

$^6\text{Li}(^{22}\text{Ne},t),(^{22}\text{Ne},t\gamma)$ **2021Ot02**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia, Anagha Chakraborty		NDS 205,1 (2025)	31-May-2025

Adapted/Edited the XUNDL dataset compiled by E.A. McCutchan (NNDC,BNL) April 28, 2022.

^6LiF target (thickness $30 \mu\text{g}/\text{cm}^2$), ^{22}Ne beam, $E=7 \text{ MeV}/\text{nucleon}$. Tritons were detected with the TIARA Si detector array consisting of 6 wedge-shaped double Si detectors and 8 resistive charge division Si detectors; Mg recoils were detected with the MDM spectrometer consisting of 3 ionization detector zones along with 4-wire proportional counter zones and gamma rays were detected using four closely packed HPGe detectors.

 ^{25}Mg Levels

E(level) [†]	J^π [‡]	C ² S [#]	Comments
0	5/2 ⁺	0.02 1	
585	1/2 ⁺	0.04 2	
975	3/2 ⁺	0.11 2	
1611	7/2 ⁺	0.08 3	
1964	5/2 ⁺	0.09 2	
2563	1/2 ⁺	0.16 3	
2769	7/2 ⁺ , 3/2 ⁺	0.20 4	E(level): based on the assigned doublet to 2737, 2801 states (2021Ot02). 2711 is a misprint in Fig. 5 (2021Ot02). C ² S: 0.20 4, 0.12 2 for doublet.
3410	9/2 ⁺ , 3/2 ⁻	0.41 8	E(level): doublet assigned to 3405, 3413 states (2021Ot02). C ² S: 0.41 8, 0.34 6 for doublet.
3970	5/2 ⁺ , 7/2 ⁻ , 9/2 ⁺	0.18 4	E(level): triplet assigned to 3907, 3970, 4059 states (2021Ot02). Not cross referenced (XREF) in the Adopted Levels. C ² S: 0.18 4, 0.12 3, 0.30 6 for triplet.
4330	1/2 ⁻ , 3/2 ⁺	0.14 3	E(level): doublet assigned to 4277, 4359 states (2021Ot02). C ² S: 0.14 3, 0.08 2 for doublet.
4720	9/2 ⁺ , (3/2 ⁺ , 5/2 ⁺)	0.03 1	E(level): doublet assigned to 4711, 4722 states by 2021Ot02. C ² S: 0.03 1, 0.02 1 for doublet.
7280	1/2 ⁺ , 7/2 ⁻ , 3/2 ⁺	0.66 17	E(level): triplet assigned to 7265, 7286, 7375 states by 2021Ot02. Not cross referenced (XREF) in the Adopted Levels. C ² S: 0.66 17, 0.03 1, 0.09 2 for triplet.

[†] From Figure 5 in 2021Ot02.

[‡] From Adopted Levels, except a few cases (doublet, triplet).

[#] Obtained by assuming one single state dominates in a given multiplet peak.

 $\gamma(^{25}\text{Mg})$

E_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π
390	975	3/2 ⁺	585	1/2 ⁺
585	585	1/2 ⁺	0	5/2 ⁺
975	975	3/2 ⁺	0	5/2 ⁺
1379	1964	5/2 ⁺	585	1/2 ⁺
1611	1611	7/2 ⁺	0	5/2 ⁺

[†] From level energy difference. Gamma transition indicated in Figure 8.

$^6\text{Li}(^{22}\text{Ne,t}),(^{22}\text{Ne,t}\gamma)$ 2021Ot02

Level Scheme

