

Adopted Levels

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	C. M. Baglin ¹ , E. A. Mccutchan ² , S. Basunia ¹		NDS 153, 1 (2018)	1-Jul-2022

$Q(\beta^-)=7000$ SY; $S(n)=4300$ SY; $S(p)=10110$ SY; $Q(\alpha)=-2390$ SY [2021Wa16](#)
[2012Ku26](#): ¹⁷⁰Gd produced in ⁹Be(²³⁸U,F) reaction with $E(^{238}\text{U})=1$ GeV/nucleon and identified using FRS with tof- ΔE - $B\rho$ measurements. Time of flight measured with two plastic scintillators, energy loss or deposit with the MUSIC detector consisting of ionization chambers, and magnetic rigidity using four time-projection chambers. Measured production cross section.
[2017Wu04](#): ¹⁷⁰Gd produced in ⁹Be(²³⁸U,F) reaction with $E(^{238}\text{U})=345$ GeV/nucleon and identified using BigRIPS separator and the tof- $B\rho$ - ΔE method. Reaction products transported through the ZeroDegree Spectrometer and implanted into the WAS3ABi detector. Measured implanted ion- $\beta(t)$; deduced $T_{1/2}$.

¹⁷⁰Tb Levels

E(level)	$T_{1/2}$	Comments
0.0	0.96 s 8	$\% \beta^- = 100$; $\% \beta^- n = ?$ $\% \beta^-$: only β^- decay is expected. $T_{1/2}$: from 2017Wu04 , fitting the implanted ion- β^- -t spectrum and using least-squares and maximum-likelihood methods. The analysis included the contributions from the parent, daughter and ground-daughter decays, as well as a constant background. $T_{1/2}$: other: 0.91 s <i>18-13</i> (2016So13). J^π : 2^- is possible based on systematics of well-deformed nuclei in this mass region resulting from the $\pi 3/2[411]$ and $\nu 7/2[514]$ Nilsson orbitals Then the Gallagher-Moszkowski rule, gives the $K^\pi=2^-$, $\pi 3/2[411] \otimes \nu 7/2[514]$ configuration for the ground state. A high-spin, $K^\pi=5^-$ isomer, arising from the same configuration, is also possible.