$^{208}\text{Pb}(^{36}\text{S},\text{X}\gamma)$　**2010Od01**

	Type	Author	History Citation	Literature Cutoff Date
	Full Evaluation	Jun Chen	NDS 152, 1 (2018)	30-Sep-2017

2010Od01: E=215 MeV ^{36}S beam was produced from the XTU-Tandem and ALPI accelerators at INFN Legnaro laboratory. Target was 300 μg/cm^2 99.7% enriched ^{208}Pb on a 20 μg/cm^2 carbon backing. Projectile-like fragments were separated and identified using the PRISMA magnetic spectrometer and γ rays were detected with the CLARA array of 25 escape-suppressed Ge clover detectors. Measured Eγ, Iγ, $\gamma\gamma$-coin. Deduced levels, J, π, band structures, configurations. Systematics of neighboring isotopes. Comparisons with shell-model calculations.

^{38}Cl Levels

E(level)[†]	J$^{\pi}$[#]	T$_{1/2}$	Comments
0[‡]	2$^-$		
671.365[‡] 8	5$^-$	715 ms 3	%IT=100 Additional information 1. E(level),T$_{1/2}$: from Adopted Levels.
754.7[‡] 3	3$^-$		
1309.3[‡] 3	4$^-$		
1617.0 5	3$^-$		
1784.6 6	2$^-$,3$^-$,4$^-$		
3349.3 3	(7$^+$)		Possible configuration=$\pi 1f_{7/2}\otimes\nu 1f_{7/2}$ (2010Od01).
3639.6 3	(5,6)		
3809.3 4	(4,5,6)		Possible configuration=$\pi[(1d_{5/2}^6(2s_{1/2}^{-1})(1d_{3/2}^2)]\otimes\nu 1f_{7/2}^1$, if J^{π}=6$^-$ for 3809 level (2010Od01).
4827.5? 7	$\geq$5		If J^{π}=5$^-$, possible configuration=$\pi[(2s_{1/2}^1)(1d_{3/2}^2)]\otimes\nu 1f_{7/2}^1$ with significant admixtures of $\pi 1d_{3/2}^3\otimes\nu 1f_{7/2}$ and $\pi[(1d_{5/2\ 1})(2s_{1/2}^1)(1d_{3/2}^3)]\otimes\nu 1f_{7/2}$ (2010Od01).

[†] From a least-squares fit to γ-ray energies, unless otherwise noted.

[‡] Quadruplet of states formed by $\pi 1d_{3/2}^1\otimes\nu 1f_{7/2}^1$ with large admixtures of $\pi 2s_{1/2}\otimes\nu 1f_{7/2}$ and $\pi 1d_{3/2}\otimes\nu 2p_{3/2}$ configurations (2010Od01).

[#] Proposed by 2010Od01 based on shell-model calculations for level above 1785 and from Adopted Levels for other levels.

$\gamma(^{38}\text{Cl})$

E$_{\gamma}$[†]	I$_{\gamma}$[†]	E$_i$(level)	J$_i^{\pi}$	E$_f$	J$_f^{\pi}$	Mult.	Comments
169.6 2	24 5	3809.3	(4,5,6)	3639.6	(5,6)		
290.2 2	30 10	3639.6	(5,6)	3349.3	(7$^+$)		
307.6 5	18 6	1617.0	3$^-$	1309.3	4$^-$		
554.3 6	18 7	1309.3	4$^-$	754.7	3$^-$		
637.7 5	65 13	1309.3	4$^-$	671.365	5$^-$		
671.36		671.365	5$^-$	0	2$^-$	M3	E$_{\gamma}$,Mult.: from Adopted Gammas. This γ not seen in 2010Od01 since lifetime of the 671 state is longer than the flight time of ^{38}Cl ions through the CLARA reaction chamber.
754.6 3	100 14	754.7	3$^-$	0	2$^-$		
862.4 7	11 3	1617.0	3$^-$	754.7	3$^-$		
1029.9 5	35 6	1784.6	2$^-$,3$^-$,4$^-$	754.7	3$^-$		
1187.9[‡] 6	19 5	4827.5?	$\geq$5	3639.6	(5,6)		
2039.8 3	15 5	3349.3	(7$^+$)	1309.3	4$^-$	[E3]	
2677.7 7	48 9	3349.3	(7$^+$)	671.365	5$^-$	[M2+E3]	
2968.1 5	37 8	3639.6	(5,6)	671.365	5$^-$		
3138.4 6	34 8	3809.3	(4,5,6)	671.365	5$^-$		

^{208}Pb(^{36}S,Xγ)   **2010Od01 (continued)**

γ(^{38}Cl) (continued)

† From 2010Od01, unless otherwise noted.
‡ Placement of transition in the level scheme is uncertain.

^{208}Pb(^{36}S,Xγ)   **2010Od01**   Legend

<u>Level Scheme</u>

Intensities: Relative I$_\gamma$

I$_\gamma <$ 2%×I$_\gamma^{max}$
I$_\gamma <$ 10%×I$_\gamma^{max}$
I$_\gamma >$ 10%×I$_\gamma^{max}$
γ Decay (Uncertain)

$^{38}_{17}Cl_{21}$