

¹²⁸Ba ε decay 1976He04

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Zoltan Elekes and Janos Timar		NDS 129, 191 (2015)	28-Feb-2015

Parent: ¹²⁸Ba: E=0.0; J^π=0⁺; T_{1/2}=2.43 d 5; Q(ε)=553 8; %ε decay=100.0

1976He04: Pr(p,spallation) E=800 MeV, chemical separation, mass separation; Ge(Li), γγ-coincidence.

Others: γ (1967Ju04); γ, ce (1968Ku07).

The decay scheme is that proposed by 1976He04 on the basis of γγ-coincidence and Eγ sums.

α: [Additional information 1](#).

¹²⁸Cs Levels

E(level) [†]	J ^π	T _{1/2}
0.0	1 ⁺	3.66 min 2
187.88 22		
215.44 4	0 ⁻ ,1	
229.50 6	0 ⁻ ,1	
273.440 10	1 ⁺	
317.15 10	0 ⁻ ,1	
359.11 4	0 ⁻ ,1	
374.998 20	(1 ⁺)	

[†] E(levels) are based on a least-squares fit to the Eγ's from 1976He04 (evaluators).

ε radiations

E(decay)	E(level)	Iε [†]	Log ft	Comments
(178 8)	374.998	0.41 3	6.68 6	εK=0.799 4; εL=0.156 3; εM+=0.0451 9
(194 8)	359.11	0.112 12	7.33 7	εK=0.805 3; εL=0.1512 21; εM+=0.0436 7
(236 8)	317.15	0.056 10	7.83 9	εK=0.8160 17; εL=0.1431 13; εM+=0.0409 5
(280 8)	273.440	15.3 8	5.57 4	εK=0.8233 12; εL=0.1376 9; εM+=0.0391 3
(324 8)	229.50	0.116 11	7.83 5	εK=0.8283 8; εL=0.1338 6; εM+=0.03786 20
(338 8)	215.44	0.047 11	8.26 11	εK=0.8296 8; εL=0.1328 6; εM+=0.03754 18
(553 8)	0.0	84.0 8	5.471 17	εK=0.8406 3; εL=0.12456 19; εM+=0.03483 6

[†] Absolute intensity per 100 decays.

γ(¹²⁸Cs)

Iγ normalization: from %ε(to g.s.)=84.0 8 (see ε data from ¹²⁸Ba ε decay).

Eγ	Iγ ^{††}	E _i (level)	J _i ^π	E _f	J _f ^π
101.72 20	0.13 3	374.998	(1 ⁺)	273.440	1 ⁺
129.24 20	0.11 3	317.15	0 ⁻ ,1	187.88	
143.80 20	0.07 3	359.11	0 ⁻ ,1	215.44	0 ⁻ ,1
159.71 10	0.09 3	374.998	(1 ⁺)	215.44	0 ⁻ ,1
187 [#] 1	0.26 [#] 15	187.88		0.0	1 ⁺
187 [#] 1	0.26 [#] 15	374.998	(1 ⁺)	187.88	
215.47 4	0.48 4	215.44	0 ⁻ ,1	0.0	1 ⁺
229.50 6	0.73 6	229.50	0 ⁻ ,1	0.0	1 ⁺

Continued on next page (footnotes at end of table)

^{128}Ba ε decay **1976He04** (continued) $\gamma(^{128}\text{Cs})$ (continued)

E_γ	I_γ ^{†‡}	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	α	Comments
273.44 1	100	273.440	1 ⁺	0.0	1 ⁺	M1(+E2)	0.0557	$\alpha(\text{K})_{\text{exp}}=0.059$ 21 $\alpha(\text{K})_{\text{exp}}$ from 1968Ku07 .
317.16 10	0.22 4	317.15	0 ⁻ ,1	0.0	1 ⁺			
359.10 4	0.66 6	359.11	0 ⁻ ,1	0.0	1 ⁺			
374.99 2	2.13 10	374.998	(1 ⁺)	0.0	1 ⁺			

[†] Relative to $I(273.44\gamma)=100$.

[‡] For absolute intensity per 100 decays, multiply by 0.145 7.

Multiply placed with undivided intensity.

^{128}Ba ϵ decay 1976He04

Decay Scheme

Legend

- $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- $I_\gamma > 10\% \times I_\gamma^{\text{max}}$
- Coincidence

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
& Multiply placed: undivided intensity given

