Adopted Levels

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 159, 1 (2019)	30-Aug-2019

S(n)=11990 *80*; S(p)=−1155 *19*; Q(α)=7067 *7* 2017Wa10

1999Po09: Produced using the ^{102}Pd(^{78}Kr,1p2n) reaction. Projectile: ^{78}Kr, E=370 MeV. Target: ^{102}Pd, 1 mg/cm^2 thick, 78% enriched. Detectors: Argonne Fragment Mass Analyzer, Parallel Grid Avalanche Counter, 40x40 strips Double-sided Silicon Strip Detector. Measured: time correlated Eα and E(p); Iα, Ip, $T_{1/2}$; recoil-Eα and recoil-E(p) coin, Eα(parent)-Eα(daughter) correlations; %α, %p.

Others: 2001Da31 (experimental) and 2001Da18 (theoretical) − same authors as 1999Po09; 1990SeZW, 1991Se01, 1999Gu08, 2004Ke06.

^{177}Tl Levels

E(level)	J^π	$T_{1/2}$[†]	Comments
0.0	$(1/2^+)$	18 ms *5*	%α=73 *13*; %p=27 *13* %α,%p: From 1999Po09, measured directly from decay energy spectra. Eα=6907 keV *7*, E(p)=1156 keV *20* (1999Po09). J^π: Favored α-decay to the ^{173}Au g.s. ($J^\pi=(1/2^+)$); J^π systematics. configuration: $\pi(s^{-1}_{1/2})$ orbital. Favored α-decay to the ^{173}Au g.s. ($\pi(s^{-1}_{1/2})$); comparisons between the measured partial proton half-life of $T_{1/2}$=67 ms *37* and WKB calculations of 28 ms $\pi(s^{-1}_{1/2})$, 0.21 s $\pi(d^{-1}_{3/2})$ and 340 s $\pi(h^{-1}_{11/2})$; systematics of configurations in neighboring odd-Z nuclei. production cross section $\sigma \approx 10$ nb (1999Po09).
807 *23*	$(11/2^-)$	230 μs *40*	%α=49 *8*; %p=51 *8* %α,%p: From 1999Po09, measured directly from decay energy spectra. Other: %α= 45 *20*, %p=55 *20* in 2004Ke06. Eα=7487 keV *13*, E(p)=1958 keV *10* (1999Po09); Other: Eα=7472 keV *11*, E(p)=1954 keV *12* (2004Ke06). E(level): From measured E_{iso}(p) and E_{gs}(p) in 1999Po09. $T_{1/2}$: Other: 160 μs *+70−40* from α(t) and 290 μs *+150−110* from p(t) in 2004Ke06. J^π: Favored α-decay to the ^{173}Au isomer ($J^\pi=(11/2^-)$); J^π systematics. configuration: $\pi(h^{-1}_{11/2})$ orbital. Favored α-decay to the ^{173}Au isomer ($\pi(h^{-1}_{11/2})$); comparisons between the measured partial proton half-life of $T_{1/2}$=451 μs *106* and WKB calculations of 1.8 ns $\pi(s^{-1}_{1/2})$, 12.5 ns $\pi(d^{-1}_{3/2})$ and 15 μs $\pi(h^{-1}_{11/2})$); systematics of configurations in neighboring odd-Z nuclei. production cross section $\sigma \approx 30$ nb (1999Po09).

[†] From α(t) and p(t) in 1999Po09.