

Adopted Levels

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia		NDS 151, 1 (2018)	1-Apr-2018

$Q(\beta^-)=1.025\times 10^4$  27;  $S(n)=5.50\times 10^3$  19;  $S(p)=1.40\times 10^4$  5Y;  $Q(\alpha)=-1.01\times 10^4$  5 2017Wa10  
 $\Delta S(p)=260$  (2017Wa10).

Production: fragmentation of 33 MeV/nucleon <sup>86</sup>Kr incident on Ti (1985Gu14); 500 MeV/nucleon <sup>86</sup>Kr incident on Be (1992We04,1998Am04); 64.5 MeV/nucleon <sup>65</sup>Cu bombardment of <sup>9</sup>Be (1998So03); <sup>58</sup>Ni(<sup>86</sup>Kr,X),  $E(^{86}\text{Kr})=60.4$  MeV/nucleon (1999So20).

Identification: Mass number A from total E and tof; Proton number Z from  $\Delta E$  and E (1985Gu14);

<sup>59</sup>Ti  $\beta^-$  decay: 2003So21, 1999Le67, 1999So20, 1998So03, 1998Am04 All papers are by the same research group except 1998Am04.

2005Li53: <sup>59</sup>V isotope produced from fragmentation of <sup>86</sup>Kr<sup>34+</sup> beam on a Be target and studied <sup>59</sup>V  $\beta^-$  decay (See <sup>59</sup>V  $\beta^-$  decay for detail).

<sup>59</sup>V Levels

E(level)	J <sup>π</sup>	T <sub>1/2</sub>	Comments
0.0	(5/2 <sup>-</sup> ,3/2 <sup>-</sup> )	97 ms 2	$\% \beta^- = 100$ ; $\% \beta^- n < 0.03$ $J^\pi$ : For moderate deformations, a ( $\pi$ f <sub>7/2</sub> ) g.s. configuration is expected, and the 23rd proton should occupy the 3/2[321] and the 5/2[303] orbitals, respectively, for prolate and oblate deformations. QRPA calculations predict a prolate g.s. 120 keV below an oblate configuration (1999So20), so it is unclear which of these orbitals is in fact the g.s. and <sup>59</sup> V may exhibit shape coexistence. 2005Li53 list tentative 5/2 <sup>-</sup> referring to 1999So20. $\% \beta^- n$ : 2005Li53 estimated (~3%) from its decay to 2 <sup>+</sup> state in <sup>58</sup> Cr observing 880γ and 1056γ in the delayed γ-ray spectrum. T <sub>1/2</sub> : From 102γ(t) and 208γ(t) in 2005Li53 – good statistics – decay curve fitted with an exponential function with linear background; consistent with a half-life of 95 ms 3, determined from <sup>59</sup> Cr growth and decay with half-life of 1.05 s 9 (1050 ms 90) of <sup>59</sup> Cr in <sup>59</sup> V $\beta^-$ decay. Other values: 75 ms 7 (1999So20), 130 ms 20 (1998Am04), and 70 ms 40 (1998So03). Value from 2005Li53 is adopted over that in 1999So20, based on better statistics ( 33 times) and precision.