

Recommended Nuclear Decay Data

I-131

Decay Mode: β^-		Half-Life: (8.0207 \pm 0.0009) d		[2]	
Radiation Type		Energy (keV)	Intensity (%)		Ref.
Auger-L		3.43	5.1	3	[4]
Auger-K		24.6	0.60	11	[4]
ce-K-1		45.62	3.54	13	[4]
ce-L-1		74.73	0.472	17	[4]
ce-MNO-1		79.04	0.131	2	[4]
ce-K-7		249.74	0.248	9	[4]
ce-K-14		329.92	1.54	6	[4]
ce-K-1		359.03	0.244	8	[4]
β^- max		247.9	2.11	3	[3]
β^- max		309.9	0.63	1	[3]
β^- max		333.8	7.21	7	[3]
β^- max		606.3	89.9	6	[3]
β^- max		629.7	0.072	7	[3]
X-ray L	Σ	4.3	0.51	5	[2]
X-ray K α	Σ	29.67	4.06	12	[2]
X-ray K β	Σ	33.7	0.88	3	[2]
γ		80.19	2.62	4	[2]
γ	Xe-131m	163.93	0.015	3	[2]
γ		177.21	0.270	4	[2]
γ		232.18	0.0032	5	[2]
γ		272.50	0.0578	12	[2]
γ		284.31	6.14	7	[2]
γ		295.8	0.0018	9	[2]
γ		302.4	0.0047	6	[2]
γ		318.09	0.0776	18	[2]
γ		324.65	0.0212	25	[2]
γ		325.79	0.274	22	[2]
γ		358.4	0.016	6	[2]
γ		364.49	81.7	8	[2]
γ		404.81	0.0547	17	[2]
γ		503.00	0.360	4	[2]
γ		636.99	7.17	10	[2]
γ		642.72	0.217	5	[2]
γ		722.91	1.773	27	[2]

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■ 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 $\geq 1\%$.

■ 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 $K\alpha$, $K\beta$	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:

$$1.2 \quad 56 \quad = \quad 1.2 \pm 5.6$$
$$1.23 \quad 56 \quad = \quad 1.23 \pm 0.56$$

■ 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 Radionuclides, 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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