^{207}Pb(n,γ)

		History		
Type	Author	Citation		Literature Cutoff Date
Full Evaluation	M. J. Martin	NDS 108,1583 (2007)		1-Jun-2007

1983Ma55 E=thermal.
1998Be19 E=cold.
Others: 1971MoYS, 1970Vo10, 1972Ma03.

^{208}Pb Levels

E(level)[†]	J$^{\pi}$[‡]	Comments
0	0^+	
2614.54 *3*	3^-	
3997[#] *4*	4^-	
4052.0 *2*	3^-	
4085.45 *8*	2^+	
4229.6 *1*	2^-	
4254.7 *1*	3^-	
4704[#] *4*		E(level): probably corresponds to the adopted level At 4712 with J$^{\pi}$=4^- which decays via a dominant 2097 transition.
4882.1?[#] *12*	0^+	J$^{\pi}$: E0 to 0^+. tentatively identified by the authors As the two-neutron pairing vibration reported by 1966Bj03 At 4870 In (t,p). This May correspond to the 0^+ state At 4868 *2* established In (d,pγ).
4905.0?[#] *8*	0^+	J$^{\pi}$: E0 to 0^+.
4937.1 *1*	3^-	
5384.7 *1*	3^-	
5844.3 *2*		
6343[#] *3*		
7367.82 *5*	$0^-,1^-$	J$^{\pi}$: for s-wave capture.

[†] From a least-squares fit to the Eγ data.
[‡] From Adopted Levels, except for the excited 0^+ levels for which the assignments are from this reaction based on observation of E0 transitions to the g.s..
[#] From 1983Ma55. Not reported by 1998Be19.

γ(^{208}Pb)

E$_\gamma$[†]	I$_\gamma$[#]	E$_i$(level)	J$_i^{\pi}$	E$_f$	J$_f^{\pi}$	Comments
1025[‡] *4*	0.078	7367.82	$0^-,1^-$	6343		I$_\gamma$: from Iγ/Iγ(7368γ)=0.00011 (1983Ma55).
1155.1 *2*	0.040 *6*	5384.7	3^-	4229.6	2^-	
1332.6 *3*	0.020 *10*	5384.7	3^-	4052.0	3^-	
1383[‡] *4*	0.12	3997	4^-	2614.54	3^-	I$_\gamma$: from Iγ/Iγ(7368γ)=0.00017 (1983Ma55).
1437.3 *2*	0.030 *10*	4052.0	3^-	2614.54	3^-	
1470[‡]	<0.02	4085.45	2^+	2614.54	3^-	I$_\gamma$: from Iγ/Iγ(4085γ)<0.04 (1983Ma55). This ratio is 0.0046 *15* In (n,n′γ).
1523.3 *2*	0.040 *10*	7367.82	$0^-,1^-$	5844.3		
1615.2 *2*	0.080 *10*	4229.6	2^-	2614.54	3^-	
1640.2 *1*	0.130 *10*	4254.7	3^-	2614.54	3^-	
1983.1 *2*	0.140 *10*	7367.82	$0^-,1^-$	5384.7	3^-	
2090[‡] *4*		4704		2614.54	3^-	
2322.6 *1*	0.110 *10*	4937.1	3^-	2614.54	3^-	
2430.7 *1*	0.110 *10*	7367.82	$0^-,1^-$	4937.1	3^-	

^{207}Pb(n,γ) (continued)

$\gamma(^{208}$Pb) (continued)

E_γ[†]	I_γ[#]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[@]	Comments
2614.53 3	1.460 20	2614.54	3$^-$	0	0$^+$		
2770.9 3	0.060 10	5384.7	3$^-$	2614.54	3$^-$		
3113.2 1	0.130 20	7367.82	0$^-$,1$^-$	4254.7	3$^-$		
3138.5 2	0.050 10	7367.82	0$^-$,1$^-$	4229.6	2$^-$		
3282.41 8	0.480 20	7367.82	0$^-$,1$^-$	4085.45	2$^+$		
3729[‡] 4	≈0.08	6343		2614.54	3$^-$		E_γ: masked by double-escape peak of the 4753γ. I_γ: from $I\gamma/I\gamma(7368\gamma)$≈0.00011 (1983Ma55).
4085.50 9	0.490 20	4085.45	2$^+$	0	0$^+$		
4753.16 6	0.960 20	7367.82	0$^-$,1$^-$	2614.54	3$^-$		
4882.0[‡&] 12		4882.1?	0$^+$	0	0$^+$	E0	
4904.9[‡&] 8		4905.0?	0$^+$	0	0$^+$	E0	
4935[‡]	<0.192	4937.1	3$^-$	0	0$^+$		I_γ: from $I\gamma/I\gamma(2322\gamma)$<1.6 (1983Ma55). In (p,p′γ), this ratio is 0.07 1.
5383.6 6	0.030 10	5384.7	3$^-$	0	0$^+$		
5843.5 4	0.050 15	5844.3		0	0$^+$		
7367.96 9	708 12	7367.82	0$^-$,1$^-$	0	0$^+$		

[†] From 1998Be19, except where noted otherwise.

[‡] From 1983Ma55. Not reported by 1998Be19.

[#] From 1998Be19 In units of mb normalized so that the intensity sum for the primary gammas equals 0.70 1 barns, the ^{207}Pb thermal capture cross-section.

[@] The E0 assignments are from 1983Ma55 based on the observation of a ce line with No corresponding photon line.

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

From ENSDF

$^{208}_{82}Pb_{126}$-3

$\frac{^{207}Pb(n,\gamma)}{}$

Level Scheme

Intensities: Relative I_γ

Legend

$I_\gamma <$ 2%×I_γ^{max}

$I_\gamma <$ 10%×I_γ^{max}

$I_\gamma >$ 10%×I_γ^{max}

γ Decay (Uncertain)

7367.96 708

4753.16 0.960

3282.41 0.480

3138.5 0.050

3113.2 0.130

2430.7 0.110

1983.1 0.140

1523.3 0.040

1025 0.078

3729 ≈0.08

5843.5 0.050

5383.6 0.030

2770.9 0.060

1332.6 0.020

1155.1 0.040

4935 <0.192

2322.6 0.110

4904.9 E0

4882.0 E0

2090

1640.2 0.130

1615.2 0.080

4085.50 0.490

1470 <0.02

1437.3 0.030

1383 0.12

2614.53 1.460

$0^-,1^-$

3^-

3^-

3^-

0^+

0^+

3^-

2^-

2^+

3^-

3^-

4^-

3^-

0^+

7367.82

6343

5844.3

5384.7

4937.1

4905.0

4882.1

4704

4254.7

4229.6

4085.45

4052.0

3997

2614.54

0