^{191}Au IT decay (0.92 s) 1971Be61

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia	NDS 195,368 (2024)	1-Dec-2023

Parent: ^{191}Au: E=266.1 *7*; J^{π}=(11/2$^-$); $T_{1/2}$=0.92 s *11*; %IT decay=100

The isomer was produced in two different ways: 1) in an off-line experiment a ^{191}Hg source was produced and ^{191m}Au isomer populated in the decay was isolated by fast evaporation. The decay of the isomeric state was measured with a Ge(Li) detector using a multispectrum scaling method; 2) In a second experiment the ^{191m}Au isomer was produced on-line, irradiating a natural platinum target with 60 MeV deuterons. The target was irradiated for 4 seconds and the decay of the isomer was measured with the Ge(Li). The experiment was repeated several times to obtain good statistics. Measured Eγ.

^{191}Au Levels

E(level)	J^{π}†	$T_{1/2}$†	Comments
0.0	3/2$^+$	3.18 h *8*	
12	(1/2$^+$)	15.5 ns *15*	
253	(5/2)$^+$		
266.1 *7*	(11/2$^-$)	0.92 s *11*	%IT=100 $T_{1/2}$: From 1971Be61: Weighted average of 0.95 s *25* (241γ(t)) and 0.91 s *12* (253γ(t)). The evaluator assumed 1971Be61 data superseded their earlier value 1.2 s *3* (1970Be60).

† From Adopted Levels.

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$\gamma(^{191}Au)$

Iγ normalization: From I(γ+ce)(241γ)+I(γ+ce)(253γ)=100%.

E_γ	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]	δ	α[#]	$I_{(\gamma+ce)}$[@]	Comments
(12)		12	$(1/2^+)$	0.0	$3/2^+$				25.6 *21*	E_γ: from E(253γ)-E(241γ). $I_{(\gamma+ce)}$: from $I_{(\gamma+ce)}(12\gamma)=I_{(\gamma+ce)}(241\gamma)$.
13.7[†] *6*		266.1	$(11/2^-)$	253	$(5/2)^+$	(E3)		1.2×10^7 *4*	163 *10*	%Iγ=8.4×10^{-6} *29* ce(L)/(γ+ce)=0.49 *16*; ce(M)/(γ+ce)=0.39 *14* ce(N)/(γ+ce)=0.10 *4*; ce(O)/(γ+ce)=0.015 *7*; ce(P)/(γ+ce)=4.4×10^{-6} *18* α(L)=5.6×10^6 *17*; α(M)=4.5×10^6 *15* α(N)=1.2×10^6 *4*; α(O)=1.7×10^5 *6*; α(P)=51 *13* $I_{(\gamma+ce)}$: from $I_{(\gamma+ce)}(13.7\gamma)=I_{(\gamma+ce)}(241\gamma+253\gamma)$.
241	21.3[†] *21*	253	$(5/2)^+$	12	$(1/2^+)$	E2		0.2016 *28*		%Iγ=13.1 *16* α(K)=0.1068 *15*; α(L)=0.07136 *99*; α(M)=0.01819 *25* α(N)=0.00449 *6*; α(O)=0.000740 *10*; α(P)=1.111×10^{-5} *16*
253	100[†] *10*	253	$(5/2)^+$	0.0	$3/2^+$	M1+E2	0.89 *20*	0.37 *7*		%Iγ=61.5 *30* α(K)=0.28 *6*; α(L)=0.0661 *26*; α(M)=0.0159 *4* α(N)=0.00395 *10*; α(O)=0.000696 *30*; α(P)=3.3×10^{-5} *8*

[†] From the decay of ^{191}Hg (50.8 min).
[‡] From Adopted Gammas.
[#] Additional information 1.
[@] For absolute intensity per 100 decays, multiply by 0.615 *60*.

$^{191}_{79}Au_{112}$-2

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Decay Scheme

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

%IT=100

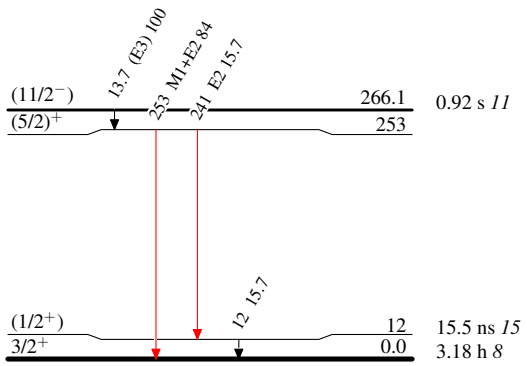
Legend

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

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

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

γ Decay (Uncertain)



$^{191}_{79}Au_{112}$