

^{167}Re α decay (3.4 s) **1992Me10**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	C. W. Reich, Balraj Singh		NDS 111, 1211 (2010)	12-Apr-2010

Parent: ^{167}Re : $E=0.0$; $J^\pi=(9/2^-)$; $T_{1/2}=3.4$ s 4; $Q(\alpha)=5280$ SY; % α decay \approx 100.0

$^{167}\text{Re}-Q(\alpha)$: From [2003Au03](#), [2009AuZZ](#), the uncertainty associated with this estimate is 40 ([2003Au03,2009AuZZ](#)). From

$E\alpha=5015$ 12, $Q(\text{g.s.})=5138$ 12, assuming that the transition feeds the ^{163}Ta g.s..

$^{167}\text{Re}-E$: Note that the evaluation of [2000Ba65](#) identifies this activity As an isomeric state In ^{167}Re .

$^{167}\text{Re}-J^\pi$: From systematics ([2003Au02](#)). Probable configuration is $\pi 9/2[514]$. [2004GoZZ](#) also propose $9/2^-$.

Additional information 1.

1992Me10: ^{167}Re produced by $^{141}\text{Pr}(^{32}\text{S},\text{X})$ and identified through several cross-bombardment reactions. Measured $E\alpha$, estimated % α . Previous activities assigned to ^{167}Re α decay by [1984Sc06](#), [1978Sc26](#) and [1982De11](#) were reassigned by [1992Me10](#) to other Re isotopes.

 ^{163}Ta Levels

E(level)	J^π	Comments
0+x?	(9/2 ⁻)	E(level): based on the measured $E\alpha$ values, it seems that this May not Be the ^{163}Ta g.s..

 α radiations

$E\alpha$	E(level)	Comments
5015 [†] 12	0+x?	$E\alpha$: from 1992Me10 , the assignment is based on excitation functions of α 's and γ 's. Others: 5330 10 (1978Sc26) and 5440 3 (1982De11), reassigned later (1984Sc06) to ^{166}Re α decay. 1984Sc06 assign 5136 8 to the ^{167}Re α decay, which was assigned earlier (1978Sc26) to ^{168}Re α decay. 1992Me10 suggest that 5136 is associated with α decay of W isotopes. if it is assumed that this transition feeds the ^{163}Ta g.s., the implied energy fit is problematic.

[†] Existence of this branch is questionable.