

Recommended Nuclear Decay Data

Sm-153

Decay Mode: β^-		Half-Life: (1.9284 \pm 0.0004) d		[2]	
Radiation Type		Energy (keV)	Intensity (%)	Ref.	
Auger-L		4.69	54	3	[4]
Auger-K		33.7	4.5	10	[4]
β^- max		637	34.7	16	[4]
β^- max		707	43.5	23	[4]
β^- max		712	0.59	5	[4]
β^- max		809.8	20.9	17	[4]
X-ray L	Σ	5.9	11.3	6	[2]
X-ray K α	Σ	41.31	49.0	16	[2]
X-ray K β	Σ	47.3	12.5	4	[2]
γ		69.67	4.65	5	[2]
γ		75.42	0.233	19	[2]
γ		83.37	0.211	11	[2]
γ		89.49	0.156	7	[2]
γ		97.43	0.755	7	[2]
γ		103.18	29.23	18	[2]

weak γ 's omitted $\Sigma I < 0.4$ %

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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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