

^{96}Rb β^- -n decay **1985Gr15,1982Kr11**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, G. Mukherjee, A. A. Sonzogni		NDS 111, 2555 (2010)	30-Jun-2009

Parent: ^{96}Rb : $E=0.0$; $J^\pi=2^{(-)}$; $T_{1/2}=203$ ms 3; $Q(\beta^-n)=5870$ 26; $\% \beta^-n$ decay=13.3 7

^{96}Rb - $T_{1/2}$: from [2008Ab19](#).

^{96}Rb - $\% \beta^-n$ decay: from [2002Pf04](#).

[1980ReZQ](#), [1977Re05](#) measured β^- 's and $\beta(t)$ and neutrons; electron multiplier, moderated ^3He .

[1979Ri09](#) measured β^- 's and n's and n(t); β^-n detector (scin, bf₃).

[1981En05](#) measured β^- 's (Si) and n's and n(t) (bf₃).

[1981Ho07](#) measured γ 's (Ge(Li)) and neutrons (moderated ^3He).

[1982Kr11](#) measured γ 's and $\gamma\gamma$ -coin and $\beta\gamma$ -coin (Ge(Li)) and $n\gamma$ -coin (^3He , Ge(Li)).

[1985Gr15](#) measured neutrons; gas-filled pc's.

All data are from [1982Kr11](#); results from [1981Ho07](#) are consistent except as noted. Others: [1989GoZY](#), [1986GoZV](#), and [1986CIZW](#). See also [1989BrZI](#).

 ^{95}Sr Levels

E(level) [†]	J^π [†]	$T_{1/2}$ [†]	E(level) [†]	J^π [†]
0.0	1/2 ⁺	23.90 s 14	1121.01 10	1/2 ⁺ to 7/2 ⁺
352.02 6	(3/2) ⁺		1238.81 13	(9/2 ⁺)
556.09 8	(7/2) ⁺	21.9 ns 5	1259.66 8	1/2 ⁺ , 3/2, 5/2
680.70 6	3/2 ⁺ , 5/2 ⁺		1439.30 [‡] 10	1/2 ⁺ , 3/2, 5/2
1003.70 [‡] 9	1/2 ⁺ , 3/2, 5/2		1743.53 [‡] 11	
1012.25 8	1/2 ⁺ , 3/2 ⁺ , 5/2 ⁺		1843.71 [‡] 11	

[†] From the Adopted Levels.

[‡] Not reported by [1981Ho07](#).

 $\gamma(^{95}\text{Sr})$

I γ normalization: From $\Sigma I\gamma$ (to g.s.) per 100 β -n decays=76% 3, as the neutron intensity to the g.s. is equal to 24 % 3 per 100 β -n decays.

E_γ [†]	I_γ ^{†@}	E_i (level)	J_i^π	E_f	J_f^π
204.0	28	556.09	(7/2) ⁺	352.02	(3/2) ⁺
328.7	10 [‡]	680.70	3/2 ⁺ , 5/2 ⁺	352.02	(3/2) ⁺
331.6	2	1012.25	1/2 ⁺ , 3/2 ⁺ , 5/2 ⁺	680.70	3/2 ⁺ , 5/2 ⁺
352.0	100	352.02	(3/2) ⁺	0.0	1/2 ⁺
427.3 [#]	0.2	1439.30	1/2 ⁺ , 3/2, 5/2	1012.25	1/2 ⁺ , 3/2 ⁺ , 5/2 ⁺
435.5 [#]	0.5	1439.30	1/2 ⁺ , 3/2, 5/2	1003.70	1/2 ⁺ , 3/2, 5/2
565.0	1 [‡]	1121.01	1/2 ⁺ to 7/2 ⁺	556.09	(7/2) ⁺
578.9 [#]	2	1259.66	1/2 ⁺ , 3/2, 5/2	680.70	3/2 ⁺ , 5/2 ⁺
583.8 [#]	<0.2	1843.71		1259.66	1/2 ⁺ , 3/2, 5/2
604.7 [#]	0.3	1843.71		1238.81	(9/2 ⁺)
622.3 [#]	0.2	1743.53		1121.01	1/2 ⁺ to 7/2 ⁺
651.6	2	1003.70	1/2 ⁺ , 3/2, 5/2	352.02	(3/2) ⁺
660.2	5	1012.25	1/2 ⁺ , 3/2 ⁺ , 5/2 ⁺	352.02	(3/2) ⁺
680.8	17 [‡]	680.70	3/2 ⁺ , 5/2 ⁺	0.0	1/2 ⁺
682.8	2	1238.81	(9/2 ⁺)	556.09	(7/2) ⁺

Continued on next page (footnotes at end of table)

^{96}Rb β^- n decay [1985Gr15](#), [1982Kr11](#) (continued) $\gamma(^{95}\text{Sr})$ (continued)

E_γ [†]	I_γ ^{†@}	$E_i(\text{level})$	J_i^π	E_f	J_f^π
703.5	0.3	1259.66	$1/2^+, 3/2, 5/2$	556.09	$(7/2)^+$
769.0	3 [‡]	1121.01	$1/2^+$ to $7/2^+$	352.02	$(3/2)^+$
831.3 [#]	0.8	1843.71		1012.25	$1/2^+, 3/2^+, 5/2^+$
886.7 [#]	<0.5	1238.81	$(9/2^+)$	352.02	$(3/2)^+$
907.6	0.6 [‡]	1259.66	$1/2^+, 3/2, 5/2$	352.02	$(3/2)^+$
1003.7 [#]	7	1003.70	$1/2^+, 3/2, 5/2$	0.0	$1/2^+$
1012.2 [#]	<0.2	1012.25	$1/2^+, 3/2^+, 5/2^+$	0.0	$1/2^+$
1062.8 [#]	0.2	1743.53		680.70	$3/2^+, 5/2^+$
1087.3 [#]	0.3	1439.30	$1/2^+, 3/2, 5/2$	352.02	$(3/2)^+$
1163.2 [#]	0.2	1843.71		680.70	$3/2^+, 5/2^+$
1187.2 [#]	≤ 0.2	1743.53		556.09	$(7/2)^+$
1259.7	3	1259.66	$1/2^+, 3/2, 5/2$	0.0	$1/2^+$
1439.2 [#]	5	1439.30	$1/2^+, 3/2, 5/2$	0.0	$1/2^+$

[†] From [1982Kr11](#).[‡] $I_\gamma(329\gamma)=4.4$, $I_\gamma(565\gamma)=1.8$, $I_\gamma(681\gamma)=8.2$, and $I_\gamma(769\gamma)=5.1$ ([1981Ho07](#)) are discrepant.[#] Not reported by [1981Ho07](#).[@] For absolute intensity per 100 decays, multiply by 0.076 5.Delayed Neutrons (^{95}Sr)

$\langle E(n) \rangle = 435.43$ (electron multiplier), 417.181 (Si), and 432.32 (revision of [1977Re06](#)) ([1981Re12](#)). Other: 445 ([1982Kr11](#)).
[1981Ho07](#) apparently observed only 49% 5 of the delayed neutrons.

N		TVRelative Neutron Intensities				(1985Gr15)	
N	E_n	$I_n(\%)$	E_n	$I_n(\%)$		E_n	$I_n(\%)$
N 8.0–11.6	0.4 2		83.5–106.8	5.7 3		367.2–470.0	8.5 5
N11.6–19.0	1.3 2		106.8–136.7	6.4 4		470.0–601.7	7.5 4
N19.0–31.1	2.4 3		136.7–175.6	8.8 4		601.7–770.2	6.3 4
N31.1–45.0	2.8 3		175.6–224.1	9.8 4		770.2–985.9	4.2 2
N45.0–65.2	4.6 4		224.1–286.8	11.1 5		985.9–1262.0	2.8 4
N65.2–83.5	5.0 3		268.8–367.2	12.4 7			

$E(^{95}\text{Sr})$	$I(n)$ [†]	Comments
0.0	24 3	I(n): 44 6 (1981Ho07).
352.02	30 3	
556.09	14 3	
680.70	13.1 12	I(n): 6.4 +14–31 (1981Ho07).
1003.70	5.2 6	
1012.25	3.0 9	
1121.01	2.8 4	I(n): 1.8 4 (1981Ho07).
1238.81	0.9 2	
1259.66	3.5 4	
1439.30	3.2	I(n): ≤ 1.5 to states of higher excitation energy.
1743.53	≤ 0.2	
1843.71	≤ 0.8	

[†] For absolute intensity per 100 decays, multiply by 0.133 7.

$^{96}\text{Rb} \beta^- n$ decay 1985Gr15,1982Kr11

Decay Scheme

Legend

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

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

$^{96}\text{Rb}_{59}$
 2^{-} 0.0 203 ms 3
 $Q=5870.26$
 $\beta^- n=13.3$

