^{101}Ru IT decay (17.5 μs) 1978Ba18

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	ENSDF	1-Jul-2006

Parent: ^{101}Ru: E=527.3; $J^\pi=11/2^-$; $T_{1/2}=17.5$ μs *4*; %IT decay=100.0

Others: 1961Kr01, 1964Br27, 1965Ch26.

Measured Eγ, Iγ, I(K x ray), γ(t) pulsed beam via ^{103}Rh(γ,pn) E=40 MeV bremsstrahlung, semi, on-line.

^{101}Ru Levels

E(level)	J^π †	$T_{1/2}$	Comments
0.0	$5/2^+$	stable	
306.6	$7/2^+$		
527.3	$11/2^-$	17.5 μs *4*	$T_{1/2}$: 17.5 μs *4* (1978Ba18) (221γ,307γ)(t) pulsed beam; 17.5 μs *15* (1961Kr01,1964Br27); 22.5 μs *4* (1970Uy01,1971Uy01). %IT=100.

† From Adopted Levels.

γ(^{101}Ru)

Iγ normalization: for I(γ+ce)=100 isomer decays.

Eγ	Iγ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	α ‡	Comments
220.7 *2*	84 *7*	527.3	$11/2^-$	306.6	$7/2^+$	M2		0.198	α(K)=0.1691 *24*; α(L)=0.0233 *4*; α(M)=0.00435 *7*; α(N+..)=0.000734 *11* α(N)=0.000699 *10*; α(O)=3.45×10^{-5} *5* B(M2)(W.u.)=0.130 *3* Iγ: Iγ(307γ)/Iγ(221γ)= 1.2 *1* (1978Ba18), ≈1.1 (1964Br27). I(ce(K) 307γ)/I(ce(K) 221γ)= 0.11 *2* (1965Ch26) on-line s. Mult.: based on α(K)exp and α(exp)=0.2 1 from an intensity balance at 307 level. α(K)exp=0.15 *3* from ce(K)(1965Ch26)/Iγ(1978Ba18) normalized to α(K)(307γ)=0.0136 (M1+1% E2 theory). Other α(K)exp=0.15 deduced from I(K x ray)/Iγ(ω(K)). B(M2)(W.u.)=7.6; syst with h11/2 to g7/2 transitions. Analogs: B(M2)(W.u.)=6.2, B(M2)(W.u.)=8.
306.6 *3*	100	306.6	$7/2^+$	0.0	$5/2^+$	M1+E2	−0.10 *5*	0.0156 *1*	α(K)=0.01367 *10*; α(L)=0.00160; α(M)=0.00029 δ: from 1973Ka28 γ(θ,T) oriented 4.3-d ^{101}Rh source.

† For absolute intensity per 100 decays, multiply by 0.9846.

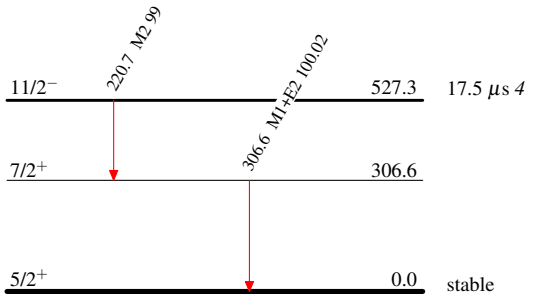
‡ Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

^{101}Ru IT decay (17.5 μs) 1978Ba18

Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 decays through this branch
%IT=100.0

Legend
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



$^{101}_{44}Ru_{57}$