

²⁰⁵Pb IT decay (5.55 ms) 1976Li09,1971Ma59

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 166, 1 (2020)	20-Apr-2020

Parent: ²⁰⁵Pb: E=1013.85 3; J^π=13/2⁺; T_{1/2}=5.55 ms 2; %IT decay=100.0

1976Li09: Produced using ²⁰⁴Hg(α,3nγ); E(α)=40–MeV; Target: ²⁰⁴Hg, enriched up to 99.7%; Measured: E_γ, I_γ, γγ coin, γ(t), γ(θ), conversion electrons, g-factor, μ.

1971Ma59: Produced using ²⁰⁴Hg(α,3nγ); E(α)=41–MeV; Target: liquid ²⁰⁴Hg enriched up to 80%; Detectors:Ge(Li); Measured: E_γ, I_γ, γ(t), g-factor, μ.

Others: 1960Be19, 1960Ve04, 1973Sa22, 1977Go15.

²⁰⁵Pb Levels

E(level) [†]	J ^π [‡]	T _{1/2} [‡]
0.0 [#]	5/2 ⁻	1.70×10 ⁷ y 9
703.47 [@] 4	7/2 ⁻	
987.63 [@] 4	9/2 ⁻	
1013.85 ^{&} 4	13/2 ⁺	5.55 ms 2

[†] From a least-squares fit to E_γ.

[‡] From Adopted Levels.

[#] configuration=ν(f_{5/2}⁻¹).

[@] configuration=ν(f_{5/2}⁻¹)⊗2⁺.

[&] configuration=ν(i_{13/2}⁻¹).

γ(²⁰⁵Pb)

E _γ [†]	I _γ ^{‡a}	E _i (level)	J _i ^π	E _f	J _f ^π	Mult. [@]	δ [@]	α ^{&}	Comments
26.220 11	0.0116 [#] 12	1013.85	13/2 ⁺	987.63	9/2 ⁻	M2		1.144×10 ⁴	%I _γ =0.0086 12 α(L)=8.39×10 ³ 12; α(M)=2.32×10 ³ 4 α(N)=605 9; α(O)=116.2 17; α(P)=8.80 13
284.15 10	12.0 [#] 13	987.63	9/2 ⁻	703.47	7/2 ⁻	M1+E2	0.33 22	0.46 5	%I _γ =8.9 13 α(K)=0.37 5; α(L)=0.067 4; α(M)=0.0158 6 α(N)=0.00401 16; α(O)=0.00079 4; α(P)=8.2×10 ⁻⁵ 8
310.35 5	1.00 [#] 3	1013.85	13/2 ⁺	703.47	7/2 ⁻	E3		0.548	%I _γ =0.74 7 α(K)=0.1609 23; α(L)=0.287 4; α(M)=0.0771 11 α(N)=0.0196 3; α(O)=0.00357 5; α(P)=0.000205 3
703.45 5	18.8 20	703.47	7/2 ⁻	0.0	5/2 ⁻	M1+E2	7.1 8	0.0142 3	%I _γ =14.0 18 α(K)=0.01088 21; α(L)=0.00252 4; α(M)=0.000610 10 α(N)=0.0001545 25;

Continued on next page (footnotes at end of table)

^{205}Pb IT decay (5.55 ms) [1976Li09,1971Ma59](#) (continued) $\gamma(^{205}\text{Pb})$ (continued)

E_γ †	I_γ ‡ ^a	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. @	α &	Comments
987.66 5	114# 12	987.63	9/2 ⁻	0.0	5/2 ⁻	E2	0.00682	$\alpha(\text{O})=2.98\times 10^{-5}$ 5; $\alpha(\text{P})=2.66\times 10^{-6}$ 5 %I γ =84.8 18 $\alpha(\text{K})=0.00543$ 8; $\alpha(\text{L})=0.001062$ 15; $\alpha(\text{M})=0.000253$ 4 $\alpha(\text{N})=6.41\times 10^{-5}$ 9; $\alpha(\text{O})=1.252\times 10^{-5}$ 18; $\alpha(\text{P})=1.205\times 10^{-6}$ 17
1013.8 1	0.55# 12	1013.85	13/2 ⁺	0.0	5/2 ⁻	[M4]	0.1475	%I γ =0.41 10 $\alpha(\text{K})=0.1098$ 16; $\alpha(\text{L})=0.0284$ 4; $\alpha(\text{M})=0.00705$ 10 $\alpha(\text{N})=0.00181$ 3; $\alpha(\text{O})=0.000355$ 5; $\alpha(\text{P})=3.41\times 10^{-5}$ 5

† From Adopted Levels.

‡ From γ -ray intensity balances and the decay scheme, unless otherwise stated.

From branching ratios in adopted gammas.

@ From adopted gammas.

& [Additional information 1](#).^a For absolute intensity per 100 decays, multiply by 0.74 7.

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