Adopted Levels

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	K. Auranen and E. A. Mccutchan	NDS 168, 117 (2020)	1-Aug-2020

Q(β^-)=6000 *SY*; S(n)=3540 *SY*; S(p)=8220 *SY*; Q(α)=2130 *SY* 2017Wa10
ΔQ(β^-)=200; ΔS(n)=210; ΔS(p)=280; ΔQ(α)=360 (2017Wa10).
S(2n)=8450 (syst) *200*; S(2p)=18460 (syst) *450*; Q(β^-n)=870 (syst) *200* (2017Wa10).
1998Pf02: ^{212}Tl produced by fragmentation of a 1 GeV/nucleon beam of ^{238}U on a beryllium target. The ions of ^{212}Tl were separated and analyzed with the GSI FRagment Separator (FRS).
2010Al24: ^{212}Tl nuclide produced in ^{9}Be(^{238}U,X) reaction with E(^{238}U)=1 GeV/nucleon at GSI facility. Fragments were separated with the high resolving power magnetic spectrometer FRagment Separator (FRS) and identified based on measurements of magnetic rigidity, velocity, time-of-flight, energy loss and atomic number of the fragments using two plastic scintillators and two multisampling ionization chambers.
2012Be28: see 2010Al24 above for method of production at GSI facility; deduced $T_{1/2}$.
2017Ca12,2016Ca25: ^{212}Tl produced in ^{9}Be(^{238}U,F) reaction with E(^{238}U)=1 GeV/nucleon and separated using the GSI FRagment Separator (FRS) using the Bρ-ΔE-Bρ technique. Ions were implanted into the SIMBA array consisting of a stack of double-sided silicon strip detectors. Measured β, β(t), βn using the BELEN array consisting of 30 ^{3}He tubes within polyethylene moderator and shielding. Preliminary results reported in 2016DoZZ.

^{212}Tl Levels

E(level)	J$^\pi$	$T_{1/2}$	Comments
0.0	(5$^+$)	30.9 s *80*	%β^-=100; %β^-n=1.8 *18* (2017Ca12,2016Ca25) E(level): from assumption that the observed fragments correspond to nuclei in their ground state. J$^\pi$: from observed strong β feeding of (4$^+$) and (6$^+$) levels in ^{212}Pb and systematics of lighter Tl isotopes, J^π(^{208}Tl)=5$^+$ and J^π(^{210}Tl)=(5$^+$). $T_{1/2}$: from (implant)-β decay curve analyzed using maximum likelihood method (2017Ca12,2016Ca25). Others: 96 s *+42−38* (2012Be28) from implant-$\beta\gamma$(t) with 2768 implant events and fitting method for high background conditions. %β^-n: from implant-β and implant-βn correlations (2017Ca12,2016Ca25).