^{76}Rb IT decay (3.050 μs) 1986Ho22

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Jun Chen and Ameenah R. Farhan	NDS 194,3 (2024)	8-Jan-2024

Parent: ^{76}Rb: E=316.93 *8*; J^π=(4$^+$); $T_{1/2}$=3.050 μs *7*; %IT decay=100

1986Ho22: ^{40}Ca(^{40}Ca,n3pγ),E=142 MeV. Measured delayed Eγ, Iγ, $T_{1/2}$ for a microsecond isomer. Four γ rays from the decay of the 3.20–μs isomer are reported with estimated limits on conversion coefficients.

2000Ch07: measured half-life of isomer.

^{76}Rb Levels

E(level)[†]	J^π[‡]	$T_{1/2}$	Comments
0.0	1$^-$		
101.29 *4*	2$^{(-)}$		
246.38 *6*	3$^{(-)}$		
316.93 *8*	(4$^+$)	3.050 μs *7*	E(level): 316.96 *8* in the Adopted Levels. $T_{1/2}$: from γ(t) (2000Ch07). Other: 3.20 μs *10* (1986Ho22). Weighted average of the two results is 3.051 μs *10*. Proposed configuration=$\pi g_{9/2}\otimes\nu g_{9/2}$ (1986Ho22).

† From Eγ data.
‡ From Adopted Levels.

γ(^{76}Rb)

Intensity of Kα x ray at 13.4 keV: counts<200, σ<5.8 mb.

E_γ[†]	I_γ[†#]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	α[@]	$I_{(\gamma+ce)}$[#]	Comments
70.55 *5*	79	316.93	(4$^+$)	246.38	3$^{(-)}$	(E1)	0.268	100	α(exp)<1.8 (1986Ho22) ce(K)/(γ+ce)=0.1867 *22*; ce(L)/(γ+ce)=0.0207 *3*; ce(M)/(γ+ce)=0.00338 *5* ce(N)/(γ+ce)=0.000371 *6*; ce(O)/(γ+ce)=1.429×10^{-5} *21* α(K)=0.237 *4*; α(L)=0.0262 *4*; α(M)=0.00428 *6*; α(N)=0.000470 *7*; α(O)=1.81×10^{-5} *3* $I_{(\gamma+ce)}$: set at 100 by evaluators. σ=6.9 mb, γ counts=2603.
101.30 *4*	75	101.29	2$^{(-)}$	0.0	1$^-$	(M1)	0.1397	86	α(K)=0.1232 *18*; α(L)=0.01393 *20*; α(M)=0.00230 *4* α(N)=0.000260 *4*; α(O)=1.101×10^{-5} *16* α(exp)<1.8 (1986Ho22) σ=6.7 mb, γ counts=2800.
145.11 *5*	82	246.38	3$^{(-)}$	101.29	2$^{(-)}$	(M1)	0.0527	86	α(K)=0.0465 *7*; α(L)=0.00521 *8*; α(M)=0.000861 *12* α(N)=9.73×10^{-5} *14*; α(O)=4.14×10^{-6} *6* α(exp)<1.6 (1986Ho22) σ=7.6 mb, γ counts=3647.
246.32 *10*	14	246.38	3$^{(-)}$	0.0	1$^-$	(E2)	0.0361	14	α(exp)<9.8 (1986Ho22) α(K)=0.0316 *5*; α(L)=0.00381 *6*; α(M)=0.000628 *9* α(N)=6.87×10^{-5} *10*; α(O)=2.59×10^{-6} *4* σ=1.3 mb, γ counts=516.

Continued on next page (footnotes at end of table)

^{76}Rb IT decay (3.050 μs) 1986Ho22 (continued)

$\gamma(^{76}Rb)$ (continued)

† From 1986Ho22.
‡ From measured upper limits of α(exp) (1986Ho22), combined with $\gamma(\theta)$ data in in-beam γ-ray studies, as discussed in the Adopted Levels, Gammas dataset.
# Absolute intensity per 100 decays.
@ 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.

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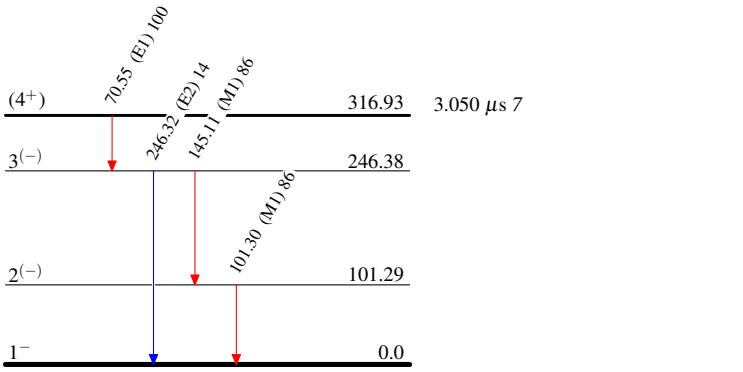
Decay Scheme

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



$^{76}_{37}Rb_{39}$