823E+05	4.7994E+05	6
>1579	Lu-176m	1.0	β^+:0.1;β^-:99.91	3.635 h	0.33		4.6625E+05	1.4229E+04	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>1580	Lu-177	3.5	β^-	6.647 d	0.60		1.4734E+05	3.3432E+04	6
>1581	Lu-177m	11.5	β_m^-:77.4;IT_g:22.6	160.300 d	0.25		8.2076E+04	1.6777E+05	6
+1582	Lu-177n	19.5	β_n^-:50.0;IT_m:50.0	7.000 m	28.57		2.7676E+05	1.7417E+06	6
>1583	Lu-178	1.0	β^-	28.400 m	0.70		7.5548E+05	1.2319E+05	6
1584	Lu-178m	9.0	β^-	23.100 m	1.30		4.9000E+05	1.0520E+06	4
>1585	Lu-179	3.5	β^-	4.590 h	1.31		4.8622E+05	2.9424E+04	6
>1586	Lu-180	3.0	β^-	5.700 m	1.75		5.9184E+05	1.4525E+06	6
+1587	Lu-180m	3.0	β^-:50.0;IT:50.0	1.000 s	0.00		5.1872E+05	5.2567E+05	6
1588	Lu-181	3.5	β^-	3.500 m	8.57		8.9000E+04	5.6000E+05	4
1589	Lu-182	?	β^-	2.000 m	10.00		1.5900E+05	2.0600E+06	4
>1590	Lu-183	3.5	β^-	58.000 s	6.90		1.1228E+06	6.5139E+05	6
>1591	Lu-184	3.0	β_g^-:50.0;β_m^-:50.0	20.000 s	15.00		1.4846E+06	1.4846E+06	6
1592	Hf-163	?	β^+	40.000 s	1.50		3.1000E+05	7.3000E+05	4
>1593	Hf-164	0.0	β^+	1.850 m	7.21		9.4000E+05	9.4000E+05	6
1594	Hf-165	5.5	β^+	1.700 m	5.88		1.5767E+06	3.9120E+05	4
1595	Hf-166	0.0	β^+	6.767 m	4.43		6.3200E+04	2.8200E+05	4
1596	Hf-167	2.5	β^+	2.050 m	2.44		5.8770E+05	6.8279E+05	4
>1597	Hf-168	0.0	β_m^+	25.950 m	0.77		4.9300E+05	4.9300E+05	6
1598	Hf-169	2.5	β^+	3.240 m	1.23		5.0000E+05	1.1000E+06	4
1599	Hf-170	0.0	β^+	16.000 h	0.87		6.7500E+04	4.9545E+05	4
1600	Hf-171	3.5	β^+	12.111 h	3.44		1.3400E+06	7.9999E+05	4
+1601	Hf-171m	0.5	IT	29.500 s	3.05			2.1930E+04	6
>1602	Hf-172	0.0	β_g^+:~;β_m^+:100.0	1.870 y	1.60		6.8655E+04	1.0931E+05	6
>1603	Hf-173	0.5	β^+	23.900 h	1.26		5.2050E+04	3.9661E+05	6
>1604	Hf-174	0.0	α	2.00E+15 y	20.00	2.5036E+06			6
>1605	Hf-175	2.5	β^+	70.000 d	1.43		4.5512E+04	3.6299E+05	6
>1606	Hf-176	0.0							6
>1607	Hf-177	3.5							6
>1608	Hf-177m	11.5	IT	1.080 s	5.56		2.4072E+05	1.0680E+06	6
>1609	Hf-177n	18.5	IT_m	51.400 m	0.97		2.5154E+05	1.1773E+06	6
>1610	Hf-178	0.0							6
>1611	Hf-178m	8.0	IT	4.000 s	7.50		1.4152E+05	1.0059E+06	6
>1612	Hf-178n	16.0	IT_m	31.001 y	3.23		7.3620E+04	1.2231E+06	6
>1613	Hf-179	4.5							6
>1614	Hf-179m	0.5	IT	18.670 s	0.16		1.3408E+05	2.4074E+05	3
>1615	Hf-179n	12.5	IT	25.100 d	0.80		1.8634E+05	9.1903E+05	3
>1616	Hf-180	0.0							6
>1617	Hf-180m	8.0	β_m^-:0.31;IT_g:99.69	5.500 h	1.82		1.4858E+05	9.9243E+05	6
>1618	Hf-181	0.5	β^-	42.380 d	0.14		2.0439E+05	5.3054E+05	6
>1619	Hf-182	0.0	β^-	9.00E+06 y	22.22		3.2149E+04	2.3938E+05	6
>1620	Hf-182m	8.0	β_g^-:35.2;β_m^-:14.1;β_n^-:8.7;IT:42.0	1.025 h	2.44		2.2568E+05	9.0051E+05	8
>1621	Hf-183	1.5	β^-	1.067 h	1.59		4.2427E+05	7.5731E+05	8
>1622	Hf-184	0.0	β^-	4.120 h	1.21		4.6267E+05	2.3651E+05	8
>1623	Hf-184m	8.0	β^-	48.000 s	20.83		8.7113E+05	8.7113E+05	6
>1624	Hf-185	1.5	β^-	3.500 m	17.14		1.0120E+06	1.0120E+06	6
>1625	Hf-186	0.0	β^-	2.600 m	46.15		7.2667E+05	7.2667E+05	6
>1626	Hf-187	1.5	β^-	30.000 s	0.00		1.2633E+06	1.2633E+06	6
>1627	Ta-170	3.0	β^+	6.760 m	0.89		1.5979E+06	1.0561E+06	6
1628	Ta-171	2.5	β^+	23.300 m	1.29		1.3000E+05	1.9000E+06	4
>1629	Ta-172	3.0	β^+	36.800 m	0.82		4.2429E+05	1.7316E+06	6
>1630	Ta-173	2.5	β^+	3.140 h	4.14		1.2468E+05	4.0934E+05	6
>1631	Ta-174	3.0	β^+	1.140 h	7.02		3.6153E+05	8.3733E+05	6
1632	Ta-175	3.5	β^+	10.500 h	2.12		4.7600E+04	8.4189E+05	4
>1633	Ta-176	1.0	β^+	8.090 h	0.62		7.0094E+04	2.0985E+06	6
>1634	Ta-177	3.5	β^+	2.350 d	0.89		2.2724E+04	6.7752E+04	6
>1635	Ta-178	1.0	β^+	9.290 m	0.43		2.7476E+04	1.1886E+05	6
1636	Ta-178m	7.0	β^+	2.361 h	3.53		1.5260E+05	1.1540E+06	4
>1637	Ta-179	3.5	β^+	1.610 y	1.70		7.3952E+03	2.9246E+04	6
>1638	Ta-180	1.0	β^-:18.1;β^+:81.9	8.080 h	0.62		6.4058E+04	4.5930E+04	6
>1639	Ta-180m	9.0	β^-:20.0;β^+:80.0	1.80E+15 y	33.33		1.2585E+05	5.6252E+05	6
>1640	Ta-181	3.5							6
>1641	Ta-182	3.0	β^-	114.700 d	0.35		2.1634E+05	1.2833E+06	6
>1642	Ta-182m	5.0	IT	0.283 s	1.06		1.4319E+04	1.9174E+03	6
>1643	Ta-182n	10.0	IT_m	15.840 m	0.63		2.4438E+05	2.5464E+05	6
>1644	Ta-183	3.5	β_g^-:96.6;β_m^-:3.4	5.090 d	1.38		3.4936E+05	2.8664E+05	6
>1645	Ta-184	5.0	β^-	8.700 h	1.15		5.6876E+05	1.5683E+06	8
>1646	Ta-185	3.5	β^-	49.000 m	4.08		7.3407E+05	1.3739E+05	6
>1647	Ta-186	?	β^-	10.500 m	2.86		1.1231E+06	1.3030E+06	8
>1648	Ta-187	3.5	β^-	2.000 m	0.00		1.0449E+06	1.0449E+06	6
>1649	Ta-188	?	β^-	20.000 s	0.00		1.6190E+06	1.6190E+06	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>1650	Ta-189	3.5	β^-	3.000 s	0.00		1.2167E+06	1.2167E+06	6
>1651	Ta-190	?	β^-	0.300 s	0.00		1.8800E+06	1.8800E+06	6
>1652	W-171	2.5	β^+	2.380 m	1.68		1.5447E+06	1.5447E+06	6
1653	W-172	0.0	β^+	6.667 m	15.00		1.1600E+05	7.9000E+05	4
>1654	W-173	2.5	β^+	7.600 m	2.63		1.2233E+06	1.2233E+06	6
1655	W-174	3.0	β^+	29.333 m	3.41		5.6666E+05	5.6666E+05	4
>1656	W-175	0.5	β^+	35.200 m	1.70		9.2533E+05	9.2533E+05	6
>1657	W-176	0.0	β^+	2.500 h	4.00		5.7297E+04	1.7153E+05	6
>1658	W-177	0.5	β^+	2.200 h	1.52		8.1868E+04	8.1530E+05	6
>1659	W-178	0.0	β^+	21.600 d	1.39		6.9949E+03	1.9164E+04	6
>1660	W-179	3.5	β^+	37.050 m	0.43		1.2879E+04	5.4048E+04	6
1661	W-179m	0.5	β^+:0.28;IT:99.72	6.400 m	1.56		1.5800E+05	2.0900E+04	4
>1662	W-180	0.0							6
>1663	W-181	4.5	β^+	120.980 d	0.10		1.2682E+04	4.1206E+04	6
>1664	W-182	0.0							6
>1665	W-183	0.5	α_g:33.4;α_m:33.3;α_n:33.3	1.10E+17 y	0.00	1.1869E+06			6
>1666	W-183m	5.5	IT	5.250 s	1.33		1.8399E+05	1.2539E+05	6
>1667	W-184	0.0	α	4.00E+17 y	0.00	1.6562E+06			6
>1668	W-185	1.5	β^-	75.100 d	0.40		1.2680E+05	5.0160E+01	6
>1669	W-185m	5.5	IT	1.667 m	2.00		1.7199E+05	2.5739E+04	6
>1670	W-186	0.0	β^-,β^-:50.0;α:50.0	5.90E+17 y	0.00	5.6230E+05	2.4500E+05		6
>1671	W-187	1.5	β^-	23.850 h	0.34		3.0126E+05	4.4210E+05	6
>1672	W-188	0.0	β^-	69.780 d	0.07		9.9590E+04	1.9133E+03	3
1673	W-189	1.5	β^-	11.500 m	2.61		8.3333E+05	1.2300E+06	4
>1674	W-190	0.0	β^-	30.000 m	5.00		4.6693E+05	1.4982E+05	6
>1675	W-191	1.5	β^-	20.000 s	0.00		1.0797E+06	1.0797E+06	6
>1676	W-192	0.0	β^-	10.000 s	0.00		6.8667E+05	6.8667E+05	6
1677	W-193	?	β^-	1.700 m	49.02		1.1870E+06	1.1870E+06	10
1678	W-194	?	β^-	24.430 s	204.67		1.0200E+06	1.0200E+06	12
1679	Re-174	?	β^+	2.300 m	4.35		2.1667E+06	5.0000E+05	4
>1680	Re-175	2.5	β^+	5.890 m	0.85		1.4483E+06	1.4483E+06	6
>1681	Re-176	3.0	β^+	5.300 m	5.66		1.0883E+06	1.0510E+06	6
1682	Re-177	2.5	β^+	14.000 m	7.14		3.1200E+05	5.7233E+05	4
>1683	Re-178	3.0	β^+	13.200 m	1.52		5.5696E+05	1.2312E+06	8
1684	Re-179	2.5	β^+	19.500 m	0.51		5.5900E+04	1.0740E+06	4
>1685	Re-180	1.0	β^+	2.440 m	2.46		1.3350E+05	1.1473E+06	6
>1686	Re-181	2.5	β^+	19.900 h	3.52		1.2715E+05	7.8718E+05	6
>1687	Re-182	7.0	β^+	2.667 d	0.78		1.8963E+05	1.7955E+06	6
>1688	Re-182m	2.0	β^+	12.700 h	1.57		8.2111E+04	1.2062E+06	6
>1689	Re-183	2.5	β_g^+:99.58;β_m^+:0.42	70.000 d	2.00		9.6394E+04	1.5357E+05	8
>1690	Re-184	3.0	β^+	37.900 d	1.32		5.4717E+04	9.0564E+05	3
>1691	Re-184m	8.0	β^+:25.2;IT:74.8	168.000 d	4.76		1.4048E+05	3.9015E+05	3
>1692	Re-185	2.5							6
>1693	Re-186	1.0	β^+:6.9;β^-:93.1	3.775 d	0.19		3.3726E+05	2.0305E+04	6
1694	Re-186m	8.0	IT	2.00E+05 y	25.40		6.8200E+04	6.0000E+04	4
>1695	Re-187	2.5	β^-	4.35E+10 y	2.99		6.6000E+02		6
>1696	Re-188	1.0	β^-	16.980 h	0.12		7.8020E+05	5.7881E+04	6
1697	Re-188m	6.0	IT	18.600 m	0.54		8.2000E+04	7.4000E+04	4
>1698	Re-189	2.5	β_g^-:89.72;β_m^-:10.28	1.013 d	1.65		3.3098E+05	5.5547E+04	6
>1699	Re-190	2.0	β^-	3.100 m	9.68		6.9792E+05	1.3405E+06	6
1700	Re-190m	6.0	β^-:54.5;IT:45.5	3.194 h	6.96		2.9500E+05	9.2200E+05	4
>1701	Re-191	1.5	β^-	9.700 m	4.12		7.2698E+05	2.2291E+03	6
>1702	Re-192	1.0	β^-	6.200 s	12.90		1.6379E+06	1.5906E+05	6
>1703	Re-193	2.5	β^-	30.000 s	0.00		1.0309E+06	1.0309E+06	6
>1704	Re-194	?	β^-	2.000 s	0.00		1.6276E+06	1.6276E+06	6
1705	Re-195	?	β^-	10.200 s	49.02		1.1900E+06	1.1900E+06	10
1706	Re-196	?	β^-	3.970 s	10.08		1.8767E+06	1.8767E+06	12
1707	Re-197	?	β^-	4.870 s	10.27		1.4767E+06	1.4767E+06	12
1708	Re-198	?	β^-	2.280 s	13.16		2.1267E+06	2.1267E+06	12
>1709	Os-175	2.5	β^+	1.400 m	7.14		1.7277E+06	1.7277E+06	6
1710	Os-176	0.0	β^+	3.000 m	27.78		9.6666E+05	9.6666E+05	4
>1711	Os-177	0.5	β^+	3.000 m	6.67		1.4397E+06	1.4397E+06	6
>1712	Os-178	0.0	β^+	5.000 m	8.00		7.0233E+05	7.0233E+05	6
1713	Os-179	0.5	β^+	6.500 m	4.62		1.2033E+06	1.2033E+06	4
>1714	Os-180	0.0	β^+	21.500 m	1.86		2.3824E+04	1.3678E+05	6
1715	Os-181	3.5	β^+	2.700 m	3.70		7.2000E+04	3.7400E+05	4
1716	Os-181m	0.5	β^+	1.750 h	2.86		8.4000E+04	1.3800E+06	4
>1717	Os-182	0.0	β^+	22.100 h	1.13		4.8070E+04	4.3113E+05	6
1718	Os-183	4.5	β^+	13.000 h	3.85		7.2600E+04	6.3200E+05	4
1719	Os-183m	0.5	β^+:85.0;IT:15.0	9.889 h	3.09		3.6000E+04	9.9900E+05	4
>1720	Os-184	0.0	α:50.0;β^+,β^+:50.0	5.60E+13 y	0.00	1.4815E+06	7.2560E+05		6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>1721	Os-185	0.5	β^+	93.800 d	0.96		1.8331E+04	7.1903E+05	6
>1722	Os-186	0.0	α	2.00E+15 y	55.00	2.8231E+06			6
>1723	Os-187	0.5							6
>1724	Os-188	0.0							6
>1725	Os-189	1.5							6
1726	Os-189m	4.5	IT	4.806 h	2.31		2.4260E+04	2.0100E+03	4
>1727	Os-190	0.0							6
>1728	Os-190m	10.0	IT	9.900 m	4.04		1.1685E+05	1.5885E+06	6
>1729	Os-191	4.5	β_m^-	15.300 d	1.96		3.7521E+04		3
>1730	Os-191m	1.5	IT	13.100 h	0.38		6.6577E+04	7.8070E+03	3
>1731	Os-192	0.0							6
>1732	Os-192m	10.0	IT_g:87.0;β_n^-:13.0	5.900 s	1.69		3.4665E+04	1.7881E+06	6
>1733	Os-193	1.5	β_g^-:99.65;β_m^-:0.35	1.255 d	0.03		3.7955E+05	6.7060E+04	6
1734	Os-194	0.0	β^-	5.989 y	3.70		3.2333E+04	2.3000E+03	4
>1735	Os-195	0.5	β^-	6.500 m	9.23		7.1526E+05	1.4223E+05	6
>1736	Os-196	0.0	β^-	34.900 m	0.57		3.7256E+05	7.7034E+04	6
1737	Os-197	?	β^-	3.410 s	49.85		7.1700E+05	7.1700E+05	10
1738	Os-198	?	β^-	32.900 s	51.67		3.6000E+05	3.6000E+05	10
1739	Os-199	?	β^-	36.600 s	51.91		1.1430E+06	1.1430E+06	10
1740	Os-200	?	β^-	16.000 s	12.50		8.6667E+05	8.6667E+05	12
1741	Os-201	?	β^-	9.440 s	21.19		1.4133E+06	1.4133E+06	12
1742	Ir-178	?	β^+	12.000 s	16.67		2.4333E+06	1.3800E+06	4
>1743	Ir-179	2.5	β^+	1.317 m	1.27		1.6477E+06	1.6477E+06	6
1744	Ir-180	?	β^+	1.500 m	6.67		2.1333E+06	1.6400E+06	4
1745	Ir-181	3.5	β^+	4.900 m	3.06		4.1000E+05	1.3333E+06	4
1746	Ir-182	5.0	β^+	15.000 m	6.67		7.8000E+04	8.1900E+05	4
>1747	Ir-183	2.5	β_g^+:31.04;β_m^+:68.96	58.000 m	10.34		1.2005E+05	9.0749E+05	8
1748	Ir-184	5.0	β^+	3.019 h	2.02		2.2700E+05	1.7225E+06	4
1749	Ir-185	2.5	β^+	13.889 h	8.00		8.3333E+05	8.3333E+05	4
1750	Ir-186	5.0	β^+	16.639 h	0.18		1.2800E+05	1.6200E+06	4
1751	Ir-186m	2.0	β^+	2.000 h	5.56		1.2000E+05	1.4300E+06	4
>1752	Ir-187	1.5	β^+	10.500 h	2.86		6.3789E+04	3.0151E+05	6
1753	Ir-188	2.0	β^+	1.729 d	1.20		4.1600E+04	2.1000E+06	4
>1754	Ir-189	1.5	β_g^+:92.51;β_m^+:7.49	13.200 d	0.76		4.0256E+04	7.8920E+04	6
>1755	Ir-190	4.0	β^+	12.000 d	1.67		7.2110E+04	1.4781E+06	6
>1756	Ir-190m	1.0	IT	1.120 h	0.27		2.3839E+04	2.2832E+03	6
>1757	Ir-190n	11.0	IT_g:8.6;β_m^+:91.4	3.087 h	0.39		2.8879E+04	5.8873E+04	6
>1758	Ir-191	1.5							6
>1759	Ir-191m	5.5	IT	4.900 s	0.61		9.5722E+04	7.5386E+04	3
>1760	Ir-191n	13.5	IT_m	5.500 s	12.73		4.5764E+04	1.8681E+06	6
>1761	Ir-192	4.0	β^-:95.2;β^+:4.8	73.822 d	0.01		2.1729E+05	8.1648E+05	6
>1762	Ir-192m	1.0	β^-:0.02;IT:99.98	1.440 m	4.86		5.4434E+04	2.4385E+03	6
>1763	Ir-192n	11.0	IT	241.000 y	3.73		1.6504E+05	3.0859E+03	6
>1764	Ir-193	1.5							6
1765	Ir-193m	5.5	IT	10.602 d	1.09		7.3300E+04	2.4100E+03	4
>1766	Ir-194	1.0	β^-	19.300 h	0.52		8.1031E+05	9.0990E+04	6
>1767	Ir-194m	4.0	IT	0.032 s	0.75			1.4708E+05	6
+1768	Ir-194n	?	β^-	171.000 d	6.43		8.3060E+04	2.3337E+06	6
>1769	Ir-195	1.5	β^-	2.500 h	8.00		3.7836E+05	5.8389E+04	6
>1770	Ir-195m	5.5	β_g^-:51.03;β_m^-:43.97;IT:5.0	3.800 h	5.26		2.7736E+05	3.5973E+05	8
>1771	Ir-196	0.0	β^-	52.000 s	3.85		1.1681E+06	2.2721E+05	6
1772	Ir-196m	11.0	β^-	1.400 h	1.59		4.5000E+05	2.4700E+06	5
>1773	Ir-197	1.5	β^-	5.800 m	8.62		7.3337E+05	2.2379E+05	6
>1774	Ir-197m	5.5	β_m^-:99.75;IT_g:0.25	8.900 m	3.37		6.8001E+05	2.0424E+03	6
1775	Ir-198	?	β^-	8.000 s	12.50		1.3333E+06	8.2000E+05	4
>1776	Ir-199	1.5	β^-	20.000 s	0.00		9.9733E+05	9.9733E+05	6
1777	Ir-200	?	β^-	5.190 s	50.10		1.2780E+06	1.2780E+06	10
1778	Ir-201	?	β^-	18.500 s	10.81		1.2567E+06	1.2567E+06	12
1779	Ir-202	?	β^-	8.500 s	17.65		1.8133E+06	1.8133E+06	12
>1780	Pt-181	0.5	β^+:99.93;α:0.07	52.000 s	4.23	3.8111E+03	1.6977E+06	1.6977E+06	6
1781	Pt-182	0.0	β^+:99.98;α:0.02	2.600 m	3.85	9.6700E+02		1.8255E+05	4
>1782	Pt-183	0.5	β^+:99.99;α:~	6.500 m	15.38	4.6302E+02	1.4749E+06	1.4749E+06	6
1783	Pt-183m	3.5	β^+	43.000 s	11.63		6.8000E+04	1.1700E+06	4
1784	Pt-184	0.0	β^+:100.0;α:~	17.300 m	1.16	4.4900E+01		1.8157E+06	4
1785	Pt-185	4.5	β^+	1.183 h	3.38		1.2667E+06	2.5400E+06	10
1786	Pt-185m	0.5	β^+	33.000 m	2.53		3.7800E+05	3.1100E+06	7
>1787	Pt-186	0.0	α:~;β^+:100.0	2.080 h	2.40		3.5592E+04	6.7617E+05	8
>1788	Pt-187	1.5	β^+	2.350 h	1.28		1.0320E+05	4.4834E+05	6
>1789	Pt-188	0.0	β^+	10.200 d	2.94		7.4563E+04	2.0536E+05	6
>1790	Pt-189	1.5	β^+	10.870 h	1.10		8.7556E+04	4.7282E+05	6
>1791	Pt-190	0.0	α	6.50E+11 y	4.62	3.2434E+06			6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>1792	Pt-191	1.5	β_g^+:98.98;β_m^+:1.02	2.802 d	0.89		6.5937E+04	2.9430E+05	6
>1793	Pt-192	0.0							6
>1794	Pt-193	0.5	β^+	50.001 y	18.00		7.8562E+03	3.3781E+04	6
>1795	Pt-193m	6.5	IT	4.340 d	0.69		1.3796E+05	1.2333E+04	6
>1796	Pt-194	0.0							6
>1797	Pt-195	0.5							6
1798	Pt-195m	6.5	IT	4.020 d	0.26		1.6900E+05	7.6000E+04	4
>1799	Pt-196	0.0							6
>1800	Pt-197	0.5	β^-	19.892 h	0.01		2.5443E+05	2.4381E+04	6
>1801	Pt-197m	6.5	β_m^-:3.3;IT_g:96.7	1.588 h	0.21		3.1694E+05	7.6079E+04	6
>1802	Pt-198	0.0							6
>1803	Pt-199	2.5	β^-	30.800 m	1.30		5.4950E+05	1.9941E+05	6
>1804	Pt-199m	6.5	IT	13.600 s	2.94		7.7279E+04	3.4060E+05	6
>1805	Pt-200	0.0	β^-	12.500 h	2.40		2.2662E+05	5.9603E+04	6
>1806	Pt-201	2.5	β^-	2.500 m	4.00		8.8700E+05	8.8700E+05	6
>1807	Pt-202	0.0	β^-	1.833 d	34.09		6.5892E+05	1.9270E+03	6
1808	Pt-203	?	β^-	41.100 s	10.00		9.3000E+05	9.3000E+05	12
>1809	Au-185	2.5	β_g^+:25.33;β_m^+:74.41;α:0.26	4.250 m	1.41	1.3468E+04	1.5745E+06	1.5745E+06	6
>1810	Au-186	3.0	β^+	10.700 m	4.67		1.0537E+06	1.4300E+06	6
1811	Au-187	0.5	β^+:99.9;α:0.1	8.400 m	3.57	1.3102E+06	2.9900E+06	1.5768E+06	4
>1812	Au-187m	4.5	IT	2.300 s	4.35			1.2051E+05	6
1813	Au-188	1.0	β^+	8.833 m	0.75		4.2000E+04	2.0500E+06	4
1814	Au-189	0.5	β^+	28.700 m	1.05		8.0000E+04	8.4000E+05	10
1815	Au-189m	5.5	β^+	4.590 m	0.22		1.0324E+06	2.0770E+05	4
>1816	Au-190	1.0	β^+	42.800 m	2.34		1.2995E+05	2.1228E+06	6
>1817	Au-191	1.5	β^+	3.180 h	2.52		7.1860E+04	5.5817E+05	6
1818	Au-191m	5.5	IT	0.920 s	11.96		5.5000E+04	1.9000E+05	4
>1819	Au-192	1.0	β^+	4.940 h	1.82		8.2859E+04	1.7024E+06	6
>1820	Au-192m	5.0	IT	0.029 s	10.34		1.2610E+05	8.8547E+03	6
+1821	Au-192n	11.0	IT_m	0.160 s	12.50		1.6147E+05	1.3469E+05	6
>1822	Au-193	1.5	β^+	17.650 h	0.85		4.9021E+04	1.5877E+05	6
1823	Au-193m	5.5	β^+:0.03;IT:99.97	3.900 s	7.69		8.3000E+04	1.6348E+05	4
>1824	Au-194	1.0	β^+	1.584 d	0.26		3.6770E+04	1.0308E+06	6
1825	Au-194m	5.0	IT	0.600 s	1.33			3.2000E+03	4
1826	Au-194n	11.0	IT	0.420 s	2.38			1.2100E+05	4
1827	Au-195	1.5	β^+	186.090 d	0.01		4.2000E+04	8.6700E+04	4
1828	Au-195m	5.5	IT	30.500 s	0.66		1.1080E+05	2.0120E+05	4
>1829	Au-196	2.0	β^+:92.8;β^-:7.2	6.183 d	0.16		2.7861E+04	4.7212E+05	6
1830	Au-196m	5.0	IT	8.100 s	2.47		7.7000E+04	2.9000E+03	4
>1831	Au-196n	12.0	IT_g:2.42;IT_m:97.58	9.600 h	1.04		2.7292E+05	2.3547E+05	8
>1832	Au-197	1.5							6
>1833	Au-197m	5.5	IT	7.740 s	0.90		1.8382E+05	2.2544E+05	6
>1834	Au-198	2.0	β^-	2.694 d	0.03		3.2624E+05	4.0284E+05	6
>1835	Au-198m	12.0	IT	2.300 d	1.74		2.6208E+05	5.2782E+05	6
>1836	Au-199	1.5	β^-	3.139 d	0.22		1.4508E+05	9.6067E+04	6
>1837	Au-200	1.0	β^-	48.400 m	0.62		7.4268E+05	2.7326E+05	6
1838	Au-200m	12.0	β^-:82.0;IT:18.0	18.694 h	2.67		2.5000E+05	1.9800E+06	4
>1839	Au-201	1.5	β^-	26.000 m	3.85		4.2406E+05	3.4192E+04	6
>1840	Au-202	1.0	β^-	28.800 s	6.60		1.1795E+06	1.6970E+05	6
>1841	Au-203	1.5	β^-	53.000 s	3.77		7.6693E+05	6.9000E+04	6
1842	Au-204	2.0	β^-	39.800 s	2.26		8.3000E+05	1.9025E+06	4
>1843	Au-205	1.5	β^-	31.000 s	6.45		1.1790E+06	1.1790E+06	6
1844	Au-206	?	β^-	1.590 s	31.45		2.1933E+06	2.1933E+06	12
>1845	Hg-186	0.0	α:0.02;β^+:100.0	1.380 m	4.35	9.1692E+02	1.5877E+05	4.2361E+05	6
1846	Hg-187	6.5	β^+:99.99;α:0.01	2.400 m	12.50	1.6071E+06		4.0458E+06	4
>1847	Hg-187m	6.5	β_m^+:100.0;α_m:~	2.400 m	12.50	1.3062E+01	1.5988E+06	1.5988E+06	6
>1848	Hg-188	0.0	β^+	3.250 m	4.62		4.4485E+04	1.7173E+05	6
1849	Hg-189	1.5	β^+:99.9;α:0.1	7.600 m	0.00	1.3198E+06	6.8000E+05	3.1130E+06	4
1850	Hg-189m	6.5	β^+	8.700 m	0.00		9.2000E+05	1.3170E+06	4
>1851	Hg-190	0.0	β^+	20.000 m	2.00		6.8071E+04	2.0438E+05	6
1852	Hg-191	1.5	β^+	48.333 m	20.69		1.0600E+06	4.3796E+05	4
1853	Hg-191m	6.5	β^+	50.833 m	2.95		1.0100E+05	1.4500E+06	4
>1854	Hg-192	0.0	β^+	4.850 h	4.12		5.2893E+04	2.7227E+05	6
>1855	Hg-193	1.5	β_g^+:96.64;β_m^+:3.36	3.800 h	3.95		7.7775E+05	7.7775E+05	6
1856	Hg-193m	6.5	β^+:92.0;IT:8.0	11.806 h	1.88		1.1900E+05	1.1177E+06	4
>1857	Hg-194	0.0	β^+	440.008 y	18.18		3.4500E+03	6.9000E+03	6
>1858	Hg-195	0.5	β_g^+:97.9;β_m^+:2.1	9.900 h	5.05		5.5561E+04	1.9951E+05	6
1859	Hg-195m	6.5	β^+:45.8;IT:54.2	1.736 d	2.00		1.3300E+05	2.0400E+05	4
>1860	Hg-196	0.0	β^+,β^+	2.50E+18 y	0.00		8.2070E+05		6
>1861	Hg-197	0.5	β^+	2.692 d	0.93		6.9155E+04	7.3506E+04	6
>1862	Hg-197m	6.5	β_m^+:8.6;IT_g:91.4	23.900 h	2.09		2.0056E+05	7.7979E+04	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>1863	Hg-198	0.0							6
>1864	Hg-199	0.5							6
>1865	Hg-199m	6.5	IT	42.100 m	2.14		3.4770E+05	1.8457E+05	6
>1866	Hg-200	0.0							6
>1867	Hg-201	1.5							6
>1868	Hg-202	0.0							6
>1869	Hg-203	2.5	β^-	46.603 d	0.05		9.8331E+04	2.3771E+05	6
>1870	Hg-204	0.0							6
>1871	Hg-205	0.5	β^-	5.200 m	1.92		5.3624E+05	6.8864E+03	6
>1872	Hg-206	0.0	β^-	8.150 m	1.23		4.3068E+05	1.0198E+05	6
1873	Hg-207	4.5	β^-	2.900 m	6.90		1.5933E+06	2.7200E+06	4
>1874	Hg-208	0.0	β^-	42.000 m	11.90		1.2165E+06	1.2165E+06	6
>1875	Hg-209	4.5	β^-	37.000 s	21.62		1.7627E+06	1.7627E+06	6
>1876	Tl-192	2.0	β^+	9.600 m	4.17		2.0470E+06	2.0470E+06	6
+1877	Tl-192m	7.0	β^+	10.800 m	1.85		2.1003E+06	2.1003E+06	6
>1878	Tl-193	0.5	β^+	21.800 m	3.21		9.4344E+04	5.5590E+05	6
>1879	Tl-193m	4.5	β^+:25.0;IT:75.0	2.110 m	7.11		1.0918E+05	3.6346E+05	6
1880	Tl-194	2.0	β^+	33.000 m	1.52		1.9000E+04	7.1000E+05	4
1881	Tl-194m	7.0	β^+	32.800 m	0.61		2.7000E+05	2.5100E+06	4
1882	Tl-195	0.5	β^+	1.161 h	4.31		4.9500E+04	1.1900E+06	4
>1883	Tl-195m	4.5	IT	3.600 s	11.11		1.1411E+05	3.5946E+05	8
>1884	Tl-196	2.0	β^+	1.840 h	1.63		1.7096E+05	1.4961E+06	6
1885	Tl-196m	7.0	β^+:95.5;IT:4.5	1.411 h	1.57		2.7800E+04	1.1300E+06	4
>1886	Tl-197	0.5	β^+	2.840 h	1.41		4.6275E+04	4.5659E+05	6
>1887	Tl-197m	4.5	IT	0.540 s	1.85		1.6892E+05	4.3535E+05	6
>1888	Tl-198	2.0	β^+	5.300 h	9.43		3.1948E+04	1.9840E+06	6
>1889	Tl-198m	7.0	β^+:54.0;IT:46.0	1.870 h	1.60		1.8465E+05	1.1707E+06	6
>1890	Tl-199	0.5	β^+	7.420 h	1.08		5.2304E+04	2.5104E+05	6
>1891	Tl-200	2.0	β^+	1.088 d	0.38		3.3924E+04	1.3098E+06	6
>1892	Tl-201	0.5	β^+	3.041 d	0.10		3.7389E+04	9.4907E+04	6
>1893	Tl-202	2.0	β^+	12.240 d	0.25		2.2508E+04	4.6654E+05	6
>1894	Tl-203	0.5							6
>1895	Tl-204	2.0	β^+:2.92;β^-:97.08	3.788 y	0.40		2.3690E+05	1.2780E+03	6
>1896	Tl-205	0.5							6
>1897	Tl-206	0.0	β^-	4.202 m	0.40		5.3609E+05	2.5705E+03	6
>1898	Tl-206m	12.0	IT	3.760 m	1.06		1.5329E+05	2.4895E+06	6
>1899	Tl-207	0.5	β^-	4.770 m	0.63		4.9135E+05	3.3412E+03	6
>1900	Tl-207m	5.5	IT	1.330 s	8.27		1.8370E+05	1.1574E+06	6
>1901	Tl-208	5.0	β^-	3.053 m	0.13		5.8474E+05	3.3841E+06	6
>1902	Tl-209	0.5	β^-	2.200 m	3.18		6.8491E+05	2.1222E+06	6
>1903	Tl-210	5.0	β^-:99.99;β^-,n:~	1.300 m	2.31	5.7909E+02	1.0925E+06	2.7265E+06	6
>1904	Pb-193	1.5	β^+	5.000 m	0.00		1.7100E+06	1.7100E+06	6
+1905	Pb-193m	6.5	β_g^+:95.3;β_m^+:4.7	5.800 m	3.45		1.7476E+06	1.7476E+06	6
>1906	Pb-194	0.0	α:~;β^+:100.0	12.000 m	4.17	3.3872E-01	7.2881E+04	1.0350E+06	6
1907	Pb-195	1.5	β^+	15.000 m	33.33		1.0100E+03	2.9500E+05	10
1908	Pb-195m	6.5	β^+	15.000 m	8.89		3.0500E+05	1.6800E+06	4
>1909	Pb-196	0.0	β^+	37.000 m	8.11		8.6958E+04	4.8914E+05	8
>1910	Pb-197	1.5	β^+	8.000 m	25.00		7.5049E+04	1.4142E+06	6
1911	Pb-197m	6.5	β^+:81.0;IT:19.0	44.667 m	2.24		2.3600E+05	1.1700E+06	4
>1912	Pb-198	0.0	β^+	2.400 h	4.17		7.0521E+04	4.3719E+05	6
>1913	Pb-199	1.5	β^+	1.500 h	11.11		5.0813E+04	9.5990E+05	6
1914	Pb-199m	6.5	β^+:7.0;IT:93.0	12.200 m	2.46		2.7900E+05	1.4830E+05	4
>1915	Pb-200	0.0	β^+	21.500 h	1.86		9.0791E+04	2.0800E+05	6
>1916	Pb-201	2.5	β^+	9.400 h	1.06		5.8285E+04	7.6805E+05	6
>1917	Pb-201m	6.5	IT	1.017 m	4.92		2.6219E+05	3.6614E+05	6
>1918	Pb-202	0.0	β^+	5.30E+04 y	3.77		9.2832E+03	6.9968E+04	6
>1919	Pb-202m	9.0	β^+:9.1;IT:90.9	3.570 h	0.84		1.3845E+05	1.9755E+06	6
>1920	Pb-203	2.5	β^+	2.162 d	0.04		4.7537E+04	3.1453E+05	6
>1921	Pb-203m	6.5	IT	6.290 s	1.91		1.7121E+05	6.5409E+05	6
>1922	Pb-203n	14.5	IT_m	0.480 s	4.17		2.1640E+05	1.9066E+06	6
>1923	Pb-204	0.0	α	1.40E+17 y	42.86	1.9717E+06			6
>1924	Pb-204m	9.0	IT	1.125 h	0.74		1.0327E+05	2.0807E+06	6
>1925	Pb-205	2.5	β^+	1.53E+07 y	4.58		8.9530E+03	5.9294E+04	6
+1926	Pb-205m	6.5	IT	0.006 s	0.36			1.0138E+06	6
>1927	Pb-206	0.0							6
>1928	Pb-207	0.5							6
>1929	Pb-207m	6.5	IT	0.806 s	0.74		1.2240E+05	1.5065E+06	8
>1930	Pb-208	0.0							6
>1931	Pb-209	4.5	β^-	3.253 h	0.43		1.9734E+05		6
>1932	Pb-210	0.0	β^-:100.0;α:~	22.160 y	0.54	7.2053E-02	4.0722E+04	4.8224E+03	6
>1933	Pb-211	4.5	β^-	36.100 m	0.55		4.4907E+05	6.8454E+04	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>1934	Pb-212	0.0	β^-	10.640 h	0.09		1.6875E+05	1.4475E+05	6
>1935	Pb-213	4.5	β^-	10.200 m	2.94		6.8233E+05	6.8233E+05	6
>1936	Pb-214	0.0	β^-	26.800 m	3.36		2.9250E+05	2.3720E+05	6
+1937	Pb-215	2.5	β^-	36.000 s	2.78		9.4367E+05	9.4367E+05	6
>1938	Bi-196	3.0	β^+:100.0;α:~	5.100 m	3.92	6.2515E+01	2.4506E+06	2.4506E+06	6
+1939	Bi-196m	7.0	IT:50.0;β^+:50.0	0.600 s	83.33		1.2532E+06	1.3367E+06	6
+1940	Bi-196n	10.0	β_g^+:74.2;IT_m:25.8;α_m:~	4.000 m	1.25	2.1075E+01	1.8852E+06	1.9117E+06	6
>1941	Bi-197	4.5	β_m^+:100.0;α_m:~	9.300 m	5.38	4.8381E+00	1.5806E+06	1.5806E+06	6
>1942	Bi-197m	0.5	α:54.84;β^+:44.87;IT:0.30	5.040 m	3.17	3.0528E+06	8.1072E+05	8.1179E+05	6
1943	Bi-198	2.0	β^+	10.300 m	0.00		2.1871E+06	2.1871E+06	12
1944	Bi-198m	7.0	β^+	11.850 m	1.55		2.1603E+06	1.8980E+06	12
1945	Bi-198n	10.0	IT	7.700 s	6.49		1.3800E+05	1.0700E+05	12
1946	Bi-199	4.5	β^+	27.000 m	3.70		1.4400E+06	1.2220E+06	4
>1947	Bi-199m	0.5	β^+:97.99;IT:2.0;α:0.01	24.700 m	0.61	5.5991E+02	1.6649E+06	1.6782E+06	6
1948	Bi-200	7.0	β^+	36.333 m	1.38		2.0000E+05	2.4000E+06	4
1949	Bi-200m	2.0	β^+	31.000 m	6.45		3.6120E+05	1.5200E+06	4
+1950	Bi-200n	10.0	IT	0.400 s	12.50			4.2820E+05	6
1951	Bi-201	4.5	β^+	1.800 h	2.78		1.3400E+05	1.8600E+06	4
>1952	Bi-201m	0.5	β_g^+:46.45;β_m^+:46.45; ;IT:6.8;α:0.3	59.100 m	1.02	1.6039E+04	1.3544E+06	1.4120E+06	6
>1953	Bi-202	5.0	β_g^+:100.0;β_m^+:~	1.720 h	2.91		1.3654E+05	2.4602E+06	6
1954	Bi-203	4.5	β^+:100.0;α:~	11.761 h	0.43	3.9700E-01	6.5100E+04	2.3700E+06	4
>1955	Bi-203m	0.5	IT	0.305 s	1.64		1.5764E+05	9.3082E+05	8
>1956	Bi-204	6.0	β_g^+:90.73;β_m^+:9.27	11.220 h	0.89		7.7646E+04	2.9838E+06	8
>1957	Bi-205	4.5	β_g^+:86.39;β_m^+:13.61	15.310 d	0.26		1.7097E+04	1.4832E+06	8
>1958	Bi-206	6.0	β^+	6.243 d	0.05		1.2383E+05	3.2741E+06	6
>1959	Bi-207	4.5	β^+	31.760 y	6.03		1.1846E+05	1.5395E+06	6
>1960	Bi-208	5.0	β^+	3.68E+05 y	1.09		8.5181E+03	2.6573E+06	6
>1961	Bi-208m	10.0	IT	0.003 s	1.55		7.2288E+04	1.5007E+06	6
>1962	Bi-209	4.5	α	1.90E+19 y	10.53	3.1372E+06			6
>1963	Bi-210	1.0	β^-:100.0;α:~	5.012 d	0.10	6.2660E+00	3.8768E+05	6.7673E+02	6
>1964	Bi-210m	9.0	α	3.00E+06 y	3.33	5.0092E+06	4.6943E+04	2.6112E+05	6
>1965	Bi-211	4.5	β^-:0.27;α:99.73	2.170 m	1.84	6.6753E+06	1.0061E+04	4.7579E+04	6
>1966	Bi-212	1.0	β^-:64.06;β^-,α:0.01;α:35.93	1.009 h	0.10	2.2169E+06	5.0258E+05	1.0726E+05	6
>1967	Bi-212m	9.0	β^-:3.2;β^-,α:30.0;α:66.8	25.000 m	4.00	7.4230E+06	1.3366E+05	6.0476E+04	6
>1968	Bi-212n	17.0	β_m^-	9.000 m	11.11		1.2569E+06	5.0613E+03	6
>1969	Bi-213	4.5	β^-:97.84;α:2.16	45.590 m	0.13	1.2870E+05	4.4436E+05	1.2920E+05	6
>1970	Bi-214	1.0	β^-:99.98;α:0.02	19.900 m	2.01	1.1679E+03	6.2855E+05	1.5400E+06	6
>1971	Bi-215	4.5	β^-	7.400 m	8.11		7.5067E+05	7.5067E+05	6
+1972	Bi-215m	12.5	IT:50.0;β^-:50.0	36.900 s	1.63		5.8947E+05	1.2632E+06	6
+1973	Bi-216	1.0	β^-	2.170 m	2.30		1.3634E+06	1.3634E+06	6
1974	Po-202	0.0	β^+:98.0;α:2.0	44.667 m	1.12	1.1174E+05	1.5800E+05	8.4000E+05	4
>1975	Po-203	2.5	α:0.11;β^+:99.89	36.700 m	1.36	5.9806E+03	1.3634E+05	1.3812E+06	6
>1976	Po-203m	6.5	IT	45.000 s	4.44		2.6653E+05	3.6898E+05	8
1977	Po-204	0.0	β^+:99.34;α:0.66	3.531 h	0.63	3.5488E+04	1.5000E+05	1.1540E+06	4
>1978	Po-205	2.5	α:0.04;β^+:99.9	1.660 h	1.20	2.0898E+03	5.2586E+04	1.4594E+06	6
>1979	Po-206	0.0	α:5.45;β^+:94.55	8.800 d	1.14	2.9022E+05	1.4518E+05	1.1806E+06	8
>1980	Po-207	2.5	α:0.02;β^+:99.98	5.800 h	0.34	1.0734E+03	4.2025E+04	1.2739E+06	6
>1981	Po-207m	9.5	IT	2.790 s	2.87		2.8476E+05	1.0755E+06	6
>1982	Po-208	0.0	β^+:~;α:100.0	2.930 y	1.37	5.2153E+06	2.8603E+00	1.7210E+01	6
>1983	Po-209	0.5	β^+:0.26;α:99.74	102.002 y	4.90	4.9637E+06	4.4429E+02	5.1499E+03	6
>1984	Po-210	0.0	α	138.388 d	0.00	5.4075E+06	9.3273E-02	9.7246E+00	6
>1985	Po-211	4.5	α	0.516 s	0.58	7.5861E+06	1.5731E+02	7.7474E+03	6
>1986	Po-211m	12.5	α	25.500 s	1.18	7.5499E+06	1.0074E+04	1.4899E+06	6
>1987	Po-212	0.0	α	2.98E-07 s	1.01	8.9545E+06			6
>1988	Po-212m	18.0	α	45.100 s	1.33	1.1785E+07	3.7699E+02	9.1232E+04	6
>1989	Po-213	4.5	α	4.20E-06 s	19.05	8.5364E+06	7.4905E-01	2.3438E+01	6
>1990	Po-214	0.0	α	1.64E-04 s	0.12	7.8335E+06	8.2838E-01	8.4188E+01	6
>1991	Po-215	4.5	β^-:~;α:100.0	0.002 s	0.56	7.5260E+06	3.1485E+01	2.1568E+02	6
>1992	Po-216	0.0	α	0.150 s	3.33	6.9066E+06	1.4683E-01	1.5305E+01	6
>1993	Po-217	2.5	α:95.0;β^-:5.0	1.470 s	3.40	6.3271E+06	2.5083E+04	2.5083E+04	6
>1994	Po-218	0.0	β^-:0.02;α:99.98	3.098 m	0.26	6.1136E+06	1.3692E+01	9.2135E+00	6
>1995	Po-219	3.5	β^-:50.0;α:50.0	2.000 m	0.00	2.9476E+06	4.0050E+05	4.0050E+05	6
1996	At-205	4.5	β^+:90.0;α:10.0	26.167 m	1.91	5.9020E+05	1.7000E+05	1.0800E+06	4
>1997	At-206	5.0	α:0.89;β^+:99.11	30.000 m	2.00	5.1803E+04	3.0304E+05	2.3035E+06	6
1998	At-207	4.5	β^+:91.3;α:8.7	1.800 h	2.31	5.7580E+05	1.1100E+05	1.9900E+06	4
1999	At-208	6.0	β^+:99.45;α:0.55	1.631 h	1.87	3.1021E+04	1.2340E+05	3.0300E+06	4
>2000	At-209	4.5	α:4.1;β^+:95.9	5.410 h	0.92	2.3572E+05	1.0514E+05	2.2404E+06	8
>2001	At-210	5.0	α:0.18;β^+:99.83	8.100 h	4.94	9.5581E+03	6.9296E+04	2.9643E+06	6
>2002	At-211	4.5	α:41.8;β^+:58.2	7.214 h	0.10	2.5012E+06	3.0649E+03	3.9152E+04	6
>2003	At-212	1.0	α	0.314 s	0.64	7.7858E+06			6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>2004	At-212m	9.0	α	0.119 s	2.52	7.9903E+06	3.1423E+04	4.8055E+03	6
>2005	At-213	4.5	α	1.25E-07 s	4.80	9.2543E+06			6
>2006	At-214	1.0	α	5.58E-07 s	1.79	8.9832E+06			6
>2007	At-215	4.5	α	1.00E-04 s	20.00	8.1781E+06	1.6514E+01	1.8532E+02	6
>2008	At-216	1.0	α	3.00E-04 s	10.00	7.9571E+06			6
>2009	At-217	4.5	β^-:0.01;α:99.99	0.032 s	1.24	7.1991E+06	8.2896E+01	2.9991E+02	6
>2010	At-218	1.0	β^-:0.1;α:99.9	1.500 s	20.00	6.8040E+06	5.2468E+04	1.1865E+04	6
>2011	At-219	2.5	β^-:3.0;α:97.0	54.000 s	11.11	6.1951E+06	1.7861E+04	5.0231E+01	6
>2012	At-220	3.0	α:8.0;β^-:92.0	3.710 m	1.08	4.8432E+05	1.1827E+06	3.7239E+05	6
>2013	At-221	1.5	β^-	2.300 m	8.70		7.7933E+05	7.7933E+05	6
>2014	At-222	?	β^-	54.000 s	18.52		1.4755E+06	1.4755E+06	6
2015	Rn-208	0.0	β^+:38.0;α:62.0	24.350 m	0.62	3.8072E+06	8.3000E+04	5.3200E+05	4
>2016	Rn-209	2.5	α:17.0;β^+:83.0	28.500 m	3.51	1.0467E+06	1.1182E+05	9.7736E+05	6
>2017	Rn-210	0.0	α:96.0;β^+:4.0	2.400 h	4.17	5.9122E+06	8.1378E+03	5.8811E+04	6
2018	Rn-211	0.5	β^+:74.0;α:26.0	14.611 h	1.52	1.5045E+06	5.7100E+04	1.9100E+06	4
>2019	Rn-212	0.0	α	23.900 m	5.02	6.3844E+06			6
>2020	Rn-213	4.5	α	0.025 s	0.80	8.2378E+06			6
>2021	Rn-214	0.0	α	2.70E-07 s	7.41	9.2082E+06			6
>2022	Rn-215	4.5	α	2.30E-06 s	4.35	8.8389E+06			6
>2023	Rn-216	0.0	α	4.50E-05 s	11.11	8.2005E+06			6
>2024	Rn-217	4.5	α	5.40E-04 s	9.26	7.8842E+06	8.3947E+01	1.5336E+02	6
>2025	Rn-218	0.0	α	0.035 s	25.71	7.2618E+06	1.3991E+01	7.5710E+02	6
>2026	Rn-219	2.5	α	3.960 s	1.26	6.8849E+06	6.6728E+03	5.5288E+04	6
>2027	Rn-220	0.0	α	55.800 s	0.54	6.4041E+06	1.4518E+01	6.2849E+02	6
>2028	Rn-221	3.5	α:20.0;β^-:78.0	25.000 m	8.00	1.2199E+06	2.7753E+05	1.1705E+05	6
>2029	Rn-222	0.0	α	3.823 d	0.01	5.5900E+06	1.0974E+01	3.8944E+02	6
>2030	Rn-223	3.5	β^-	24.200 m	2.89		6.2491E+05	3.3014E+05	6
2031	Rn-224	0.0	β^-	1.783 h	2.80		1.8333E+05	2.4029E+05	11
>2032	Rn-225	3.5	β^-	4.660 m	0.86		8.9333E+05	8.9333E+05	6
>2033	Fr-218	1.0	α	0.001 s	60.00	7.9546E+06			6
+2034	Fr-218m	?	α	0.022 s	2.27	8.1001E+06			6
>2035	Fr-219	4.5	α	0.020 s	10.00	7.4434E+06	4.1246E+02	3.5502E+03	6
>2036	Fr-220	1.0	α:99.65;β^-:0.35	27.400 s	1.09	6.6726E+06	1.3721E+04	9.6581E+03	6
>2037	Fr-221	2.5	α	4.900 m	4.08	6.4714E+06	8.8223E+03	2.9822E+04	6
>2038	Fr-222	2.0	β^-	14.200 m	2.11		7.1524E+05	1.7717E+05	6
>2039	Fr-223	1.5	β^-:99.99;α:~	21.800 m	1.83	3.2626E+02	3.7910E+05	5.8986E+04	6
>2040	Fr-224	1.0	β^-	3.330 m	3.00		8.7692E+05	5.3528E+05	6
>2041	Fr-225	1.5	β^-	4.000 m	5.00		6.0533E+05	6.0533E+05	6
>2042	Fr-226	1.0	β^-	49.000 s	2.04		1.2210E+06	4.3612E+05	6
>2043	Fr-227	0.5	β^-	2.470 m	1.21		7.6676E+05	4.3494E+05	6
>2044	Fr-228	2.0	β^-	38.000 s	2.63		1.4369E+06	6.6641E+05	6
>2045	Ra-220	0.0	α	0.018 s	11.11	7.5888E+06		4.6500E+03	6
>2046	Ra-221	2.5	α	28.000 s	7.14	6.9682E+06	5.9186E+04	3.8109E+04	8
>2047	Ra-222	0.0	α	38.000 s	1.32	6.6671E+06	8.3357E+02	9.1915E+03	6
>2048	Ra-223	0.5	α	11.430 d	0.17	5.7817E+06	7.4741E+04	1.3429E+05	6
>2049	Ra-224	0.0	α	3.640 d	0.82	5.7760E+06	2.3524E+03	1.0431E+04	6
>2050	Ra-225	1.5	β^-	14.800 d	1.35		1.0780E+05	1.3827E+04	6
>2051	Ra-226	0.0	α	1600.001 y	0.44	4.8594E+06	3.4993E+03	7.2564E+03	6
2052	Ra-227	1.5	β^-	42.200 m	1.18		4.1435E+05	1.6233E+05	4
>2053	Ra-228	0.0	β^-	5.750 y	0.52		2.1466E+04	2.0048E+03	6
>2054	Ra-229	2.5	β^-	4.000 m	5.00		6.1343E+05		6
2055	Ra-230	0.0	β^-	1.550 h	2.15		3.0000E+05	3.0000E+05	4
>2056	Ra-231	2.5	β^-	1.717 m	2.91		8.2667E+05	8.2667E+05	6
2057	Ac-222	1.0	α	4.200 s	11.90	7.1389E+06			5
2058	Ac-222m	4.0	β^+:12.0;α:88.0	1.100 m	4.55	6.1317E+06			5
2059	Ac-223	?	β^+:1.0;α:99.0	2.200 m	4.55	6.7503E+06		3.9472E+03	4
>2060	Ac-224	0.0	α:9.1;β^+:90.9	2.780 h	6.12	5.6276E+05	3.9936E+04	2.3097E+05	6
>2061	Ac-225	1.5	α	10.000 d	1.00	5.8684E+06	2.7615E+04	1.7149E+04	6
2062	Ac-226	1.0	β^-:82.8;β^+:17.2;α:~	1.208 d	0.34	3.2978E+02	3.2848E+05	2.1279E+05	10
>2063	Ac-227	1.5	β^-:98.62;α:1.38	21.773 y	0.01	6.9333E+04	1.4812E+04	5.6237E+02	6
>2064	Ac-228	3.0	β^-	6.150 h	0.33		4.4018E+05	9.6325E+05	6
2065	Ac-229	1.5	β^-	1.045 h	0.80		3.9083E+05	4.3966E+05	4
>2066	Ac-230	1.0	β^-	2.033 m	2.46		9.0980E+05	5.0110E+05	6
>2067	Ac-231	0.5	β^-	7.500 m	1.33		6.2886E+05	4.1681E+05	6
>2068	Ac-232	1.0	β^-	1.983 m	4.20		9.8397E+05	1.1482E+06	6
>2069	Ac-233	0.5	β^-	2.417 m	6.90		9.2070E+05	4.9861E+05	6
>2070	Ac-234	?	β^-	44.000 s	15.91		1.4953E+06	1.4953E+06	6
>2071	Th-224	0.0	α	1.050 s	1.90	7.2250E+06	1.2139E+04	2.3061E+04	6
>2072	Th-225	1.5	α	8.720 m	0.46	5.9824E+06	7.2427E+04	1.4582E+05	8
>2073	Th-226	0.0	α	30.570 m	0.33	6.4201E+06	1.9861E+04	8.6298E+03	6
>2074	Th-227	0.5	α	18.718 d	0.03	6.0075E+06	4.4505E+04	1.1970E+05	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>2075	Th-228	0.0	α	1.913 y	0.03	5.4975E+06	2.0481E+04	3.0770E+03	6
>2076	Th-229	2.5	α	7340.164 y	2.18	4.9470E+06	1.1590E+05	9.0314E+04	6
+2077	Th-229m	1.5	IT	2.917 d	71.43			3.5000E+00	6
>2078	Th-230	0.0	α:100.0;SF:~	7.54E+04 y	0.40	4.7474E+06	1.2399E+04	1.2765E+03	6
>2079	Th-231	2.5	β^-	1.063 d	0.04		1.6494E+05	2.5815E+04	6
>2080	Th-232	0.0	α:100.0;SF:~	1.41E+10 y	0.43	4.0774E+06	1.3035E+04	1.2430E+03	6
>2081	Th-233	1.5	β^-	22.300 m	0.45		4.1218E+05	3.7495E+04	6
>2082	Th-234	0.0	β_m^-	24.090 d	0.12		6.0556E+04	8.8014E+03	6
>2083	Th-235	2.5	β^-	6.900 m	2.90		6.4000E+05	6.4000E+05	6
>2084	Pa-226	?	α_g:37.0;α_m:37.0; β^+:26.0	1.800 m	11.11	5.0965E+06	2.4579E+05	2.4579E+05	6
2085	Pa-227	?	β^+:15.0;α:85.0	38.300 m	0.78	5.5658E+06	4.7195E+03	1.4027E+04	4
>2086	Pa-228	3.0	α:2.0;β^+:98.15	22.000 h	4.55	1.2165E+05	9.4090E+04	1.3317E+06	6
>2087	Pa-229	2.5	α:0.48;β^+:99.52	1.500 d	3.33	2.6444E+04	6.5856E+03	6.4868E+04	6
2088	Pa-230	?	β^-:9.5;β^+:90.5;α:~	17.400 d	2.87	1.6205E+02	7.0494E+04	6.9875E+05	4
>2089	Pa-231	1.5	α:100.0;SF:~	3.28E+04 y	0.34	5.0613E+06	5.2297E+04	3.8726E+04	6
>2090	Pa-232	2.0	β^-:100.0;β^+:~	1.310 d	1.53		1.6815E+05	9.3641E+05	6
>2091	Pa-233	1.5	β^-	27.000 d	0.37		1.9217E+05	2.2048E+05	6
>2092	Pa-234	4.0	β^-	6.780 h	0.44		3.8592E+05	1.4346E+06	6
>2093	Pa-234m	0.0	β^-:99.85;IT:0.15	1.170 m	2.56		8.1650E+05	1.9739E+04	6
>2094	Pa-235	1.5	β_m^-	24.200 m	1.24		4.6414E+05	9.8675E+03	6
>2095	Pa-236	1.0	β^-	9.100 m	1.10		8.6425E+05	8.0565E+05	6
>2096	Pa-237	0.5	β^-	8.700 m	2.30		5.7140E+05	6.0785E+05	6
2097	Pa-238	3.0	β^-	2.300 m	4.35		6.5893E+05	1.9894E+06	4
>2098	U-228	0.0	α	9.100 m	2.20	6.6129E+06	2.6543E+04	5.2744E+03	8
>2099	U-229	1.5	β^+:80.0;α:20.0	58.000 m	5.17	1.2952E+06	3.5013E+05	3.5013E+05	6
>2100	U-230	0.0	α	20.800 d	10.10	5.9714E+06	1.9419E+04	2.6811E+03	6
2101	U-231	2.5	β^+:99.99;α:~	4.200 d	2.38	2.7756E+02	6.0766E+04	9.4841E+04	4
>2102	U-232	0.0	α:100.0;SF:~	69.801 y	0.72	5.3970E+06	1.6844E+04	1.6853E+03	6
>2103	U-233	2.5	α	1.59E+05 y	0.13	4.9041E+06	7.5965E+03	1.2254E+03	6
>2104	U-234	0.0	α:100.0;SF:~	2.46E+05 y	0.12	4.8420E+06	1.4144E+04	1.4502E+03	6
>2105	U-235	3.5	α:100.0;SF:~	7.04E+08 y	0.07	4.4646E+06	5.0672E+04	1.6362E+05	6
>2106	U-235m	0.5	IT	26.000 m	7.69		7.6800E+01	1.9200E-10	6
>2107	U-236	0.0	α:100.0;SF:~	2.37E+07 y	0.84	4.5717E+06	1.1059E+04	1.2021E+03	6
>2108	U-237	0.5	β^-	6.750 d	0.15		1.9968E+05	1.4338E+05	6
>2109	U-238	0.0	α:99.99;SF:~	4.47E+09 y	0.07	4.2678E+06	1.0208E+04	1.4917E+03	6
>2110	U-239	2.5	β^-	23.470 m	0.21		4.0991E+05	5.1571E+04	6
>2111	U-240	0.0	β^-	14.100 h	1.42		1.4543E+05	9.2581E+03	6
>2112	U-241	3.5	β^-	5.000 m	0.00		6.4667E+05	6.4667E+05	6
2113	U-242	0.0	β^-	16.833 m	2.97		3.0000E+03	4.0000E+04	7
2114	U-243	?	β^-	2.667 m	50.00		9.9000E+05	9.9000E+05	10
2115	U-244	?	β^-	2.617 m	50.96		5.9300E+05	5.9300E+05	10
2116	U-245	?	β^-	11.400 s	52.63		1.2200E+06	1.2200E+06	10
>2117	Np-230	?	β^+:97.0;α:3.0	4.600 m	6.52	2.0346E+05	1.1721E+06	1.1721E+06	6
2118	Np-231	2.5	β^+:98.0;α:2.0	48.800 m	0.41	1.0192E+05	2.1795E+05	1.1968E+06	4
>2119	Np-232	4.0	β^+	14.700 m	2.04		8.6107E+04	1.1757E+06	8
>2120	Np-233	2.5	α:~;β^+:100.0	36.200 m	0.28		8.4208E+03	8.6026E+04	8
>2121	Np-234	0.0	β^+	4.400 d	2.27		3.3126E+04	1.1020E+06	8
2122	Np-235	2.5	β^+:100.0;α:~	1.084 y	0.30	7.2220E+01	2.9296E+03	7.1208E+03	4
>2123	Np-236	6.0	β^-:11.8;β^+:88.04;α:0.16	1.52E+05 y	1.97	8.1087E+03	2.3960E+05	1.5299E+05	6
2124	Np-236m	1.0	β^-:50.0;β^+:50.0	22.500 h	1.33		9.1412E+04	4.9134E+04	10
>2125	Np-237	2.5	α	2.14E+06 y	0.47	4.8602E+06	3.8306E+04	3.2400E+04	6
>2126	Np-238	2.0	β^-	2.117 d	0.09		2.3246E+05	6.4432E+05	6
>2127	Np-239	2.5	β^-	2.355 d	0.17		2.6284E+05	1.8219E+05	6
>2128	Np-240	5.0	β^-	1.083 h	4.62		4.6684E+05	1.2468E+06	6
>2129	Np-240m	1.0	β^-:99.89;IT:0.11	7.400 m	2.70		6.8296E+05	3.3680E+05	6
>2130	Np-241	2.5	β^-	13.900 m	1.44		4.3722E+05	3.6085E+04	6
>2131	Np-242	1.0	β^-	2.200 m	9.09		8.8866E+05	2.4323E+05	6
>2132	Np-242m	6.0	β^-	5.500 m	1.82		9.0053E+05	9.0053E+05	6
>2133	Np-243	2.5	β^-	1.850 m	8.11		7.0800E+05	7.0800E+05	6
>2134	Np-244	7.0	β^-	2.290 m	6.99		1.1313E+06	1.1313E+06	6
2135	Np-245	?	β^-	38.400 s	49.48		8.9000E+05	8.9000E+05	10
2136	Np-246	?	β^-	16.000 s	50.00		1.5130E+06	1.5130E+06	10
>2137	Pu-232	0.0	β^+:89.0;α:11.0	33.700 m	1.48	7.3877E+05	4.4767E+04	8.9534E+04	6
2138	Pu-233	?	β^+:99.88;α:0.12	20.900 m	1.91	7.6920E+03		3.3085E+06	4
>2139	Pu-234	0.0	β^+:94.0;α:6.0	8.800 h	1.14	3.7861E+05	1.8518E+04	3.7036E+04	6
>2140	Pu-235	2.5	α:~;β^+:100.0	25.300 m	1.98	1.2851E+02	1.3110E+04	8.8530E+04	8
>2141	Pu-236	0.0	α:100.0;SF:~	2.858 y	0.21	5.8524E+06	1.3387E+04	1.5831E+03	6
>2142	Pu-237	3.5	β^+:100.0;α:~	45.300 d	0.44	2.3409E+02	1.7499E+04	5.5156E+04	6
>2143	Pu-237m	0.5	IT	0.180 s	11.11			1.4554E+05	6
>2144	Pu-238	0.0	α:100.0;SF:~	87.700 y	0.34	5.5798E+06	1.1189E+04	1.5483E+03	6
>2145	Pu-239	0.5	α_g:0.06;α_m:99.94;SF:~	2.41E+04 y	0.05	5.2377E+06	7.9349E+03	7.2773E+02	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
>2146	Pu-240	0.0	α:100.0;SF:~	6562.997 y	0.08	5.2430E+06	1.1116E+04	1.3629E+03	6
>2147	Pu-241	2.5	β^-:100.0;α:~	14.330 y	0.28	1.2258E+02	5.2354E+03	1.7108E+00	6
>2148	Pu-242	0.0	α:100.0;SF:~	3.74E+05 y	0.29	4.9733E+06	9.3808E+03	1.2911E+03	6
>2149	Pu-243	3.5	β^-	4.956 h	0.06		1.7365E+05	2.5083E+04	6
>2150	Pu-244	0.0	α:99.88;SF:0.13	8.00E+07 y	1.12	4.8725E+06	7.7146E+03	9.7558E+03	6
>2151	Pu-245	4.5	β^-	10.500 h	0.95		3.3143E+05	3.9858E+05	6
>2152	Pu-246	0.0	β_m^-	10.850 d	0.18		1.1488E+05	1.2378E+05	6
>2153	Pu-247	0.5	β^-	2.270 d	10.13		6.1667E+05	6.1667E+05	6
2154	Am-237	2.5	β^+:99.98;α:0.03	1.217 h	1.37	1.5364E+03	8.3233E+04	4.0321E+05	4
2155	Am-238	1.0	β^+:100.0;α:~	1.633 h	2.04	6.0415E-02	8.4122E+04	8.9494E+05	4
2156	Am-239	2.5	β^+:99.99;α:0.01	11.900 h	0.84	5.8526E+02	1.2482E+05	2.6792E+05	4
>2157	Am-240	3.0	β^+:100.0;α:~	2.117 d	0.59	1.0383E+01	8.2950E+04	1.0313E+06	6
>2158	Am-241	2.5	α:100.0;SF:~	432.808 y	0.16	5.5574E+06	3.9081E+04	2.7510E+04	6
>2159	Am-242	1.0	β^-:83.2;β^+:16.8	16.040 h	0.19		1.8268E+05	1.6699E+04	6
>2160	Am-242m	5.0	IT:99.54;α:0.46;SF:~	141.003 y	1.42	2.4779E+04	4.5953E+04	4.1829E+03	6
>2161	Am-243	2.5	α:100.0;SF:~	7364.976 y	0.30	5.3590E+06	2.3934E+04	5.6965E+04	6
>2162	Am-244	6.0	β^-	10.100 h	0.99		3.0810E+05	8.4340E+05	6
>2163	Am-244m	1.0	β^-:99.96;β^+:0.04	26.000 m	7.69		5.0389E+05	1.2440E+04	6
>2164	Am-245	2.5	β^-	2.050 h	0.49		2.8473E+05	2.7744E+04	6
>2165	Am-246	7.0	β^-	39.000 m	7.69		7.1534E+05	7.7520E+05	6
>2166	Am-246m	2.0	β^-	25.000 m	0.80		4.8460E+05	1.0161E+06	6
>2167	Am-247	2.5	β^-	23.000 m	5.65		5.6910E+05	1.2890E+05	8
>2168	Am-248	?	β^-	3.000 m	0.00		1.0560E+06	1.0560E+06	6
>2169	Am-249	?	β^-	1.000 m	0.00		7.8334E+05	7.8334E+05	6
2170	Am-250	2.5	β^-	5.100 m	32.68		1.3867E+06	1.3867E+06	9
>2171	Cm-238	0.0	β^+:90.0;α:10.0	2.400 h	4.17	6.6251E+05	4.4100E+04	8.8200E+04	6
2172	Cm-239	3.5	β^+	3.000 h	33.33		1.5245E+05	1.2100E+06	10
>2173	Cm-240	?	α	27.000 d	3.70	6.3697E+06			6
>2174	Cm-241	0.5	β^+:99.0;α:1.0	32.800 d	0.61	6.0294E+04	1.4084E+05	4.9676E+05	6
>2175	Cm-242	0.0	α:100.0;SF:~	162.931 d	0.04	6.2065E+06	1.0173E+04	1.3729E+03	6
>2176	Cm-243	2.5	β^+:0.24;α:99.76	30.001 y	6.67	5.9405E+06	1.3922E+05	1.3317E+05	6
>2177	Cm-244	0.0	α:100.0;SF:~	18.000 y	0.56	5.8937E+06	8.8743E+03	1.2112E+03	6
>2178	Cm-245	3.5	α	8500.194 y	2.35	5.4483E+06	8.1292E+04	9.3800E+04	6
>2179	Cm-246	0.0	α:99.97;SF:0.03	4730.087 y	3.17	5.5143E+06	8.2004E+03	3.0021E+03	6
>2180	Cm-247	4.5	α	1.60E+07 y	3.12	5.0282E+06	2.2388E+04	3.0280E+05	6
>2181	Cm-248	0.0	α:91.74;SF:8.26	3.40E+05 y	1.18	1.9810E+07	6.2911E+03	5.7913E+05	6
>2182	Cm-249	0.5	β^-	1.069 h	0.05		2.8372E+05	1.9675E+04	6
>2183	Cm-250	0.0	α:30.0;SF:70.0	8000.177 y	50.00	1.2958E+08		4.9000E+06	6
>2184	Cm-251	0.5	β^-	16.800 m	1.19		4.5083E+05	1.1000E+05	8
2185	Bk-243	1.5	β^+:99.85;α:0.15	4.500 h	4.44	9.9910E+03	1.6136E+02	1.7669E+05	10
2186	Bk-244	4.0	β^+:99.99;α:~	4.350 h	3.45	7.3236E+05		2.2406E+06	4
>2187	Bk-245	1.5	α:0.12;β^+:99.88	4.940 d	0.61	7.4710E+03	1.2127E+05	2.2680E+05	8
>2188	Bk-246	2.0	β^+	1.800 d	1.11		3.7414E+04	8.4998E+05	8
>2189	Bk-247	1.5	α	1380.027 y	18.12	5.6556E+06	6.3863E+04	1.3983E+05	8
>2190	Bk-248	6.0	α	9.000 y	0.00	5.7741E+06			6
>2191	Bk-248m	1.0	β^-:70.0;β^+:30.0	23.700 h	0.84		1.7792E+05	5.1908E+04	8
>2192	Bk-249	3.5	β^-:100.0;α:~ ;SF:~	320.000 d	1.88	7.9017E+01	3.3038E+04	3.1473E+01	6
>2193	Bk-250	2.0	β^-	3.217 h	0.16		2.9705E+05	9.0541E+05	6
>2194	Bk-251	1.5	β^-	55.600 m	1.98		3.6433E+05	3.6433E+05	6
>2195	Bk-252	?	β^-:50.0;α:50.0	1.800 m	27.78	2.7726E+06	4.1600E+05	4.1600E+05	6
>2196	Bk-253	?	β^-	10.000 m	0.00		5.4300E+05	5.4300E+05	6
>2197	Bk-254	?	β^-	1.000 m	0.00		1.0163E+06	1.0163E+06	6
>2198	Cf-244	0.0	α	19.400 m	3.09	7.3289E+06			6
>2199	Cf-245	2.5	β^+:64.0;α:36.0	45.000 m	3.33	2.6131E+06	3.3525E+05	3.3525E+05	6
>2200	Cf-246	0.0	α	1.488 d	1.40	6.8553E+06	4.1095E+03	1.0037E+03	8
2201	Cf-247	3.5	β^+:99.97;α:0.03	3.111 h	0.98	2.2054E+03	4.2000E+06	2.7000E+06	4
>2202	Cf-248	0.0	α	333.500 d	0.84	6.3519E+06	5.0528E+03	2.6959E+01	6
>2203	Cf-249	4.5	α:100.0;SF:~	351.007 y	0.57	5.9276E+06	2.9846E+04	3.2919E+05	6
>2204	Cf-250	0.0	α:99.92;SF:0.08	13.080 y	0.69	6.2622E+06	5.9584E+03	6.3430E+03	6
>2205	Cf-251	0.5	α	898.018 y	4.90	5.8779E+06	1.8168E+05	1.2026E+05	6
>2206	Cf-252	0.0	α:96.91;SF:3.09	2.645 y	0.30	1.1805E+07	6.0060E+03	2.1738E+05	6
>2207	Cf-253	3.5	β^-:99.69;α:0.31	17.810 d	0.45	1.8823E+04	8.0458E+04	8.3693E+01	6
>2208	Cf-254	0.0	SF:99.69;α:0.31	60.500 d	0.33	1.8317E+04			6
>2209	Cf-255	3.5	β^-:100.0;SF:~;α:~	1.417 h	21.18	1.1474E-02	2.4033E+05	2.4033E+05	6
>2210	Es-249	3.5	α:0.57;β^+:99.43	1.703 h	0.59	3.9219E+04	3.2541E+04	4.0637E+05	8
2211	Es-250	6.0	β^+	8.600 h	1.16		2.3971E+05	1.2208E+06	4
>2212	Es-250m	1.0	β^+	2.220 h	2.25		2.2639E+04	5.3783E+05	8
>2213	Es-251	1.5	β^+:99.5;α:0.5	1.375 d	3.03	3.2981E+04	1.8756E+04	3.7511E+04	6
>2214	Es-252	5.0	α:78.0;β^+:22.0	1.291 y	0.40	5.2323E+06	2.0309E+04	2.0780E+05	8
>2215	Es-253	3.5	α:100.0;SF:~	20.470 d	0.15	6.7336E+06	4.5611E+03	1.0755E+03	6

ID	Nuclide	J	Decay modes	T½	ΔT½ (%)	<α> (eV)	<β> (eV)	<γ> (eV)	Src
2216	Es-254	7.0	α	275.498 d	0.18	6.5095E+06	1.7167E+06	1.5216E+06	4
2217	Es-254m	2.0	β^-:99.59;β^+:0.08;α:0.33	1.638 d	0.57	2.1111E+04	2.3000E+05	4.7000E+05	4
2218	Es-255	3.5	β^-:92.0;α:8.0;SF:~	39.800 d	3.02	6.0830E+05	6.8626E+04	7.2000E+03	4
2219	Es-256	1.0	β^-	22.000 m	10.91		6.9910E+05	5.5633E+05	10
2220	Es-256m	8.0	β^-	7.600 h	32.89		4.2346E+05	4.2727E+04	10
>2221	Es-257	3.5	β^-:100.0;α:~	7.700 d	2.60	2.4180E+01	2.7033E+05	2.7033E+05	6
>2222	Fm-250	0.0	α:89.99;β_m^+:10.0;SF:~	30.000 m	10.00	6.8012E+06	3.2198E+03	6.4396E+03	6
+2223	Fm-250m	?	IT:80.0;α:20.0;SF:~	1.800 s	5.56	1.8115E+06		1.2000E+06	6
2224	Fm-251	4.5	β^+:98.2;α:1.8	5.306 h	1.57	1.2290E+05	1.3700E+04	1.6400E+05	4
>2225	Fm-252	0.0	α	1.058 d	0.20	7.1445E+06	4.2081E+03	3.9517E+01	6
2226	Fm-253	0.5	β^+:88.0;α:12.0	3.000 d	4.00	8.3389E+05	5.7014E+03	9.2842E+04	4
>2227	Fm-254	0.0	α	3.240 h	0.06	7.2956E+06	4.5102E+03	1.1431E+03	8
>2228	Fm-255	3.5	α	20.070 h	0.35	7.1297E+06	6.6457E+04	8.3885E+03	8
>2229	Fm-256	0.0	SF:91.9;α:8.1	2.627 h	0.82	5.6920E+05			6
>2230	Fm-257	4.5	α	100.500 d	0.20	6.6183E+06	1.1774E+05	1.1396E+05	8
2231	Fm-258	0.0	SF	3.70E-04 s	11.62	1.8000E+08			10

Key to listing: Nuclide names may contain 'm' or 'n' following the mass number, these refer to 1st and 2nd isomeric states respectively. A nuclide spin (J) shown by '?' means that it is unknown, the file actually contains -77.777. If no decay mode is given then the nuclide is stable, a single mode is labelled as beta - decay (β^-), beta + or electron capture decay (β^+), an isomeric transition (IT), alpha decay (α), proton decay (p) or neutron decay (n). Combinations of these are shown separated by a comma *e.g.* 'β^-,n' is a beta - followed by neutron emission. If the daughter nuclide is not in the ground state then the decay symbol has the subscript 'm' or 'n'; if it is required then the subscript 'g' distinguishes the daughter in the ground state. Multiple decay modes are separated by a semicolon; for each mode the branching ratio is given in percent. If the percentage branching is less than 0.01% then the symbol '~' is used. The nuclide half-life (T½) is given in units of seconds (s), minutes (m), hours (h), days (d) or years (y); fixed format is used wherever possible, for very short- or long-lived nuclides scientific notation is applied.

Note that the nuclide ^{49}Fe is used in a special fashion by FISPACT. The nuclide is required to be stable and be totally unreactive: this pseudo-nuclide is shown in the listing, but in reality ^{49}Fe is very short lived (75 ms).

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Acknowledgements

The development of EAF and the production of this documentation have been supported by United Kingdom Engineering and Sciences Research Council and the European Communities under the contract of Association between EURATOM and UKAEA, and was carried out within the framework of the European Fusion Development Agreement. The views and opinions expressed herein do not necessarily reflect those of the European Commission.

Disclaimer

Neither the author nor UKAEA accept responsibility for consequences arising from any errors either in the present documentation, or in the EASY-2007 system.

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