

⁸⁴Rb IT decay 1984La02,1982Gr07

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 110,2815 (2009)	30-Sep-2009

Parent: ⁸⁴Rb: E=463.59 8; J^π=6⁻; T_{1/2}=20.26 min 4; %IT decay=100.0

⁸⁴Rb-In detailed studies of γ-ray spectra following the decay of the 20.26-min isomer (1979Er03), a small peak at 1463 keV was found, which was interpreted as originating from β⁺ decay of the 20.26-min isomer. The intensity was estimated to be I_γ<=0.002 if I_γ(248.0γ)=100. Further investigations are needed to establish the existence of this ε+β⁺ decay branch.

1984La02:Ge(Li), FWHM=1.9 keV at 1.33 MeV. Hyper-pure Ge detector, FWHM=400 eV at 6.4 keV. NaI(Tl). Measured I_γ, X_γ. Deduced α(K)exp.

1982Gr07:Ge(Li), FWHM=2.0 keV at 1.33 MeV. Ge detector, FWHM=700 eV at 122 keV. Measured E_γ, I_γ.

Others: 1979Er03, 1976SI07, 1970Pa09, 1969Kn05, 1967Cl05, 1958Co67.

⁸⁴Rb Levels

E(level) [†]	J ^π [‡]	T _{1/2}	Comments
0	2 ⁻	32.82 d 7	J ^π ,T _{1/2} : From Adopted Levels.
248.02 9	3 ⁻	0.31 ns 6	T _{1/2} : From centroid shift in 216ce-248γ(t) (1968Se02).
463.59 8	6 ⁻	20.26 min 4	E(level): From Adopted Levels. T _{1/2} : From 1982Gr07, but the uncertainty is statistical only. Others: 20.6 min 8 (1976SI07), 21.2 min 5 (1976Bo19), 20.0 min 5 (1970Pa09), 20.5 min 2 (1969Kn05), and 19.8 min 7 (1958Co67).

[†] From a least-squares fit to E_γ, unless otherwise stated.

[‡] From deduced transition multiplicities using α(K)exp and γγ(θ).

γ(⁸⁴Rb)

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

(215γ)(248γ)(θ): A₂=-0.13 4 (1958Co67) is consistent with 6-3-2 spin sequence.

E _γ [‡]	I _γ [#]	E _i (level)	J _i ^π	E _f	J _f ^π	Mult.	δ	α [†]	Comments
215.61 10	49.7 17	463.59	6 ⁻	248.02	3 ⁻	M3+E4	1.18 4	1.08 4	α(K)exp=0.74 4 (1984La02) α(K)=0.74 5; α(L)=0.157 14; α(M)=0.0264 23; α(N+.)=0.00273 22 α(N)=0.00266 21; α(O)=6.4×10 ⁻⁵ 3 I _γ : Limitation of Relative Statistical Weight (LWM) of 53.7 32 (1984La02), 52.5 11 (1979Er03), 50.5 5 (1969Kn05), and 44.7 11 (1982Gr07). Other: 45.1 24 (1976SI07) and 45.5 (1970Pa09). Mult.,δ: From α(exp) as deduced from the intensity balance. δ=0.83 10 from α(K)exp.
248.02 10	100	248.02	3 ⁻	0	2 ⁻	E2(+M1)	≈4.6	≈0.0343	α: From intensity balance. α(K)exp=0.033 3 (1984La02) α(K)≈0.0300; α(L)≈0.00361; α(M)≈0.000594; α(N+.)≈6.76×10 ⁻⁵ α(N)≈6.51×10 ⁻⁵ ; α(O)≈2.46×10 ⁻⁶ Mult.,δ: From α(K)exp=0.033 3 (1984La02).
463.62 10	52.5 28	463.59	6 ⁻	0	2 ⁻	E4		0.0391	α(K)=0.0333 5; α(L)=0.00491 7; α(M)=0.000817 12; α(N+.)=8.95×10 ⁻⁵

Continued on next page (footnotes at end of table)

^{84}Rb IT decay [1984La02,1982Gr07](#) (continued) $\gamma(^{84}\text{Rb})$ (continued)

E_γ [‡]	E_i (level)	Comments
	13	
		$\alpha(\text{N})=8.67\times 10^{-5}$ 13; $\alpha(\text{O})=2.81\times 10^{-6}$ 4
		I_γ : Limitation of Relative Statistical Weight (LWM) of 61.3 29 (1984La02) and 60.0 15 (1982Gr07), 51.8 11 (1979Er03), and 49.8 5 (1969Kn05). Others: 69 6 (1976SI07) and 82 9 (1970Pa09).

[†] Additional information 1.

[‡] From [1982Gr07](#). Others: [1970Pa09](#) and [1967CI05](#).

[#] For absolute intensity per 100 decays, multiply by 0.63 3.

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