

^{134}Pr ε decay (17 min) [1973Ar13,1978KoYT](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	A. A. Sonzogni	NDS 103, 1 (2004)	31-Jul-2004

Parent: ^{134}Pr : $E=0.0+x$; $J^\pi=2^-$; $T_{1/2}=17$ min 2; $Q(\varepsilon)=6320$ 40; $\% \varepsilon + \% \beta^+$ decay=100.0

Preliminary data from [1978KoYT](#) and [1973Ar13](#).

 ^{134}Ce Levels

E(level) [†]	J^π [‡]	$T_{1/2}$	E(level) [†]	J^π [‡]	E(level) [†]	J^π [‡]
0.0	0 ⁺	3.16 d 4	1643.01 19	4 ⁺	2027.43 20	(4) ⁺
409.23 10	2 ⁺		1774.9 4		2313.7 3	1,2,3
965.40 14	2 ⁺		1812.12 20	(4) ⁺	2373.3? 10	
1048.83 18	4 ⁺		1903.8 4	1,2,3	2545.26 19	(3)
1382.98 18	3 ⁺		1989.1 4	1,2,3		

[†] From least-squares fit to E_γ .

[‡] From Adopted Levels.

 ε, β^+ radiations

E(decay)	E(level)	$I\beta^+$ [‡]	$I\varepsilon$ [‡]	$\log ft$ [†]	$I(\varepsilon + \beta^+)$ [‡]	Comments
(3.77×10^3) 4)	2545.26	11	6.4	6.1	17	av $E\beta=1245$ 19; $\varepsilon K=0.318$ 9; $\varepsilon L=0.0439$ 13; $\varepsilon M+=0.0124$ 4
(3.95×10^3) 4)	2373.3?	1.0	0.50	7.2	1.5	av $E\beta=1324$ 19; $\varepsilon K=0.282$ 8; $\varepsilon L=0.0390$ 11; $\varepsilon M+=0.0110$ 3
(4.01×10^3) 4)	2313.7	5.9	2.7	6.5	8.6	av $E\beta=1352$ 19; $\varepsilon K=0.271$ 8; $\varepsilon L=0.0374$ 11; $\varepsilon M+=0.0105$ 3
(4.33×10^3) 4)	1989.1	3.5	1.2	6.9	4.7	av $E\beta=1503$ 19; $\varepsilon K=0.218$ 6; $\varepsilon L=0.0300$ 9; $\varepsilon M+=0.00844$ 23
(4.42×10^3) 4)	1903.8	4.1	1.3	6.9	5.4	av $E\beta=1543$ 19; $\varepsilon K=0.206$ 6; $\varepsilon L=0.0283$ 8; $\varepsilon M+=0.00797$ 22
(4.55×10^3) 4)	1774.9	1.6	0.44	7.4	2.0	av $E\beta=1603$ 19; $\varepsilon K=0.189$ 5; $\varepsilon L=0.0260$ 7; $\varepsilon M+=0.00732$ 20
(4.94×10^3) 4)	1382.98	3.9	0.81	7.2	4.7	av $E\beta=1787$ 19; $\varepsilon K=0.147$ 4; $\varepsilon L=0.0202$ 6; $\varepsilon M+=0.00569$ 15
(5.35×10^3) 4)	965.40	20	3.1	6.7	23	av $E\beta=1984$ 19; $\varepsilon K=0.114$ 3; $\varepsilon L=0.0157$ 4; $\varepsilon M+=0.00442$ 11
(5.91×10^3) 4)	409.23	32	3.4	6.8	35	av $E\beta=2248$ 19; $\varepsilon K=0.0836$ 19; $\varepsilon L=0.0115$ 3; $\varepsilon M+=0.00323$ 7

[†] Approximate values obtained from I_γ .

[‡] Absolute intensity per 100 decays.

 $\gamma(^{134}\text{Ce})$

I_γ normalization: From $\Sigma I(\gamma+ce)=100$ to g.s. (assuming no $\varepsilon+\beta^+$ feeding to g.s.).

E_γ [†]	I_γ ^{‡@}	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [#]	δ [#]	α ^{&}	Comments
169.2 5	0.07	1812.12	(4) ⁺	1643.01	4 ⁺				
^x 206.8 5	0.3 2								
215.3 2	1.3	2027.43	(4) ⁺	1812.12	(4) ⁺				
231.3 4	1.0 2	2545.26	(3)	2313.7	1,2,3				
384.3 4	0.7	2027.43	(4) ⁺	1643.01	4 ⁺				
^x 392.0 6	0.4 1								
409.2 1	65	409.23	2 ⁺	0.0	0 ⁺	E2		0.0190	$\alpha(K)=0.0156$ 5; $\alpha(L)=0.00264$ 8; $\alpha(M)=0.00056$ 2
417.2 5	1.0	1382.98	3 ⁺	965.40	2 ⁺	M1+E2	6.0 +22-14	0.0181 1	$\alpha(K)=0.0150$ 1; $\alpha(L)=0.00249$ 1; $\alpha(M)=0.00053$
429.4 4	0.3	1812.12	(4) ⁺	1382.98	3 ⁺				

Continued on next page (footnotes at end of table)

^{134}Pr ε decay (17 min) **1973Ar13,1978KoYT** (continued) $\gamma(^{134}\text{Ce})$ (continued)

$E_\gamma^\dagger$	$I_\gamma^\ddagger@$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [#]	$\delta^\#$	$\alpha^\&$	Comments
^x 480.4 6	1.3 3								
518.1 5	3.1 10	2545.26	(3)	2027.43	(4) ⁺				
556.0 2	9.8	965.40	2 ⁺	409.23	2 ⁺	M1+E2	+9 +16-4	0.0082 1	$\alpha(\text{K})=0.00686$ 10; $\alpha(\text{L})=0.00104$ 1
594.1 3	0.2	1643.01	4 ⁺	1048.83	4 ⁺	M1+E2	10 +100-5	0.00693 10	$\alpha(\text{K})=0.00579$ 9; $\alpha(\text{L})=0.00086$ 1
639.6 2	1.6	1048.83	4 ⁺	409.23	2 ⁺	E2		0.00572	$\alpha(\text{K})=0.00479$ 15; $\alpha(\text{L})=0.00070$ 2
644.4 4	0.3	2027.43	(4) ⁺	1382.98	3 ⁺				
677.6 2	0.5	1643.01	4 ⁺	965.40	2 ⁺	E2		0.00496	$\alpha(\text{K})=0.00416$ 13; $\alpha(\text{L})=0.00060$ 2
^x 685.7 5	1.0 4								
763.2 2	0.6	1812.12	(4) ⁺	1048.83	4 ⁺				
^x 794.5 5	0.4 2								
809.5 5	0.4 2	1774.9		965.40	2 ⁺				
846.6 5	0.4	1812.12	(4) ⁺	965.40	2 ⁺				
965.5 2	9.8	965.40	2 ⁺	0.0	0 ⁺	E2		0.00220	$\alpha(\text{K})=0.00186$ 6; $\alpha(\text{L})=0.00025$ 1
973.9 2	3.6	1382.98	3 ⁺	409.23	2 ⁺	M1+E2	4.0 +3-2	0.00221 1	$\alpha(\text{K})=0.00188$ 1; $\alpha(\text{L})=0.00025$
978.7 2	0.8	2027.43	(4) ⁺	1048.83	4 ⁺				
^x 1000.0 5	1.0 2								
1062.1 ^a 5	0.07	2027.43	(4) ⁺	965.40	2 ⁺				
1162.5 5	0.5 2	2545.26	(3)	1382.98	3 ⁺				
^x 1213.3 6	0.5 1								
1233.9 6	0.1	1643.01	4 ⁺	409.23	2 ⁺				
1365.7 5	1.1 3	1774.9		409.23	2 ⁺				
1494.6 3	4.0 6	1903.8	1,2,3	409.23	2 ⁺				
1579.9 3	3.5 5	1989.1	1,2,3	409.23	2 ⁺				
1904.3 3	7.4 10	2313.7	1,2,3	409.23	2 ⁺				
1964.1 10	1.1 5	2373.3?		409.23	2 ⁺				
2136.0 2	8.0 10	2545.26	(3)	409.23	2 ⁺				
^x $\approx$ 2233	1.5 3								
^x $\approx$ 2331	2.1 4								

[†] From **1978KoYT**.[‡] From **1973Ar13**; intensities suitably divided.[#] From Adopted Gammas.[@] For absolute intensity per 100 decays, multiply by 1.34.[&] Total theoretical internal conversion coefficients, calculated using the BrIcc code (**2008Ki07**) with Frozen orbital approximation based on γ -ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.^a Placement of transition in the level scheme is uncertain.^x γ ray not placed in level scheme.

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Legend

- $\longrightarrow$ $I_\gamma < 2\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma < 10\% \times I_\gamma^{\max}$
 $\longrightarrow$ $I_\gamma > 10\% \times I_\gamma^{\max}$
 $\cdots$ γ Decay (Uncertain)
 $\bullet$ Coincidence

Decay Scheme

Intensities: I_γ per 100 parent decays