



1 Decay Scheme

Ba-137m decays to the ground state by a 661 keV gamma transition.

Le Ba-137m se désexcite vers le niveau fondamental par une transition de 661 keV.

2 Nuclear Data

$T_{1/2}(^{137}\text{Ba}^m)$: 2,552 (1) min

2.1 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	P $_{\gamma+ce}$ × 100	Multipolarity	α _K	α _L	α _T
γ _{1,0} (Ba)	661,659 (3)	100	M4	0,0896 (15)	0,0167 (5)	0,1102 (19)

3 Atomic Data

3.1 Ba

$$\omega_K : 0,900 \quad (4)$$

$$\bar{\omega}_L : 0,110 \quad (5)$$

$$n_{KL} : 0,888 \quad (4)$$

3.1.1 X Radiations

	Energy keV	Relative probability		
X _K	K α_2	31,8174	54,28	
	K α_1	32,1939	100	
	K β_3	36,3045	}	
	K β_1	36,3786	}	
	K β_5''	36,643	}	29,4
	K β_5'	36,666	}	
	K β_2	37,258	}	
	K β_4	37,312	}	7,4
	KO _{2,3}	37,426	}	
	X _L	L ℓ	3,954	
L γ		- 5,973		

3.1.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	25,31 – 26,79	100
KLX	30,09 – 31,36	47,7
KXY	34,84 – 37,41	5,7
Auger L	2,6 – 5,9	

4 Photon Emissions

4.1 X-Ray Emissions

		Energy keV	Photons per 100 disint.	
XL	(Ba)	3,954 — 5,973	0,95 (5)	
XK α_2	(Ba)	31,8174	2,06 (4)	} K α
XK α_1	(Ba)	32,1939	3,80 (7)	
XK β_3	(Ba)	36,3045	}	K' β_1
XK β_1	(Ba)	36,3786	}	
XK β_5''	(Ba)	36,643	}	
XK β_5'	(Ba)	36,666	}	
XK β_2	(Ba)	37,258	}	K' β_2
XK β_4	(Ba)	37,312	0,28 (1)	
XKO $_{2,3}$	(Ba)	37,426	}	

4.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
$\gamma_{1,0}(\text{Ba})$	661,657 (3)	90,07 (20)

5 Electron Emissions

		Energy keV	Electrons per 100 disint.
e _{AL}	(Ba)	2,6 - 5,9	7,7 (1)
e _{AK}	(Ba)		0,8 (1)
	KLL	25,31 - 26,79	}
	KLX	30,09 - 31,36	}
	KXY	34,84 - 37,41	}
ec _{1,0} K	(Ba)	624,216 (3)	8,07 (5)
ec _{1,0} L	(Ba)	655,67 - 656,41	1,50 (3)
ec _{1,0} M	(Ba)	660,36 - 660,88	0,35 (1)

6 Main Production Modes

Separation from Cs-137–Ba-137m

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γ Emission probabilities
per 100 disintegrations

