



1 Decay Scheme

Am-244 decays by beta- emission to a single excited level of Cm-244 (9th excited state).

L'américium 244 se désintègre par émission bêta moins vers le niveau excité de 1040 keV de curium 244, qui se déexcite par transitions gamma vers le niveau fondamental.

2 Nuclear Data

$T_{1/2}({}^{244}\text{Am})$:	10,1	(1)	h
$T_{1/2}({}^{244}\text{Cm})$:	18,11	(3)	a
$Q^{-}({}^{244}\text{Am})$:	1427,3	(10)	keV

2.1 β^{-} Transitions

	Energy keV	Probability $\times 100$	Nature	lg ft
$\beta_{0,9}^{-}$	387,1 (10)	100	1st forbidden non-unique	5,63

2.2 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	P $_{\gamma+ce}$ $\times 100$	Multipolarity	α_K	α_L	α_M	α_T
$\gamma_{1,0}(\text{Cm})$	42,965	100 (21)	E2		760 (11)	214 (3)	1050 (15)
$\gamma_{2,1}(\text{Cm})$	99,383	100 (22)	E2		13,93 (20)	3,94 (6)	19,3 (3)
$\gamma_{3,2}(\text{Cm})$	153,863	72 (15)	E2	0,1741 (25)	1,90 (3)	0,536 (8)	2,81 (40)
$\gamma_{4,3}(\text{Cm})$	205,575	0,66 (15)	E2	0,1409 (20)	0,541 (8)	0,1514 (22)	0,887 (13)
$\gamma_{9,4}(\text{Cm})$	538,402	0,69 (20)	E2	0,0292 (4)	0,01492 (21)	0,00396 (6)	0,0495 (7)
$\gamma_{9,3}(\text{Cm})$	743,977	71 (9)	M1+E2	0,059 (4)	0,0130 (7)	0,00321 (15)	0,077 (5)
$\gamma_{9,2}(\text{Cm})$	897,840 (7)	28 (8)	E2	0,01215 (17)	0,00358 (5)	0,000912 (13)	0,01697 (24)

3 Atomic Data

3.1 Cm

ω_K	:	0,972	(4)
$\bar{\omega}_L$:	0,538	(23)
n_{KL}	:	0,785	(5)

3.1.1 X Radiations

	Energy keV	Relative probability
X _K		
K α_2	104,59	64,7
K α_1	109,271	100
K β_3	122,304	}
K β_1	123,403	}
K β_5''	124,124	}
		37,9
K β_2	126,889	}
K β_4	127,352	}
KO _{2,3}	127,97	}
X _L		
L ℓ	12,633	
L α	14,746 – 14,961	
L η	17,314	
L β	17,286 – 19,688	
L γ	22,735 – 23,527	

3.1.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	78,858 – 89,973	100
KLX	97,226 – 109,267	62
KXY	115,57 – 128,23	9,5
Auger L	6,19 – 14,46	69000

4 Electron Emissions

		Energy keV	Electrons per 100 disint.
e _{AL}	(Cm)	6,19 - 14,46	86 (9)
e _{AK}	(Cm)		0,213 (27)
	KLL	78,858 - 89,973	}
	KLX	97,226 - 109,267	}
	KXY	115,57 - 128,23	}
ec _{1,0} L	(Cm)	18,439 - 23,995	72 (15)
ec _{3,2} K	(Cm)	25,613 (2)	3,3 (7)
ec _{1,0} M	(Cm)	36,628 - 38,956	21 (5)
ec _{1,0} N	(Cm)	41,281 - 42,495	5,7 (12)
ec _{2,1} L	(Cm)	74,857 - 80,413	68 (15)
ec _{2,1} M	(Cm)	93,046 - 95,374	20 (5)
ec _{2,1} N	(Cm)	97,699 - 98,913	5,5 (12)
ec _{3,2} L	(Cm)	129,337 - 134,893	36 (7)
ec _{3,2} M	(Cm)	147,526 - 149,854	10 (2)
ec _{3,2} N	(Cm)	152,179 - 153,393	2,8 (6)
ec _{4,3} L	(Cm)	181,049 - 186,605	0,189 (43)
ec _{4,3} M	(Cm)	199,238 - 201,566	0,053 (12)
ec _{9,3} K	(Cm)	615,727 (5)	3,9 (5)
ec _{9,3} L	(Cm)	719,451 - 725,007	0,86 (10)
ec _{9,3} M	(Cm)	737,640 - 739,968	0,21 (3)
ec _{9,3} N	(Cm)	742,293 - 743,507	0,058 (7)
ec _{9,2} K	(Cm)	769,59 (1)	0,34 (10)
ec _{9,2} L	(Cm)	873,31 - 878,87	0,100 (29)
$\beta_{0,9}^-$	max:	387,1 (10)	100
$\beta_{0,9}^-$	avg:	109,6 (3)	

5 Photon Emissions

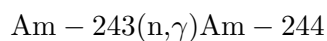
5.1 X-Ray Emissions

		Energy keV	Photons per 100 disint.	
XL	(Cm)	12,633 — 23,527	100 (10)	
XK α_2	(Cm)	104,59	2,2 (3)	} K α
XK α_1	(Cm)	109,271	3,4 (4)	
XK β_3	(Cm)	122,304	}	} K' β_1
XK β_1	(Cm)	123,403	}	
XK β_5''	(Cm)	124,124	}	
XK β_2	(Cm)	126,889	}	} K' β_2
XK β_4	(Cm)	127,352	0,45 (6)	
XKO $_{2,3}$	(Cm)	127,97	}	

5.2 Gamma Emissions

		Energy keV	Photons per 100 disint.
$\gamma_{1,0}$ (Cm)		42,965 (10)	0,096 (20)
$\gamma_{2,1}$ (Cm)		99,383 (4)	5,0 (11)
$\gamma_{3,2}$ (Cm)		153,863 (2)	19 (4)
$\gamma_{4,3}$ (Cm)		205,575 (4)	0,35 (8)
$\gamma_{9,4}$ (Cm)		538,402 (16)	0,66 (19)
$\gamma_{9,3}$ (Cm)		743,977 (5)	66 (8)
$\gamma_{9,2}$ (Cm)		897,840 (7)	28 (8)

6 Main Production Modes



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