Recommended Nuclear Decay Data

Pu-239

Decay Mode: α	Half-Life: (24110 ± 30) y			[2]
Radiation Type	**Energy (keV)**	**Intensity (%)**		**Ref.**
α	5007.6	0.017	2	[7]
α	5054.2	0.023	7	[7]
α	5075.2	0.056	6	[7]
α	5104.7	10.6	13	[7]
α	5142.8	15.1	2	[7]
α	5155.5	73.2	7	[7]
X-ray Ll	11.62	0,1027	21	[2]
X-ray Lα	13.60	1.649	20	[2]
X-ray Lη	15.40	0.0498	10	[2]
X-ray Lβ	17,06	2.27	4	[2]
X-ray Lγ	20.30	0.564	10	[2]
X-ray Kα2	94.65	0.00367	4	[2]
X-ray Kα1	98.43	0.00590	6	[2]
X-ray Kβ1	111.0	0.00225	3	[2]
X-ray Kβ2	114.9	0.00056	6	[2]
γ	12.98	0.0122	7	[2]
γ	38.66	0.0105	3	[2]
γ	51.62	0.0271	5	[2]

weak γ's (I < 0.01 %)

Recommended Nuclear Decay Data

Decay Mode

α	Alpha
β-, β+	Beta
EC	Electron capture
IT	Isomeric transition

Half-Life

s	Seconds
m	Minutes
h	Hours
d	Days
y	Years

Energy

All energies are given in keV. Normally there are energies listed with an intensity ≥ 1 %.

Radiation Type

Auger-L/K	L or K-shell auger electron
ce-K-1	K-shell conversion electron transition 1
ce-L-2	L-shell conversion electron transition 2
α	Alpha particle
β^- max, β^+ max	Beta particle (maximal energy)
β^- av, β^+ av	Beta particle (average energy)
X-ray L	L X-ray
X-ray Kα, Kβ	K X-rays
γ	Gamma ray
γ Annih.	Annihilation radiation
Σ	Signifies weighted mean energies and intensities

Intensity

Values are given in percent. The format used for the uncertainties in the listed values can be illustrated by the following examples:

1.2	56	=	1.2	±	5.6
1.23	56	=	1.23	±	0.56

References

[1] PTB-6.11-97-1, Braunschweig, Oktober 1997
[2] PTB-Ra-16/5, Braunschweig, Mai 2000
[3] LMRI. Table de radionuclides. 1982 ff
[4] NCRP Report No.58, 2nd Edition, February 1985
[5] Table de Radionuclidés, BNM-CEA/DTA/LPRI Commissariat à l´Énergie Atomique – France 1999
[6] National Nuclear Data Center USA, Brookhaven National Laboratory Upton N.Y.
[7] Table of Isotopes, 8th Edition, 1996
[8] BNM-CEA/DTA/DAMRI Nuclear and Atomic Decay Data ; 19/12/98

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