

### Adopted Levels

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh		NDS 177, 1 (2021)	3-Sep-2021

$Q(\beta^-)=2850$  SY;  $S(n)=6290$  SY;  $S(p)=10890$  SY;  $Q(\alpha)=-2040$  SY [2021Wa16](#)  
 $\Delta Q(\beta^-)=\Delta S(n)=360$ ,  $\Delta S(p)=\Delta Q(\alpha)=500$  (syst,[2021Wa16](#)).  
 $S(2n)=10930$  360 (syst,[2021Wa16](#)),  $S(2p)=19830$  (theory,[2019Mo01](#)).  
[2009St16](#), [2008StZY](#) (thesis): <sup>194</sup>W nuclide identified in the reaction <sup>9</sup>Be(<sup>208</sup>Pb,X) with a beam energy of 1 GeV/nucleon produced by the SIS-18 accelerator at GSI facility. Target thickness=2.5 g/cm<sup>2</sup>. Fragments identified in flight by the Fragment Separator (FRS) operated in achromatic mode based on time of flight,  $B\rho$  and energy loss. Data collected on six FRS magnetic rigidity settings centered on: <sup>206</sup>Hg, <sup>203</sup>Ir, <sup>202</sup>Os, <sup>199</sup>Os, <sup>192</sup>W, and <sup>185</sup>Lu. Nuclides halted in a passive stopper surrounded by the RISING array in "Stopped Beam" configuration.  
[2009Al30](#), [2011St21](#), [2014Ku02](#): production yields and cross section measured.  
Theoretical structure references: consult the NSR database ([www.nndc.bnl.gov/nsr/](http://www.nndc.bnl.gov/nsr/)) for 16 primary references dealing with nuclear structure calculations.  
[Additional information 1](#).

### <sup>194</sup>W Levels

E(level)	J <sup>π</sup>	Comments
0	0 <sup>+</sup>	<p><math>\% \beta^- = 100</math></p> <p>While no decay mode has been experimentally observed, evaluators assign <math>\% \beta^- = 100</math> by inference, as <math>\beta^-</math> is the only decay mode energetically possible.</p> <p>Approximate number of nuclei implanted in the plastic stopper reported to be 2870 50 (<a href="#">2009St16</a>,<a href="#">2008StZY</a>).</p> <p>Measured production <math>\sigma=1.40</math> mb 29 (<a href="#">2014Ku02</a>) in <sup>9</sup>Be(<sup>208</sup>Pb,X) reaction at 1 GeV/nucleon.</p> <p><math>T_{1/2}</math>: no experimental value has been reported. A lower limit of 300 ns is implied from time of flight through the FRS separator (<a href="#">2009St16</a>). In <a href="#">2008StZY</a>, <math>T_{1/2}</math> was suggested as much less than 3.4 ms. Assuming a systematic decreasing trend of half-lives in neutron-rich nuclei, as the neutron number increases, an upper limit of 1 min is suggested from the known half-lives of 30.0 min, 11.6 min and 69.78 d for <sup>190</sup>W, <sup>189</sup>W and <sup>188</sup>W, respectively, while <sup>186</sup>W is stable. Other: 20 s in <a href="#">2021Ko07</a> from a certain systematic trend.</p> <p>Theoretical <math>T_{1/2}=2.97</math> s (<a href="#">2019Mo01</a>).</p> <p>Theoretical <math>T_{1/2}=0.999</math> s (<a href="#">2016Ma12</a>).</p>