

$^{208}\text{Pb}(^{40}\text{Ar},\text{X}\gamma)$ 2013Sz02

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

2013Sz02: E=255 MeV ^{40}Ar beam was produced from the superconducting ALPI-Linac accelerator of the Laboratory Nazionali di Legnaro. Target was $300 \mu\text{g}/\text{cm}^2$ ^{208}Pb . Projectile-like fragments were identified by the magnetic spectrometer Prisma based on time-of-flight and energy loss; γ rays were detected with the Clara array of 24 HPGe clover-type detectors. Measured E_γ , I_γ , $\gamma\gamma$ -coin, (fragment) γ -coin. Deduced levels, J, π . Comparison with large-scale shell-model calculations.

 ^{38}Cl Levels

E(level) [†]	J π [‡]
0.0	2 ⁻
670.6 9	5 ⁻
755.0 3	3 ⁻
1308.6 6	4 ⁻
1617.0 5	3 ⁻
1691.8 7	(1,2) ⁻
1746 3	0 ⁻ ,1 ⁻
1784.6 10	2 ⁻ ,3 ⁻ ,4 ⁻
1942 3	1 ⁺

[†] From least-squares fit to γ -ray energies.

[‡] From Adopted Levels.

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

E_γ	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	E_γ	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π
^x 169 1	15.0 30					^x 1063 1	4.0 20				
^x 290.8 4	8.0 20					1617 [‡]		1617.0	3 ⁻	0.0	2 ⁻
308.4 6	5.0 10	1617.0	3 ⁻	1308.6	4 ⁻	1691.8 7	6.0 20	1691.8	(1,2) ⁻	0.0	2 ⁻
553.6 6	5.4 8	1308.6	4 ⁻	755.0	3 ⁻	1746 3	5.0 15	1746	0 ⁻ ,1 ⁻	0.0	2 ⁻
638.0 7	23 4	1308.6	4 ⁻	670.6	5 ⁻	1942 3	10.0 30	1942	1 ⁺	0.0	2 ⁻
671 [‡]		670.6	5 ⁻	0.0	2 ⁻	^x 2631 2	4.0 10				
755.0 3	30 4	755.0	3 ⁻	0.0	2 ⁻	^x 2677 3	4.0 15				
862.0 3	7.0 20	1617.0	3 ⁻	755.0	3 ⁻	^x 2758 3	4.0 15				
1029.6 9	11.0 20	1784.6	2 ⁻ ,3 ⁻ ,4 ⁻	755.0	3 ⁻	^x 2971 5	2.0 15				

[†] Effective number of counts after taking into account detector efficiency, obtained from I_γ values in 2013Sz02 divided by 10.

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

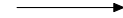



^x γ ray not placed in level scheme.

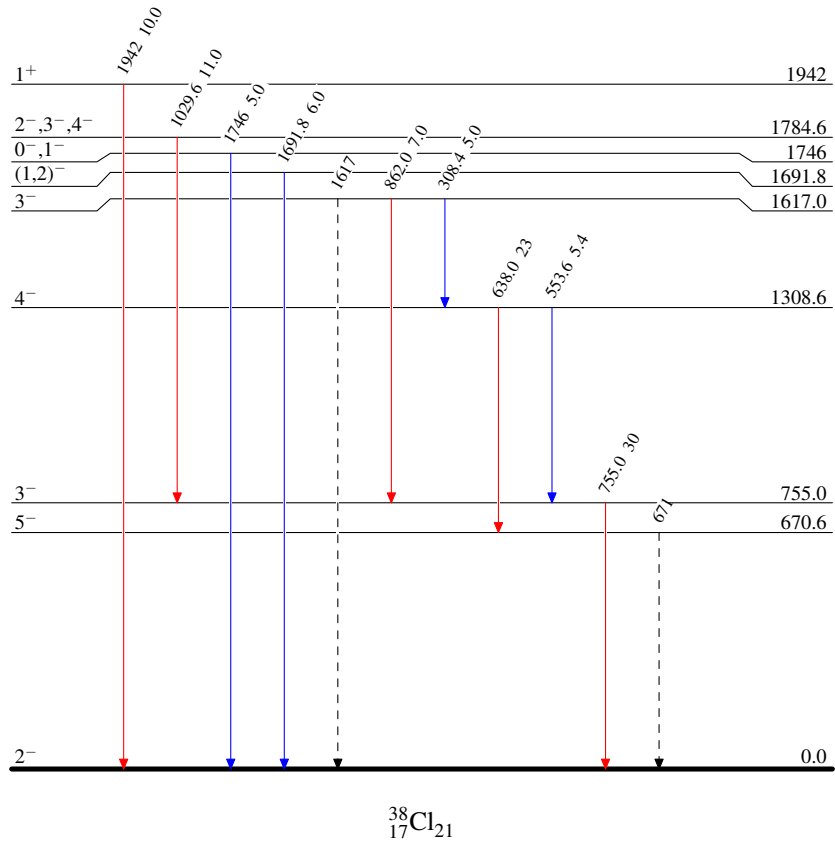
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Legend

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)

 $^{38}_{17}\text{Cl}_{21}$