

Adopted Levels

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	T. D. Johnson, Balraj Singh		NDS 142, 1 (2017)	15-Apr-2017

Q(β^-)=2340 40; S(n)=5020 40; S(p)=9290 70; Q(α)=280 80 [2017Wa10](#)
 S(2n)=11860 40, S(2p)=17380 300 (syst) ([2017Wa10](#)).
 Other: Q(β^-)=2443 41 from measured mass excess(¹⁸⁹Re)=-38063 10 ([2013Sh30](#)) and mass excess(¹⁸⁹W)=-350620 40 ([2017Wa10](#)).

[1963FI07](#): ¹⁸⁹W produced and identified in ¹⁹²O(n, α), E=14 MeV reaction followed by chemical separation and measurement of β radiation and half-life. Later measurements: [1965Ka07](#), [1997Ya03](#), [1997Mi27](#), [2002Mi40](#) and [2009Yu11](#).

[Additional information 1](#).

¹⁸⁹W Levels

E(level)	T _{1/2}	Comments
0	11.6 min 2	$\% \beta^- = 100$ T _{1/2} : weighted average taken by evaluators from decay curves for 22 γ rays (1997Ya03 ; decay curves for 11 γ rays were displayed in graphs; half-lives in minutes were reported as: 11.7 10, 11.7 17, 12.2 7, 11.5 7, 11.3 11, 11.8 4, 11.8 4, 12.2 12, 11.3 2, 12.2 6, 12.0 10, 12.1 15, 11.5 9, 11.3 11, 11.5 10, 10.7 20, 11.8 12, 11.8 12, 12.5 12, 11.3 13, 11.7 13 and 11.0 13, authors give a value of 11.7 min 5). Others: 11.2 min 17 (2009Yu11 , from decay curve for 260 γ); 9.1 min 4 (2002Mi40 , from weighted average of 8.9 min 4 and 9.4 min 6 for decay curves for 260 and 422 γ rays, authors give an average of 9.2 min 3); 12.1 min 2 (1997Mi27 , from the same group, and as referenced in 2002Mi40 , weighted average of 10.6 min 13, 11.9 min 2, 9.9 min 27, 12.6 min 3 for 260 and 422 γ rays, value of 8.0 min 9 for a weak γ ray not used, 2002Mi40 give an average value of 10.8 min 2 which is close to unweighted average of all the five values). In the original 1997Mi27 , 9.3 min 2 and 11.9 min 2 are reported for the 260 γ ray and 7.2 min 8 and 12.6 min 3 are reported for the 421.5 γ ray. The authors state that the results for ¹⁸⁹ W are preliminary, it appears some of the results were superseded by the time 2002Mi40 was published. Other half life measurements: 11.5 min 3 (1965Ka07 , from decay curves for two γ rays), and 11 min (1963FI07 , from β decay curve). J ^π : 3/2 ⁻ from systematics (2017Au03), 7/2 ⁻ from theoretical considerations (1997Mo25).