

²⁰⁴Pb(n,γ) E=thermal 1967Ju02,1983Hu13

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

1967Ju02: Target: ²⁰⁴Pb, enriched to 74.1%; Detectors:Ge(Li) and NaI; Measured: Eγ, Iγ; Deduced: Capture cross section (σ=661 mb 70).

1983Hu13: Target: natural Pb; Detectors: curved crystal,Ge(Li), Measured: Eγ, Iγ; Deduced: S(n).

²⁰⁵Pb Levels

E(level) [†]	J ^π [‡]	Comments
0	5/2 ⁻	
2.327 7	1/2 ⁻	
262.79 4	3/2 ⁻	
576.24 5	3/2 ⁻	
761.42 7	5/2 ⁻	
803.40 6	(3/2 ⁻)	
998.41 18	(1/2 ⁻)	
1374.16 8	(3/2 ⁻)	
1617.10 20	(1/2 ⁻)	
1812.09 7	(3/2 ⁻)	
1919.42 15	(3/2 ⁻)	
2087.65 14	(3/2 ⁻)	
2117.98 13	(1/2 ⁻)	
2352.21 16	(1/2 ⁻)	
2361.0 5	(3/2 ⁻)	
2485.9 3	(3/2 ⁻)	
2554.89 25		
2565.5 3		
2633 3		
3160 4		
6731.66 11	1/2 ⁺	Additional information 1. E(level): From 2017Wa10 .

[†] From a least-squares fit to Eγ.

[‡] From [1967Ju02](#).

γ(²⁰⁵Pb)

E _γ [†]	I _γ ^{†@}	E _i (level)	J _i ^π	E _f	J _f ^π	Comments
(2.328 [#] 7)		2.327	1/2 ⁻	0	5/2 ⁻	
226.9 2	8.1 20	803.40	(3/2 ⁻)	576.24	3/2 ⁻	
260.50 [#] 5	95 12	262.79	3/2 ⁻	2.327	1/2 ⁻	
262.80 [#] 5	32 5	262.79	3/2 ⁻	0	5/2 ⁻	I _γ : I _γ (260)/I _γ (262) from adopted gammas.
314.0 2	3.8 10	576.24	3/2 ⁻	262.79	3/2 ⁻	
499.4 3	2.6 10	761.42	5/2 ⁻	262.79	3/2 ⁻	
540.6 1	26 4	803.40	(3/2 ⁻)	262.79	3/2 ⁻	
546.4 3	5 2	1919.42	(3/2 ⁻)	1374.16	(3/2 ⁻)	
564.4 ^{&} 3	4.7 20	2485.9	(3/2 ⁻)	1919.42	(3/2 ⁻)	
573.85 [#] 5	74 12	576.24	3/2 ⁻	2.327	1/2 ⁻	
576.30 [#] 10	24 4	576.24	3/2 ⁻	0	5/2 ⁻	I _γ : I _γ (573)/I _γ (576) from adopted gammas.
734.8 2	10 2	2352.21	(1/2 ⁻)	1617.10	(1/2 ⁻)	
743.9 3	4.4 10	2554.89		1812.09	(3/2 ⁻)	

Continued on next page (footnotes at end of table)

$^{204}\text{Pb}(n,\gamma) E=\text{thermal}$ **1967Ju02,1983Hu13** (continued) $\gamma(^{205}\text{Pb})$ (continued)

E_γ^\dagger	$I_\gamma^{\dagger@}$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
759.10 [#]	10	6.6 12	761.42	5/2 ⁻	2.327 1/2 ⁻	
761.35 [#]	10	4.5 10	761.42	5/2 ⁻	0 5/2 ⁻	I_γ : $I_\gamma(759)/I_\gamma(761)$ from adopted gammas.
803.34 [‡]	8	6.2 10	803.40	(3/2 ⁻)	0 5/2 ⁻	
996.4 2	23 5	998.41	(1/2 ⁻)	2.327 1/2 ⁻		
1041.8 ^{&}	4	5.6 30	1617.10	(1/2 ⁻)	576.24 3/2 ⁻	
1050.9 [‡]	4	21 8	1812.09	(3/2 ⁻)	761.42 5/2 ⁻	I_γ : From 1983Hu13.
1120.3 3	19 3	2117.98	(1/2 ⁻)	998.41 (1/2 ⁻)		
1371.87 [‡]	8	68 10	1374.16	(3/2 ⁻)	2.327 1/2 ⁻	
1512.0 4	7 2	2087.65	(3/2 ⁻)	576.24 3/2 ⁻		
1543.9 15	85 10	2117.98	(1/2 ⁻)	576.24 3/2 ⁻		
1655.8 [‡]	5	16 4	1919.42	(3/2 ⁻)	262.79 3/2 ⁻	
1812.03 [‡]	8	100 15	1812.09	(3/2 ⁻)	0 5/2 ⁻	
1909.3 [‡]	5	15 3	2485.9	(3/2 ⁻)	576.24 3/2 ⁻	
2117.0 3	16 3	2117.98	(1/2 ⁻)	0 5/2 ⁻		
3572 4	4.8 20	6731.66	1/2 ⁺	3160		
4099 3	5.1 10	6731.66	1/2 ⁺	2633		
4166.1 3	9.1 10	6731.66	1/2 ⁺	2565.5		
4178.7 4	3.2 10	6731.66	1/2 ⁺	2554.89		
4245.6 3	20 2	6731.66	1/2 ⁺	2485.9 (3/2 ⁻)		
4370.6 5	7.4 20	6731.66	1/2 ⁺	2361.0 (3/2 ⁻)		
4379.17 [‡]	17	21 2	6731.66	1/2 ⁺	2352.21 (1/2 ⁻)	
4613.58 [‡]	16	110 10	6731.66	1/2 ⁺	2117.98 (1/2 ⁻)	
4644.04 [‡]	15	38 4	6731.66	1/2 ⁺	2087.65 (3/2 ⁻)	
4812.48 [‡]	18	20 2	6731.66	1/2 ⁺	1919.42 (3/2 ⁻)	
4919.27 [‡]	11	94 10	6731.66	1/2 ⁺	1812.09 (3/2 ⁻)	
5115.2 3	9.5 20	6731.66	1/2 ⁺	1617.10 (1/2 ⁻)		
5356.5 [‡]	4	68 7	6731.66	1/2 ⁺	1374.16 (3/2 ⁻)	
5927.94 [‡]	12	32 4	6731.66	1/2 ⁺	803.40 (3/2 ⁻)	
6468.86 [‡]	14	107 10	6731.66	1/2 ⁺	262.79 3/2 ⁻	
6729.36 [‡]	12	485 40	6731.66	1/2 ⁺	2.327 1/2 ⁻	

[†] From 1967Ju02, unless otherwise specified.

[‡] From 1983Hu13.

[#] From adopted gammas.

[@] For intensity per 100 neutron captures, multiply by 0.10 I .

[&] Placement of transition in the level scheme is uncertain.

$^{204}\text{Pb}(n,\gamma)$ E=thermal 1967Ju02,1983Hu13

Legend

Level Scheme
Intensities: Relative I_γ

- ▶ $I_\gamma < 2\% \times I_\gamma^{\max}$
- ▶ $I_\gamma < 10\% \times I_\gamma^{\max}$
- ▶ $I_\gamma > 10\% \times I_\gamma^{\max}$
- - -▶ γ Decay (Uncertain)

