

^{138}La ε decay [2016Qu01,1984Ma46](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 146, 1 (2017)	30-Sep-2017

Parent: ^{138}La : $E=0.0$; $J^\pi=5^+$; $T_{1/2}=1.03\times 10^{11}$ y 1; $Q(\varepsilon)=1742$ 3; $\% \varepsilon + \% \beta^+$ decay=65.5 4

^{138}La - $J^\pi, T_{1/2}$: From Adopted Levels of ^{138}La .

^{138}La - $Q(\varepsilon)$: From [2017Wa10](#).

^{138}La - $\% \varepsilon + \% \beta^+$ decay: From Adopted Levels of ^{138}La .

See ^{138}La Adopted Levels for parent information.

[2016Qu01](#): measured $E\beta$, $I\beta$. Deduced electron capture probabilities for K, L and M, Q-value.

[1984Ma46](#): measured $E(\text{K X-ray})$, $I(\text{K X-ray})$. Deduced subshell capture ratio.

Others: [2015Gi03](#), [1997Ni12](#), [1983No02](#), [1996Pa21](#), [1993Ku22](#), [1981Sa42](#), [1979Ta21](#), [1977Ce04](#), [1972Ma31](#), [1966De04](#).

Additional information 1.

 ^{138}Ba Levels

$E(\text{level})^\dagger$	$J^\pi^\dagger$	$T_{1/2}^\dagger$
0.0	0^+	stable
1435.803 10	2^+	

† From Adopted Levels.

 ε, β^+ radiations

$E(\text{decay})$	$E(\text{level})$	$I\varepsilon^\dagger$	$\text{Log } ft$	$I(\varepsilon + \beta^+)^\dagger$	Comments
(306 3)	1435.803	65.5 4	17.24^{2u} 3	65.5 4	$\varepsilon\text{K}=0.635$ 5; $\varepsilon\text{L}=0.277$ 4; $\varepsilon\text{M}+=0.0886$ 14 I ε : from ^{138}La ε decay branching ratio in Adopted Levels of ^{138}La .

† Absolute intensity per 100 decays.

 $\gamma(^{138}\text{Ba})$

$E_\gamma^\dagger$	$I_\gamma^\ddagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. $^\#$	$\alpha^\#$	Comments
1435.795 10	100	1435.803	2^+	0.0	0^+	E2	0.00087	$\alpha=0.00087$; $\alpha(\text{K})=0.00074$ 2 E_γ : 1435.8 4 (1977Ce04), 1435.70 7 (1979Ta21). Mult.: (L+M+...)/K capture ratio=0.48 16 (1984Ma46); L/K=0.391 3, M/K=0.102 3, M/L=0.261 9 (2016Qu01).

† Quoted values are from Adopted Gammas. Values and arguments from this data set are given in comments.

‡ For absolute intensity per 100 decays, multiply by 0.655 4.

$^\#$ Total theoretical internal conversion coefficients, calculated using the BrIcc code ([2008Ki07](#)) with Frozen orbital approximation based on γ -ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays

