

**<sup>211</sup>Po α decay (25.2 s) 1989Ku08,1962Pe15**

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

Parent: <sup>211</sup>Po: E=1462 6; J<sup>π</sup>=(25/2<sup>+</sup>); T<sub>1/2</sub>=25.2 s 6; Q(α)=7594.5 5; %α decay=99.984 4

<sup>211</sup>Po-%α decay: %α=99.984 4 deduced from %IT=0.016 4 in 1989Ku08.

1989Ku08: Facility: cyclotron; Source: <sup>211m</sup>Po produced in <sup>208</sup>Pb(α,n) reaction at E(α)=20-24 MeV; Target: stack of five to ten foils of natural lead each of 500 μg/cm<sup>2</sup> and backed on 1 μm gold; Detectors: tape, one Ge(Li) (E<sub>eff</sub>=9 % in the range 0.2-1 MeV), one Si(Au) detector; Measured: α-γ coin., E<sub>γ</sub>, E<sub>α</sub>.

1962Pe15: Facility: HILAC; Source: <sup>211m</sup>Po from <sup>4</sup>He(<sup>207</sup>Pb,<sup>211</sup>Po) reaction at E(α)=10.6 MeV; Target: 50 to 500 mg/cm<sup>2</sup> lead oxide films on nickel or stainless steel foils; Detectors: one Si(Au) surface barrier detector, one scintillation detector, chemical separation; Measured: α-γ coin., E(α), α(t); Deduced: level scheme.

Others: 1982Bo04, 1962Ka15, 1954Je11, 1954Sp32.

<sup>207</sup>Pb Levels

E(level) <sup>†</sup>	J <sup>π</sup> <sup>‡</sup>
0.0	1/2 <sup>-</sup>
569.7028 20	5/2 <sup>-</sup>
897.77 12	3/2 <sup>-</sup>
1633.4 10	13/2 <sup>+</sup>

<sup>†</sup> From a least-squares fit to E<sub>γ</sub>.

<sup>‡</sup> From the Adopted Levels.

α radiations

E <sub>α</sub> <sup>†</sup>	E(level)	I <sub>α</sub> <sup>‡@</sup>	HF#	Comments
7275 15	1633.4	91.05 15	1.90×10 <sup>3</sup> 38	I <sub>α</sub> : Deduced by the evaluators as 100%-Σ(I <sub>α<sub>i</sub></sub> ); 91% in 1962Pe15.
7995 15	897.77	1.66 3	1.61×10 <sup>7</sup> 32	
8305 15	569.7028	0.25 2	8.0×10 <sup>8</sup> 17	
8883 5	0.0	7.04 14	7.1×10 <sup>8</sup> 14	E <sub>α</sub> : From 1993Ry01, based on 8885 keV 5 (1982Bo04) and 8870 keV 10 (1962Pe15).

<sup>†</sup> From 1962Pe15. Evaluators increased E<sub>α</sub> by 5 keV to correct for changes in the calibration standard (1991Ry01).

<sup>‡</sup> From 1962Pe15.

# r<sub>0</sub>(<sup>207</sup>Pb)=1.47 6. Average of r<sub>0</sub>(<sup>208</sup>Pb)=1.5212 4 and r<sub>0</sub>(<sup>206</sup>Pb)=1.40887 4.

@ For absolute intensity per 100 decays, multiply by 0.99984 4.

γ(<sup>207</sup>Pb)

E <sub>γ</sub> <sup>†</sup>	I <sub>γ</sub> <sup>‡</sup>	E <sub>i</sub> (level)	J <sub>i</sub> <sup>π</sup>	E <sub>f</sub>	J <sub>f</sub> <sup>π</sup>	Mult. <sup>†</sup>	Comments
569.698 2		569.7028	5/2 <sup>-</sup>	0.0	1/2 <sup>-</sup>	E2	
897.78 8	1.65 11	897.77	3/2 <sup>-</sup>	0.0	1/2 <sup>-</sup>		I <sub>γ</sub> : Intensity per 100 α decays from α <sub>γ</sub> in 1962Pe15.
1063.656 3		1633.4	13/2 <sup>+</sup>	569.7028	5/2 <sup>-</sup>		

<sup>†</sup> From the adopted gammas.

<sup>‡</sup> For absolute intensity per 100 decays, multiply by 0.99984 4.

**$^{211}\text{Po}$   $\alpha$  decay (25.2 s) 1989Ku08,1962Pe15**Decay SchemeIntensities:  $I_\gamma$  per 100 parent decays