

$^{207}\text{Pb}(\mu^-, \gamma)$ 1981Bu14,1983Bu02

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev, S. Lalkovski		NDS 112, 707 (2011)	1-Aug-2010

1981Bu14,1983Bu02: Facility: SREL in Newport News, Virginia; Beam: μ^- ; Target: 164 gm, enriched to 97% in ^{207}Pb ;
 Detectors: one 5 cm³ planar Ge (FWHM(898 keV) = 1.34 keV, $\Delta\tau=2.6$ ns), one 35 cm³ Ge(Li) (FWHM(1.77 MeV) = 4.07 keV, $\Delta\tau=19$ ns); Measured: γ , $\gamma(t)$, $E\gamma$;
 Also: [1980Bu17](#).

 ^{207}Tl Levels

E(level) [†]	J^π [‡]	$T_{1/2}$	Comments
0	$1/2^+$		
351.06 4	$3/2^+$	53 ns 2	$T_{1/2}$: From 351.06-keV $\gamma(t)$ (1981Bu14). $T_{1/2}$: differs from the adopted value, but such a short half-life is characteristic for the μ^- capture process (1981Bu14,1983Bu02).

[†] From [1981Bu14](#).

[‡] From the Adopted Levels.

 $\gamma(^{207}\text{Tl})$

E_γ [†]	I_γ [‡]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [#]	δ	α [@]
351.06 4	6.3 12	351.06	$3/2^+$	0	$1/2^+$	M1+E2	+0.271 4	0.243 4

[†] From [1981Bu14](#).

[‡] I_γ per 100 muon captures. Based on measured 6.1% 12 photons per stopped muons ([1983Bu02](#)), and the authors' estimate that roughly 97% of the muons stopped in Pb are captured by the nucleus.

[#] From the adopted gammas.

[@] From [1981Bu14](#).

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Level Scheme

Intensities: Relative $I_{(\gamma+ce)}$

