

Adopted Levels

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	E. Achterberg, O. A. Capurro, G. V. Marti		NDS 110,1473 (2009)	31-May-2008

$Q(\beta^-) = -8.36 \times 10^3$ syst; $S(n) = 9.54 \times 10^3$ syst; $S(p) = -7.0 \times 10^2$ syst; $Q(\alpha) = 7.02 \times 10^3$ 5 [2012Wa38](#)

Note: Current evaluation has used the following Q record -8320 syst 9500 syst -740 syst 7020 50 [2003Au03](#).

$\Delta Q(\beta) = 120$, $\Delta S(n) = 120$, $\Delta S(p) = 140$ [2003Au03](#).

$Q(\beta^+) = 11560$ 110 keV (estimated by [2003Au03](#) from systematics).

[2002Ro17](#): ^{178}Tl activity produced by the $^{102}\text{Pd}(^{78}\text{Kr},pn)$ reaction, at 355 MeV (beam, 340 MeV at mid-target). 2-ms period pulsed beam. Berkeley gas-filled separator for reaction products, followed by parallel-plate avalanche counter. Position-sensitive Si strip detector for evaporation residue implantation, and α decay measurements.

 ^{178}Tl Levels

E(level)	$T_{1/2}$	Comments
0.0	254 ms +11-9	<p>$\% \varepsilon + \% \beta^+ \approx 47$; $\% \alpha \approx 53$ $T_{1/2}$: From 2002Ro17. $\% \varepsilon + \% \beta^+ \approx 47$, $\% \alpha \approx 53$ (2003Au02). The ^{178}Tl g.s. decays by four α branches to states in ^{174}Au, and by ε decay to ^{178}Hg. The α transition energies are: 6.859 5, 6.785 5, 6.704 5 and 6.616 15 MeV, with relative $I(\alpha)$ of 10, 18, 59 and 13%, respectively (2002Ro17). Other: 1997Ca16 report $E\alpha = 6.87, 6.79, 6.71$ MeV, for the first three branches.</p>