^{91}Zr IT decay   2009Ho07

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

Parent: ^{91}Zr: E=3167.3 *4*; J$^\pi$=(21/2$^+$); T$_{1/2}$=4.35 μs *14*; %IT decay=100.0

^{91}Zr-E,J$^\pi$,T$_{1/2}$: From Adopted Levels.

Isomer populated by bombarding a 99% isotopically-enriched ^{13}C foil with a 7.4 MeV/nucleon ^{86}Kr^{21+} beam; achromatically-focussed evaporation residues implanted after a flight path of 520 ns into Pb foil surrounded by 14 HPGe detectors, two of which were equipped with BGO Compton-suppression shields; measured Eγ, $\gamma\gamma$ coin.

The level scheme was constructed by the evaluator to accommodate the ^{91}Zr transitions identified In fig. 2 of 2009Ho07 In accord with Adopted Levels, Gammas.

^{91}Zr Levels

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$	Comments
0.0	5/2$^+$		
2131	(9/2)$^+$		
2288	(15/2)$^-$		
2320	(11/2)$^-$		
2857	(13/2)$^+$		
3147	(17/2)$^+$		
3167.3 *4*	(21/2$^+$)	4.35 μs *14*	%IT=100
			E(level),T$_{1/2}$,J$^\pi$: from Adopted Levels.

[†] From least-squares fit to Eγ, assigning equal weight to all transitions, except As noted.

[‡] From Adopted Levels.

$\gamma(^{91}$Zr)

E$_\gamma$[†]	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$	Mult.[‡]	α[@]	Comments
(20.4[#])	3167.3	(21/2$^+$)	3147	(17/2)$^+$	[E2]	341	α(K)=72.6 *11*; α(L)=224 *4*; α(M)=39.7 *6*; α(N+..)=4.78 *7* α(N)=4.76 *7*; α(O)=0.01399 *20*
537	2857	(13/2)$^+$	2320	(11/2)$^-$			
726	2857	(13/2)$^+$	2131	(9/2)$^+$	E2	0.001472 *21*	α=0.001472 *21*; α(K)=0.001296 *19*; α(L)=0.0001468 *21*; α(M)=2.55×10^{-5} *4*; α(N+..)=3.84×10^{-6} α(N)=3.59×10^{-6} *5*; α(O)=2.46×10^{-7} *4*
859	3147	(17/2)$^+$	2288	(15/2)$^-$			
879	3167.3	(21/2$^+$)	2288	(15/2)$^-$	[E3]	0.00200 *3*	α=0.00200 *3*; α(K)=0.001750 *25*; α(L)=0.000207 *3*; α(M)=3.59×10^{-5} *5*; α(N+..)=5.38×10^{-6} *8* α(N)=5.05×10^{-6} *7*; α(O)=3.35×10^{-7} *5*
(2131.4[#])	2131	(9/2)$^+$	0.0	5/2$^+$	(E2)	0.000515 *8*	α=0.000515 *8*; α(K)=0.0001280 *18*; α(L)=1.388×10^{-5} *20*; α(M)=2.40×10^{-6} *4*; α(N+..)=0.000371 α(N)=3.42×10^{-7} *5*; α(O)=2.45×10^{-8} *4*; α(IPF)=0.000371 *6*

[†] From γ-γ coincidence spectrum In fig. 2 of 2009Ho07. Authors quote Eγ to the nearest keV and give No uncertainties.

[‡] From Adopted Gammas.

[#] From Adopted Gammas; γ expected, but Eγ is outside energy range for spectrum shown In fig. 2 of 2009Ho07.

Continued on next page (footnotes at end of table)

^{91}Zr IT decay   **2009Ho07** (continued)

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

@ 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.

^{91}**Zr IT decay**   **2009Ho07**   Legend

Decay Scheme

%IT=100.0

- - - - - → γ Decay (Uncertain)

$^{91}_{40}$Zr$_{51}$