

Adopted Levels

Type	History		Literature Cutoff Date
	Author	Citation	
Full Evaluation	Balraj Singh	ENSDF	30-Sep-2020

$Q(\beta^-) = -14400$  SY;  $S(n) = 16030$  SY;  $S(p) = -520$  SY;  $Q(\alpha) = -2780$  SY [2017Wa10](#)

Estimated uncertainties ([2017Wa10](#)): 450 for  $Q(\beta^-)$ , 360 for  $S(n)$ , 200 for  $S(p)$ , 290 for  $Q(\alpha)$ .

$S(2n) = 30760$  360,  $S(2p) = 3800$  200,  $Q(\epsilon p) = 6750$  200 (syst, [2017Wa10](#)).

[1989HoZG](#) (also [1989HoZK](#)): tentative evidence of production of  $^{77}\text{Y}$  in  $^{40}\text{Ca}(^{40}\text{Ca}, p2n)$  reaction at 100 MeV. Search for delayed protons from the decay of  $^{77}\text{Y}$  within a  $T_{1/2}$  range of 10-100  $\mu\text{s}$  and proton energy range of 25-600 keV proved negative.

[1999Ja02](#) (also [1997Re12](#)): identification of  $^{77}\text{Y}$  in  $\text{Ni}(^{92}\text{Mo}, X)$  reaction at  $E = 60$  MeV/nucleon, followed by mass and charge analysis at GANIL facility using LISE3 spectrometer. Measured lower limit of half-life. Microscopic-macroscopic calculations and systematics to estimate spin-parity of g.s.

[2002Fa13](#), [2001Ki13](#): production of  $^{77}\text{Y}$  in  $^9\text{Be}(^{112}\text{Sn}, X)$  at 1 GeV/nucleon, GSI facility using fragment separator. Measured  $\beta^+$  particles,  $\gamma$  rays,  $\beta\gamma$  coin, isotopic half-life. [2007WeZX](#) is a preprint of the results reported in [2002Fa13](#) and [2001Ki13](#).

[Additional information 1](#).

Theoretical calculations: consult the NSR database at [www.nndc.bnl.gov](http://www.nndc.bnl.gov) for three primary theory references dealing with nuclear structure calculations.

 $^{77}\text{Y}$  Levels

E(level)	$J^\pi$	$T_{1/2}$	Comments
0	(5/2 <sup>+</sup> )	57 ms +22-12	$\% \epsilon + \% \beta^+ = 100$ ; $\% \epsilon p = ?$ ; $\% p = ?$ From detection of $\beta^+$ and $\gamma$ events, <a href="#">2002Fa13</a> conclude that $\beta^+$ decay mode is dominant while proton emission branch is expected to be small. The ground state is probably unbound towards proton emission. $J^\pi$ : probable 5/2[422] orbital from comparison of neighboring nuclides and microscopic-macroscopic calculations ( <a href="#">1999Ja02</a> ). $T_{1/2}$ : from time-correlated events ( <a href="#">2001Ki13</a> , <a href="#">2002Fa13</a> , <a href="#">2007WeZX</a> ), total of 12 events associated with the $^{77}\text{Y}$ isotope.