

Adopted Levels

<u>Type</u>	<u>Author</u>	<u>History Citation</u>	<u>Literature Cutoff Date</u>
Full Evaluation	C. Morse	NDS 182, 167 (2022)	14-Sep-2021

$Q(\beta^-) = -4374$ SY; $S(n) = 7264$ SY; $S(p) = 994$ SY; $Q(\alpha) = 1.132 \times 10^4$ 5 [2021Wa16](#)

$\Delta Q(\beta^-) = 1053$, $\Delta S(n) = 1026$, $\Delta S(p) = 1090$ ([2021WA16](#)).

$S(2n) = 13368$ SY 980, $S(2p) = 4330$ SY 1070, $Q(\epsilon p) = 539$ SY 1046 ([2021WA16](#)).

Four publications have reported the production of ^{293}Ts through the $^{249}\text{Bk}(^{48}\text{Ca}, 4n)$ reaction, one using TASCA at GSI

([2019KH04](#)) and three using DGFRS at JINR ([2012OG06](#), [2013OG04](#), [2011OG04](#)). Evaporation residues were implanted into

position-sensitive silicon detectors, and identified based on the observation of time- and position-correlated α -decay chains

terminated by spontaneous fission, with properties matching those of the known daughter nuclei. Eighteen such chains have been

observed in total, with two missing the α -decay of ^{293}Ts .

Half-lives, branching ratios, and α -decay energies in this evaluation have been computed from the individual events listed in the

references above. Half-life uncertainties have been computed according to the method of [1984SC13](#). An additional 10 keV

systematic uncertainty is assumed for the α -decay energies, which is added in quadrature to the averaged statistical uncertainty.

 ^{293}Ts Levels

<u>E(level)</u>	<u>$T_{1/2}$</u>	<u>Comments</u>
0	21 ms +7-4	% α =100; %SF<6 E(level): Assumed ground state. $T_{1/2}$: From 16 events.