^{84}Br β^- decay (6.0 min) 1970Ha21

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. K. Tuli, A. Luca, S. Juutinen, and B. Singh	NDS 110,2815 (2009)	30-Sep-2009

Parent: ^{84}Br: E=3.2×10^2 *10*; J^π=(6)$^-$; $T_{1/2}$=6.0 min *2*; Q(β^-)=4629 *15*; %β^- decay=100.0

^{84}Br-$T_{1/2}$: from 1960Sa05. Other: 6 min (Levkovskii, et al, Sovt. Jour Nucl Phys. 8, 4 (1968)).

^{84}Br-Q(β^-): from 2009AUZZ. Other: 4632 14 (2003Au03).

^{84}Br-%β^- decay: %β^-=100 since no IT decay has been observed.

1970Ha21: ^{84}Br production by fission of ^{235}U and ^{87}Rb(n,α) reaction. Measured Eγ, Iγ, $\gamma\gamma$ and $\beta\gamma$ coin; Ge(Li) and anthracene detectors.

Other: 1960Sa05.

Total decay energy deposit of 4950 keV *190* calculated by RADLIST code is in agreement with expected value of 4949 keV *100*.

^{84}Kr Levels

E(level)†	J^π‡	$T_{1/2}$
0.0	0^+	stable
881.7 *4*	2^+	
1897.7 *4*	2^+	
2344.6 *5*	4^+	
2768.6 *7*	5^-	

† From least-squares fit to Eγ's.

‡ From Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^-†	Log *ft*	Comments
(2.18×10^3 *10*)	2768.6	100	5.1 *1*	av Eβ=886 *48* Eβ(endpoint)=2200 *100* from $\beta\gamma$ coin with 424γ, 882γ and 1463γ (1970Ha21).

† Absolute intensity per 100 decays.

γ(^{84}Kr)

Iγ normalization: I(γ+ce) of 881.6γ+1897.7γ=100.

E$_\gamma$‡	I$_\gamma$#&	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.@	α†	Comments
424.0	100 *10*	2768.6	5^-	2344.6	4^+	E1	0.001469 *21*	α=0.001469 *21*; α(K)=0.001306 *19*; α(L)=0.0001387 *20*; α(M)=2.24×10^{-5} *4*; α(N+..)=2.25×10^{-6} α(N)=2.25×10^{-6} *4* Mult.: Measured anisotropy [Iγ(0°)/Iγ(90°)]−1=0.53 *1* at 8.5 mK (1992Pr06) in NMR work on oriented nuclei. This anisotropy is larger than expected from theory which has been attributed by 1992Pr06 to possible M2 admixture.
447.0	3	2344.6	4^+	1897.7	2^+			
881.6	98 *10*	881.7	2^+	0.0	0^+			

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^{84}Br β^- decay (6.0 min) 1970Ha21 (continued)

$\gamma(^{84}Kr)$ (continued)

E_γ [‡]	I_γ [#&]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [@]	δ [@]	α [†]	Comments
1016.0	1	1897.7	2^+	881.7	2^+	M1+E2	+0.84 *7*	0.000460 *7*	α=0.000460 *7*; α(K)=0.000409 *6*; α(L)=4.34×10^{-5} *7*; α(M)=7.03×10^{-6} *10*; α(N+..)=7.10×10^{-7} *11* α(N)=7.10×10^{-7} *11*
1462.8	97 *10*	2344.6	4^+	881.7	2^+	E2		0.000288 *4*	α=0.000288 *4*; α(K)=0.000193 *3*; α(L)=2.04×10^{-5} *3*; α(M)=3.29×10^{-6} *5*; α(N+..)=7.20×10^{-5} *10* α(N)=3.33×10^{-7} *5*; α(IPF)=7.17×10^{-5} *10*
1897.7	2	1897.7	2^+	0.0	0^+				

† Additional information 1.
‡ Uncertainties not given by the authors but 0.5 keV used by the evaluators to obtain level energies.
# Uncertainties stated by authors to be 10% on the average.
@ From Adopted Levels, gammas.
& Absolute intensity per 100 decays.

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Decay Scheme

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