Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. W. Reich	NDS 113, 2537 (2012)	1-Mar-2012

S(n)=10004 (syst) *423*; S(p)=−1020 *4*; Q(α)=5136 (syst) *357* 2017Wa10
Q(ε)=11956 (syst) *334*; S(2p)=724 *4*; Q(εp)=9395 (syst) *299* 2017Wa10
Additional information 1.
Additional information 2.
The data on these levels are derived primarily from studies of their decay properties, with the levels themselves being the source material produced through various heavy-ion-induced reactions.

^{156}Ta Levels

E(level)	J^π	$T_{1/2}$	Comments
0	(2^-)	106 ms *4*	%p=71 *3*; %ε+%β^+=29 *3* %p,%ε+%β^+: From 2011Da12. From this branching, the half-life for ε+β^+ decay is computed to be 366 ms, which is to be compared with the predicted value 350 ms from 1997Mo25. From 1992Pa05, %p≈100. See, also, 2002So02. α decay is not reported and is not expected to be appreciable, since such a transition would take place across the N=82 major closed shell (see, e.g., 1993Li34, 1995Ro39). J^π: Partial half-life for proton decay to the ^{155}Hf g.s. (J^π=(7/2$^-$)) is consistent with that expected for emission of a $d_{3/2}$ proton (2011Da12). Likely configuration of the parent state is $((\pi\ d_{3/2})(\nu\ f_{7/2}))_{2-}$. $T_{1/2}$: From 2011Da12. Others: 144 ms *24* (1996Pa01); 165 ms *+165−55* (1992Pa05).
102 *7*	9^+	0.36 s *4*	%ε+%β^+=95.8 *9*; %p=4.2 *9* %p: From p(t) and α(t,^{156}Hf) (1996Pa01). From α(t) from ^{156}Hf decay, these authors measure %ε+%β^+=56 *16* for feeding the ^{156}Hf g.s. and %ε+%β^+=39 *13* for feeding the 8^+ isomer in ^{156}Hf. 1993Li34 report %p≈3 and %ε+%β^+≈97. E(level): From difference in Q(p) values from this level and the ^{156}Ta g.s. to the ^{155}Hf g.s. (1996Pa01). 1993Li34 report 81 keV *17* for this energy. $T_{1/2}$: Weighted average of 0.32 s *8* (1993Li34) and 0.38 s *5* (1996Pa01). Other:>10 ms (1989Ho12). J^π: Favored Gamow-Teller transition to the 8^+ isomer in ^{156}Hf. Probable configuration is $((\pi\ h_{11/2})(\nu\ f_{7/2}))_{9+}$. However, $J^\pi=7^+$ and 9^+ are also possibilities (1993Li34).