

^{177}Ir ε decay **1990Bo19,1993ScZZ**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 159, 1 (2019)	30-Aug-2019

Parent: ^{177}Ir : $E=0.0$; $J^\pi=5/2^-$; $T_{1/2}=29.8$ s 17; $Q(\varepsilon)=5909$ 25; $\% \varepsilon + \% \beta^+$ decay=99.94 1

Additional information 1.

1990Bo19: Activity produced using the $^{141}\text{Pr}(^{40}\text{Ar},4n)$ reaction. $E(^{40}\text{Ar})=240$ MeV. Target: ≈ 2 mg/cm². Detectors: Si-surface barrier α detector, Si(Li) and Ge(Li) for x-rays, and 40% Ge for γ -rays. He-jet and moving tape transport systems. Measured: $E\alpha$, $T_{1/2}$, $\% \alpha$, $E\gamma$, $\gamma\gamma$ coin, $I\gamma$, excitation functions.

 ^{177}Os Levels

E(level) [†]	J^π [‡]	$T_{1/2}$ [‡]
0.0 [#]	$1/2^-$	3.0 min 2
75.39 [#] 20	$(3/2^-)$	
90.20 [#] 10	$5/2^-$	
151.9 [@] 10	$5/2^-$	40 ns 3
239.8 [@] 11	$7/2^-$	
259.5 [#] 6	$(7/2^-)$	
284.0 [#] 4	$9/2^-$	
299.7 ^{&} 11	$7/2^+$	46.3 ns 3
354.5 [@] 11	$9/2^-$	

[†] From a least-squares fit to $E\gamma$.

[‡] From Adopted Levels.

[#] Band(A): $K^\pi=1/2^-$, $\nu 1/2[521]$ ($p_{3/2}$).

[@] Band(B): $K^\pi=5/2^-$, $\nu 5/2[512]$ ($h_{9/2}$).

[&] Band(C): $K^\pi=7/2^+$, $\nu 7/2[633]$ ($i_{13/2}$).

 $\gamma(^{177}\text{Os})$

$I\gamma$ normalization: The decay scheme is incomplete and depends sensitively on the intensity of 75.4 γ for which only an upper limit is known (**1993ScZZ**). Thus, no normalization to absolute intensities has been performed and no beta-decay feeding intensities and log fit values were calculated.

E_γ ^{†‡}	I_γ [‡]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
(15.0)		90.20	$5/2^-$	75.39	$(3/2^-)$	E_γ : From level energy differences. Not observed directly, but required from the $\gamma\gamma$ coincidence relationship.
61.7	<30 [#]	151.9	$5/2^-$	90.20	$5/2^-$	I_γ : $10 < I_\gamma < 30$ from 1993ScZZ .
75.4 2	92 5	75.39	$(3/2^-)$	0.0	$1/2^-$	I_γ : Affected by the Pb K x ray (1993ScZZ), but corrections have not been applied.
87.9 3	30 2	239.8	$7/2^-$	151.9	$5/2^-$	I_γ : Affected by the Pb K x ray (1993ScZZ), but corrections have not been applied.
90.2 1	27 1	90.20	$5/2^-$	0.0	$1/2^-$	
114.7 3	14 1	354.5	$9/2^-$	239.8	$7/2^-$	
147.8 3	92 5	299.7	$7/2^+$	151.9	$5/2^-$	
184.1 5	100 5	259.5	$(7/2^-)$	75.39	$(3/2^-)$	
193.8 3	24 1	284.0	$9/2^-$	90.20	$5/2^-$	

Continued on next page (footnotes at end of table)

^{177}Ir ε decay [1990Bo19](#), [1993ScZZ](#) (continued)

$\gamma(^{177}\text{Os})$ (continued)

† From adopted gammas.

‡ From [1990Bo19](#), unless otherwise stated.

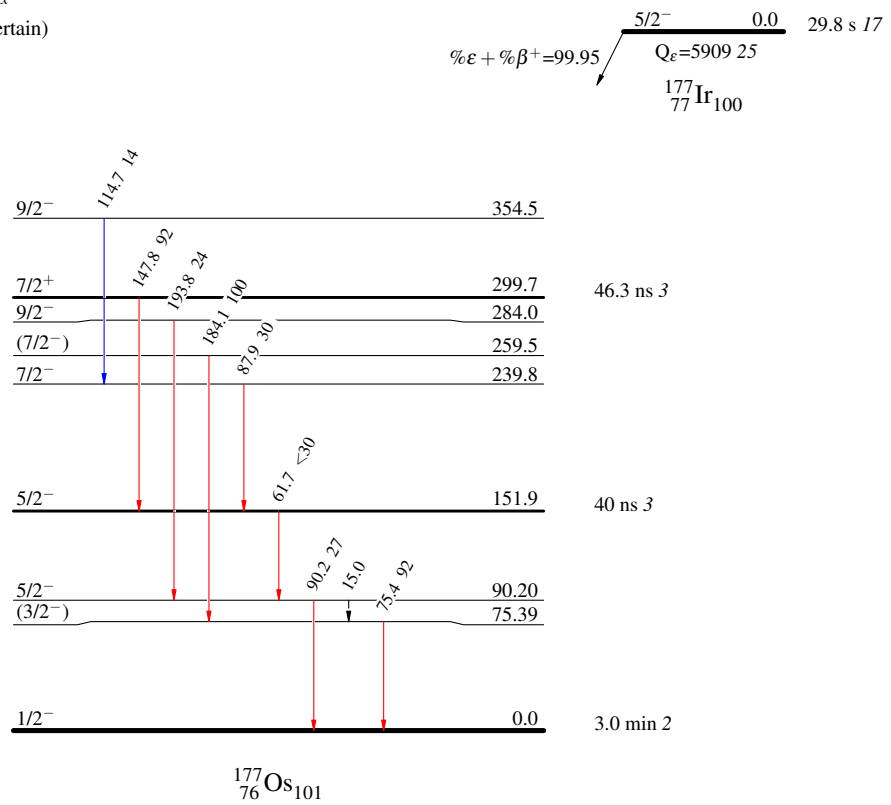
From [1993ScZZ](#).

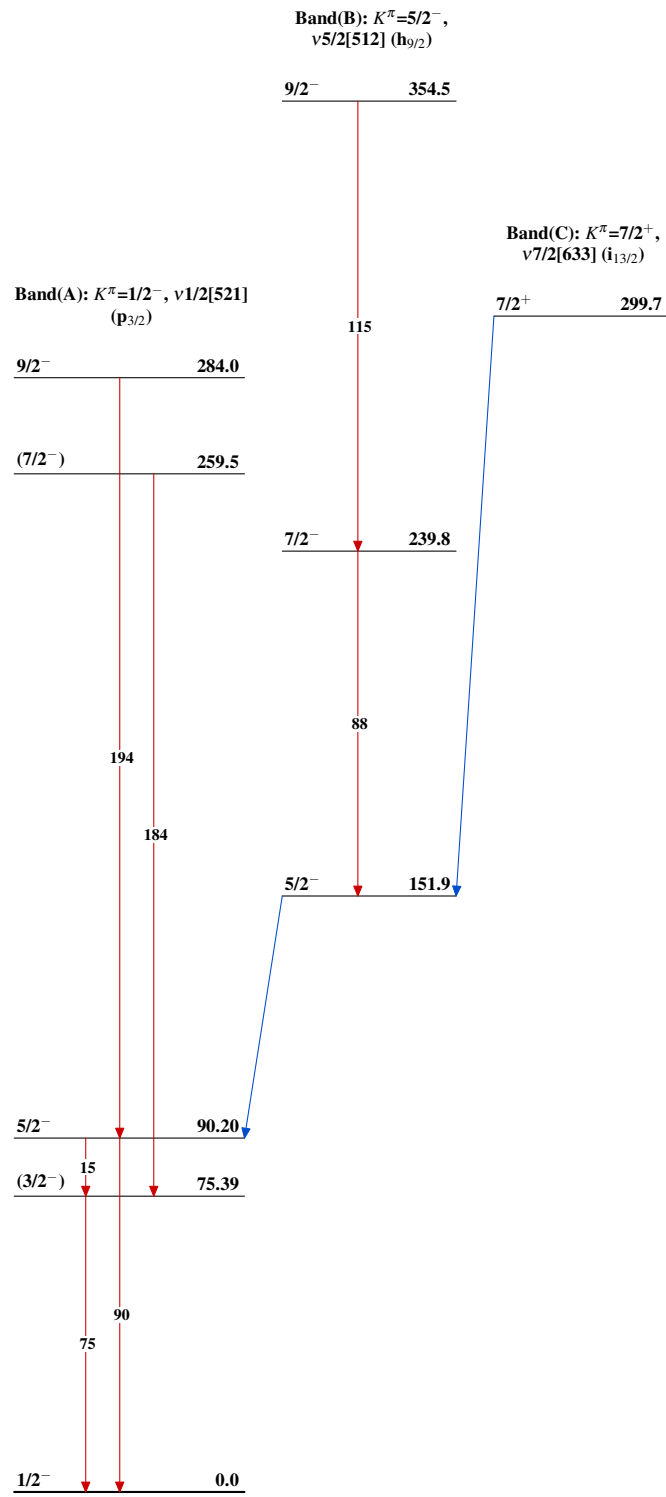
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Legend

- $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
 —————→ $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
 —————→ $I_\gamma > 10\% \times I_\gamma^{\text{max}}$
 - - - - -→ γ Decay (Uncertain)

Decay Scheme

Intensities: Relative I_γ 

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