

^{185}Hg α decay (49.1 s) 1976GrZC

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	S. -c. Wu	NDS 106, 367 (2005)	31-Aug-2005

Parent: ^{185}Hg : $E=0.0$; $J^\pi=1/2^-$; $T_{1/2}=49.1$ s 10; $Q(\alpha)=5774$ 5; $\% \alpha$ decay=6 1

^{185}Hg - $\% \alpha$ decay: 0.055 7 (1970Ha18) from absolute α , K x ray, and γ^\pm counting. No correction for internal conversion electrons was made, which may have increased this value. However, an upper limit of 0.07 can be set by requiring $\text{HF} \geq 1$ for the 5653 α .

Branching was not corrected for a possible contribution to the K x-ray intensity due to 46% ε decay from ^{185}Hg (21 s) reported by 1982Bo27. The evaluator adopts $\% \alpha=6$ 1.

1976GrZC: Source prepared in ISOLDE II at CERN; Ge detector for X-ray and γ 's; surface barrier detector for α 's; measured $E\alpha$, $I\alpha$, $\alpha\gamma$ -coin.

Others: 1953Ra02, 1963Ka17, 1968De01, 1970Ha18, 1978Ha30, 1970Ma24, 1977Ij01, 1979Ha10, 1980ToZZ, 2002An15.

The level scheme has been analyzed by evaluator on the basis of the systematics of the 1/2[521] rotational band, and on reported coincidence data.

 ^{181}Pt Levels

E(level) [†]	J^π [‡]	$T_{1/2}$	Comments
0.0	1/2 ⁻	52.0 s 22	$T_{1/2}$: from Adopted Levels.
79 [#]	3/2 ⁻		
94 [#]	5/2 ⁻		E(level): 86 7, based on $E\alpha$.

[†] Based on $E\gamma$.

[‡] From Adopted Levels.

[#] The expected energy pattern for the 1/2[521] rotational band is for the 3/2⁻ and 5/2⁻ members to lie close together, significantly above the 1/2⁻ bandhead, decoupling parameter $a=+0.79$; thus, the 15-keV 3/2⁻ level option proposed by 1976GrZC seems unlikely.

 α radiations

$E\alpha$	E(level)	$I\alpha$ ^{†#}	HF [‡]	Comments
5569 5	94	4.0 3	10.2 20	$E\alpha$: from 1980ToZZ (also observed by 1976To06). Other values: 5575 15 (1970Ha18), 5560 (1976GrZC).
5653 5	0.0	96.0 3	1.15 21	$E\alpha$: from 1980ToZZ (also observed by 1976To06, 2002An15). Other data: 5600 100 (1953Ra02), 5640 50 (1963Ka17), 5652 15 (1970Ha18), 5652 (1976GrZC), 5630 20 (1970Ma24), 5586 28 (1968De01), 1977Ij01.

[†] Deduced by evaluator from $I\alpha(\text{g.s.})/I\alpha(94)=24$ 2 (1970Ha18). Other data: 25 (1976GrZC); $I\alpha(\text{g.s.}):I\alpha(94)=96$ 1:4 1 (1980ToZZ). $\Delta I\alpha=0.3$ was calculated by evaluator using the error-propagation method of 1988Br07 and the constraint that

$I\alpha(\text{g.s.})+I\alpha(94)=100$.

[‡] If $r_0=1.508$ (based on $r_0(^{180}\text{Pt})$ and $r_0(^{182}\text{Pt})$ from 1998Ak04).

[#] For absolute intensity per 100 decays, multiply by 0.06 1.

 $\gamma(^{181}\text{Pt})$

E_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [‡]	Comments
(15)	94	5/2 ⁻	79	3/2 ⁻	[M1]	Transition not observed, but $I(\gamma+\text{ce})$ is expected to be strong, based on the decay pattern systematics of the 1/2[521] rotational band. E_γ is rounded-off value from the Adopted Gammas data set.

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 ^{185}Hg α decay (49.1 s) **1976GrZC** (continued)

 $\gamma(^{181}\text{Pt})$ (continued)

<u>E_γ</u> [†]	<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.</u> [‡]
79	79	3/2 ⁻	0.0	1/2 ⁻	[M1,E2]
94	94	5/2 ⁻	0.0	1/2 ⁻	E2

[†] From **1976GrZC**; uncertainty unstated by authors, but E_γ values match rounded-off values from the Adopted Gammas data set.

[‡] From adopted gammas.

