^{180}Hf β^- decay (5.53 h) 1985Ke02,1992Ke04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 126, 151 (2015)	1-Feb-2015

Parent: ^{180}Hf: E=1141.552 *15*; $J^\pi=8^-$; $T_{1/2}$=5.53 h *2*; Q(β^-)=−846 *3*; %β^- decay=0.31 *8*

1985Ke02: ^{180m}Hf activity from thermal neutrons on ^{179}Hf. Measured Eγ, Iγ, $\gamma\gamma$ using Ge(Li) detector surrounded by 4πNaI array used as a veto for high multiplicity γ cascades from ^{180m}Hf IT decay.

1992Ke04: Similar experimental setup as 1985Ke02. Included a Si surface-barrier detector for measuring Eβ, Iβ and for vetoing conversion electrons from ^{180m}Hf IT decay.

A total energy release of 0.68 keV *21* is calculated for this decay scheme using the RADLST code, in agreement with the effective Q value of 0.9 keV *3*.

α: Additional information 1.

^{180}Ta Levels

E(level)†	J$^\pi$†	T$_{1/2}$†
0.0	1$^+$	8.154 h *6*
77.2 *12*	9$^-$	>7.1×10^{15} y
177.87 *11*	8$^+$	70.0 ns *14*

† From the Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^-†	Log *ft*	Comments
(118 *3*)	177.87	0.023 *3*	6.80 *16*	av Eβ=30.93 *83* Iβ^-: from absolute intensity of 100.7γ and α(100.7γ).
(218 *3*)	77.2	0.29 *8*	6.53 *19*	av Eβ=59.72 *96* Iβ^-: measured value reported as 0.29 *5*, with an additional systematic uncertainty of 0.06 (1992Ke04). Other: <1.4 from earlier measurement in 1985Ke02.

† Absolute intensity per 100 decays.

γ(^{180}Ta)

Iγ normalization: As given in 1985Ke02 from experimental ratio of Iγ(100.7γ) to Iγ(93.3γ) in ^{180}Hf.

E$_\gamma$‡	I$_\gamma$#	E$_i$(level)	J$^\pi_i$	E$_f$	J$^\pi_f$	Mult.†	α	Comments
100.70 *5*	100	177.87	8$^+$	77.2	9$^-$	E1	0.360	α(K)=0.295 *5*; α(L)=0.0507 *8*; α(M)=0.01152 *17*; α(N+..)=0.00312 *5*

† From the Adopted Gammas.
‡ From 1985Ke02.
# For absolute intensity per 100 decays, multiply by 1.7×10^{-4} *4*.

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays