Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 114, 1293 (2013)	1-Sep-2013

Q(β^-)=6771 *8*; S(n)=4086 *3*; S(p)=14263 *4*; Q(α)=−6973 *3* 2012Wa38
Q(βn)=319 *7* (2012Wa38).
Production: ^{91}Br β^- decay, ^{92}Br β^-n decay and ^{252}Cf SF decay. Others (partial list): ^{248}Cm(γ,F): (2005Ga25); ^{237}Np(γ,F) (2005Ga50); ^{243}Am(γ,F) (2005Ga50); ^{232}Th(γ,F) (2003Ga21); ^{244}Pu(γ,F) (2013Ga21); ^{238}U(γ,F) (2003Ga21,2002Ib01); U(n,X), fast neutrons (2000Ka02,2000Lh02).

^{91}Kr Levels

Cross Reference (XREF) Flags

A ^{91}Br β^- decay
B ^{92}Br β^-n decay
C ^{252}Cf SF decay

E(level)‡	Jπ	$T_{1/2}$†	XREF	Comments
0	5/2(+)	8.57 s *4*	ABC	%β^-=100 μ=−0.583 *2* (1995Ke04); Q=+0.30 *3* (1995Ke04) $\Delta\langle r^2\rangle(^{91}Kr-^{86}Kr)$=0.597, uncertainty 0.006 (statistical only), 0.020 (systematic included), 0.114 (including uncertainties arising from evaluation of isotope shifts) (1995Ke04). $\langle r^2\rangle^{1/2}$(charge)=4.255 fm *8* (2004An14). μ, Q: from collinear fast beam laser spectroscopy (2005St24 from 1995Ke04). μ is relative to ^{83}Kr, diamagnetic correction included; uncertainty includes estimate of effect of hfs anomaly. Jπ: J=5/2 from hfs (1995Ke04); π from assignment of state to $2d_{5/2}$ shell (1995Ke04) based on hfs data, μ and Q (μ suggests configuration=(ν $d_{5/2}$)$^{-1}$ mixed with 1^+ states arising from excitations from $d_{5/2}$ shell to $d_{3/2}$ shell). $T_{1/2}$: from 1969Ca03. Other measurements: 8.6 s *1* (1974Ac01), 9.16 s *9* (1974Gr29), 8.36 s *15* (1965Pa14). The weighted average of all data is 8.64 s *12*.
144.3 *6*	(3/2+)	56 ns	AB	Jπ: E2 144γ to 5/2(+) g.s.; analogy with ^{89}Kr and ^{93}Sr; probable configuration=(ν $d^3_{5/2}$)3/2 (1995Ke04,1990WoZZ).
300.7 *5*			AB	
482.8 *6*			AB	
707.0 *7*			AB	
781.4 *7*			AB	
843.9 *6*			AB	
966.7 *9*			B	
1120.2 *6*			AB	
1155.5			C	
1210.1 *10*			A	
1356.8 *12*			B	
1419.5 *12*			B	
1422.0 *8*			A	
1916.2			C	
1917.0 *10*			A	
2144.7 *8*			A	
3675.1 *6*			A	
3734.7 *8*			A	
3773.8 *9*			A	
3919.3 *10*			A	
4153.8 *12*			A	
4452.9 *12*			A	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{91}Kr Levels (continued)

† From ^{91}Br β^- decay, except as noted.
‡ From least-squares fit to Eγ assigning an uncertainty of 1 keV to all data (authors did not state uncertainties).

γ(^{91}Kr)

E_i(level)	J_i^π	E_γ†	I_γ‡	E_f	J_f^π	Mult.†	α@	Comments
144.3	(3/2$^+$)	144.1	100	0	5/2$^{(+)}$	E2	0.240	B(E2)(W.u.)=5.4 other Eγ: 144.6 from ^{92}Br β^-n decay.
300.7		301.4‡	100	0	5/2$^{(+)}$			
482.8		338.4‡	30	144.3	(3/2$^+$)			
		482.8‡	100	0	5/2$^{(+)}$			
707.0		406.4‡	9	300.7				
		707.0‡	100	0	5/2$^{(+)}$			
781.4		780.5‡	100	0	5/2$^{(+)}$			
843.9		361.7‡	100	482.8				
		542.7‡	91	300.7				
		699.5‡	27	144.3	(3/2$^+$)			
		844		0	5/2$^{(+)}$			
966.7		666.4‡	50	300.7				
		822.0‡	100	144.3	(3/2$^+$)			
1120.2		637		482.8				
		818.7‡	100	300.7				
		976.4‡	50	144.3	(3/2$^+$)			
		1121		0	5/2$^{(+)}$			
1155.5		1155.5#	100#	0	5/2$^{(+)}$			
1356.8		874.0‡	100	482.8				
1419.5		1118.8‡	100	300.7				
1422.0		715		707.0				
		1422		0	5/2$^{(+)}$			
1916.2		760.7#	100#	1155.5				
1917.0		1917	100	0	5/2$^{(+)}$			
2144.7		1363		781.4				
		2145		0	5/2$^{(+)}$			
3675.1		2465		1210.1				
		2893		781.4				
		3191		482.8				
		3377		300.7				
		3674		0	5/2$^{(+)}$			
3734.7		3590		144.3	(3/2$^+$)			
		3735		0	5/2$^{(+)}$			
3773.8		3292		482.8				
		3472		300.7				
3919.3		2709		1210.1				
		3775		144.3	(3/2$^+$)			
4153.8		3853	100	300.7				
4452.9		3970	100	482.8				

† From ^{91}Br β^- decay, except As noted.
‡ From ^{92}Br β^-n decay.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{91}Kr)$ (continued)

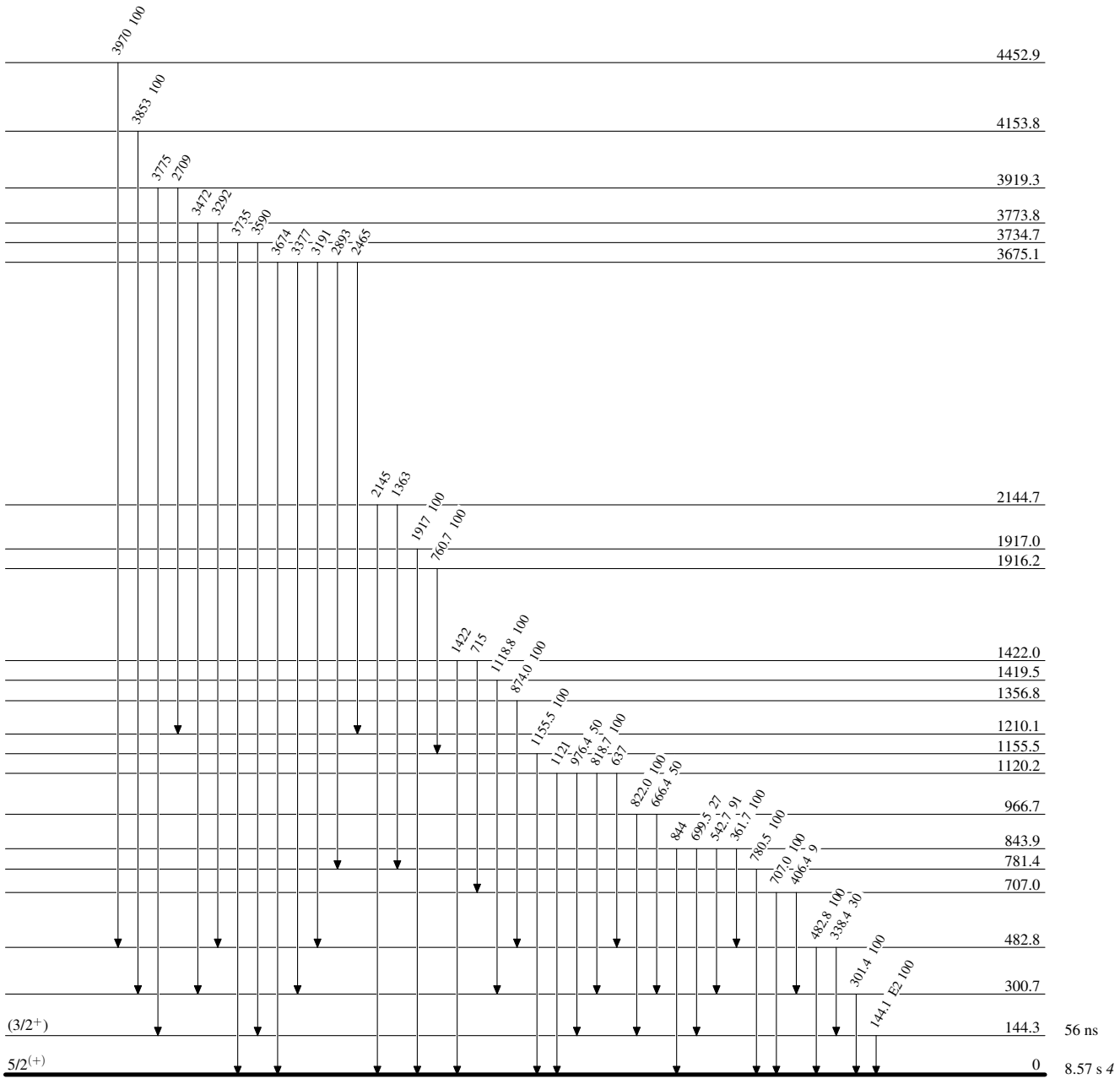
From ^{252}Cf SF decay.

@ 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.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{91}_{36}Kr_{55}$