^{94}Rb β^-n decay 1982Kr11,1985Gr15

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 112, 1163 (2011)	15-Dec-2010

Parent: ^{94}Rb: E=0.0; $J^\pi=3^{(-)}$; $T_{1/2}$=2.702 s *5*; Q(β^-n)=3462 *11*; %β^-n decay=10.18 *24*

^{94}Rb-%β^-n decay: From %β^-n=10.18 *24* for ^{94}Rb (weighted average of 10.9 *7* (1993Ru01), 9.7 *6* (1983Ok07), 11.1 *9* (1983En05), 10.1 *6* (1980Lu04), 10.0 *10* (1980ReZQ; May supersede 11.6 *7* (1979WaZU) and 13.7 *10* (1977Re05) reported by At least one of the same authors), 9.7 *5* (1979Ri09), 9.6 *8* (1975As04), 12.1 *13* (8.5 *9* from 1974Ro15, recalibrated by 1981Bj01), 10.3 *16* (revision by 1993Ru01 of 11.0 *22* from 1972Sc48), 11.1 *11* (1969Am01). the unweighted average of these data is 10.46 *26*.

Others: 1981Ho07, 1980Re03, 1977Re06, 1977Ru09.

<E_n>: 413 (1980Re03; see also 1977Re06). Neutron spectra: see 1977Ru09, 1980Re03 and 1985Gr15.

1985Gr15: TRISTAN ISOL facility; gas-filled proton recoil proportional counters, pulse-shape discrimination (FWHM≈2-11 keV for E(n)<200 keV); measured β^- delayed n energy spectrum, E(n)=8 to≈1300.

1982Kr11: OSTIS mass separator; measured nγ coin, $\beta\gamma$ coin, $\gamma\gamma$ coin, I(n).

1981Ho07: OSIRIS mass separator; measured Eγ, Iγ, I(n).

^{93}Sr Levels

E(level)†	J^π‡
0.0	$5/2^+$
213.4	$(9/2)^+$
432.5	$(5/2,7/2,9/2)^+$
986.1	$(9/2^+)$
1142.5	$(5/2^+,7/2,9/2^+)$
1148.2	$(5/2^+,7/2,9/2^+)$
1238.3	$(7/2^+)$
1385.3	
1529.2	

† From 1982Kr11; uncertainty not stated by authors.
‡ From Adopted Levels.

$\gamma(^{93}Sr)$

Iγ normalization: From Σ(I(γ+ce) to g.s.)=100%.

E_γ†	I_γ†#	E_i(level)	J_i^π	E_f	J_f^π	Mult.‡	α@	Comments
213.4	72	213.4	$(9/2)^+$	0.0	$5/2^+$	E2	0.0639	α(K)=0.0556 *8*; α(L)=0.00701 *10*; α(M)=0.001178 *17*; α(N+..)=0.0001499 *21* α(N)=0.0001422 *20*; α(O)=7.67×10^{-6} *11*
219.2	17	432.5	$(5/2,7/2,9/2)^+$	213.4	$(9/2)^+$	M1,E2	0.039 *19*	α(K)=0.034 *17*; α(L)=0.0042 *22*; α(M)=0.0007 *4*; α(N+..)=9.E−5 *5* α(N)=9.E−5 *5*; α(O)=4.8×10^{-6} *22*
432.5	100	432.5	$(5/2,7/2,9/2)^+$	0.0	$5/2^+$	M1,E2	0.0047 *11*	α(K)=0.0042 *9*; α(L)=0.00047 *12*; α(M)=7.9×10^{-5} *19*; α(N+..)=1.04×10^{-5} *24* α(N)=9.8×10^{-6} *23*; α(O)=6.1×10^{-7} *12* I$_\gamma$: I(432γ)/I(n)=9.8 *6* (1981Ho07).
710.0&	29	1142.5	$(5/2^+,7/2,9/2^+)$	432.5	$(5/2,7/2,9/2)^+$			

Continued on next page (footnotes at end of table)

^{94}Rb β^-n decay 1982Kr11,1985Gr15 (continued)

$\gamma(^{93}Sr)$ (continued)

E_γ[†]	I_γ[†#]	E_i(level)	J_i^π	E_f	J_f^π
929.0	3	1142.5	$(5/2^+,7/2,9/2^+)$	213.4	$(9/2)^+$
934.7	1	1148.2	$(5/2^+,7/2,9/2^+)$	213.4	$(9/2)^+$
986.1	48	986.1	$(9/2^+)$	0.0	$5/2^+$
1096.7	1	1529.2		432.5	$(5/2,7/2,9/2)^+$
1142.6	2	1142.5	$(5/2^+,7/2,9/2^+)$	0.0	$5/2^+$
1148.2	6	1148.2	$(5/2^+,7/2,9/2^+)$	0.0	$5/2^+$
1238.3	6	1238.3	$(7/2^+)$	0.0	$5/2^+$
1385.2	8	1385.3		0.0	$5/2^+$

[†] From 1982Kr11; uncertainty not stated by authors.
[‡] From Adopted Gammas.
[#] For absolute intensity per 100 decays, multiply by 0.0420 *10*.
[@] 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.
[&] Placement of transition in the level scheme is uncertain.

Delayed Neutrons (^{93}Sr)

Particle normalization: From $\%\beta^-$n=10.18 *24* for ^{94}Rb (weighted average of 10.9 *7* (1993Ru01), 9.7 *6* (1983Ok07), 11.1 *9* (1983En05), 10.1 *6* (1980Lu04), 10.0 *10* (1980ReZQ; May supersede 11.6 *7* (1979WaZU) and 13.7 *10* (1977Re05) reported by At least one of the same authors), 9.7 *5* (1979Ri09), 9.6 *8* (1975As04), 12.1 *13* (8.5 *9* from 1974Ro15, recalibrated by 1981Bj01), 10.3 *16* (revision by 1993Ru01 of 11.0 *22* from 1972Sc48), 11.1 *11* (1969Am01). the unweighted average of these data is 10.46 *26*.

E(n)[‡]	E(^{93}Sr)	I(n)[†#]	Comments
12			
28.7			
43			
65.5			
88			
132.2			
179			
331			
	0.0	73 *3*	Other I(n): 79% 3 (1981Ho07).
	213.4	6.0 *9*	Other I(n): 4.5% 6 (1981Ho07).
	432.5	10.2 *13*	Other I(n): 10.2% 13 (1981Ho07).
	986.1	5.2 *6*	Other I(n): 6.3% 10 (1981Ho07).
	1142.5	4.2 *5*	
	1148.2	0.7 *2*	
	1238.3	0.7 *2*	Other I(n): <1.0% (1981Ho07).
	1385.3	0.9 *2*	
	1529.2	0.1 *1*	

[†] Partial branching, given by 1982Kr11 as % of total n-emission probability. Although many levels are available for population,≥98.5% of neutrons feed the nine lowest energy levels, as listed here.
[‡] From 1985Gr15. Due to the complexity of the spectrum, authors do not attempt to infer intensities for any lines, or energies for weak lines. Other spectral data: 1977Ru09 (coarser resolution).
[#] For absolute intensity per 100 decays, multiply by 0.1018 *24*.

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Decay Scheme

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

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