Reaction : ^{24}Mg(p,γ)^{25}Al

Resonance data are available for 13 resonances in the $214.0 \leq E_r \leq 5698.7$ keV range [LI56, VA69, TR75b, RO77, KE80]. The strengths of the $E_r = 790.4$ and 1424.4 keV resonances in LI56 are disregarded because of the large discrepancies with the other data sets, probably due to uncertainties in the used stopping power. The level at $E_x = 452$ keV in ^{25}Al is not observed in MO68 data, which are therefore omitted. The relative resonance strengths in VA69 are renormalized, taking as a standard the strength of the 790.4 keV resonance given by TR75b. The non-resonant contribution from the direct capture process is calculated with the S-factor given by TR75a. Above $T_9 = 7$, the rates are calculated using HF rates as explained in Sect. 2.5. The present rates are in agreement with those of CA88, except at the highest temperatures, where the HF rates are larger.

E_r (keV)	J^π	$\omega\gamma$ (meV)						
		LI56	VA69	TR75b	RO77	KE80	adopt	
214.0 ± 0.8	$1/2^+$	13.9 ± 6.9		9.5 ± 2.0			10.0 ± 2.0	I
402.2 ± 0.6	$3/2^+$	28.4 ± 5.6		33 ± 5			31 ± 4	M
790.4 ± 0.6	$3/2^-$	220 ± 44	490 ± 100	490 ± 70		580 ± 60	532 ± 41	M
1153.0 ± 0.5	$(5/2^+, 9/2^+)$	27.5 ± 5.5	38 ± 8				31 ± 5	M
1177.7 ± 0.5					68 ± 14		68 ± 14	M
1424.4 ± 0.5	$7/2^+$	52 ± 10	155 ± 31	140 ± 20			144 ± 17	M
1551.7 ± 1.6	$1/2^-$	520 ± 100	283 ± 57	700 ± 100			410 ± 120	M
1587.5 ± 0.8	$5/2^+$	165 ± 33	188 ± 36	190 ± 30			181 ± 19	M
1754.7 ± 3.0	$(5/2^+, 9/2^+)$				19 ± 4		19 ± 4	M
1924.7 ± 5.0	$3/2^+$	700 ± 140		520 ± 80			564 ± 78	M
2311.7 ± 4.0	$5/2^+$	180 ± 36					180 ± 36	M
			MO68					
5629.7 ± 2.0	$5/2^+$		1200 ± 500		255 ± 60		255 ± 60	M
5698.7 ± 2.0	$3/2^+(5/2^+)$		1500 ± 800		395 ± 90		395 ± 90	M

T_9	low	adopt	high	exp	ratio	T_9	low	adopt	high	exp	ratio	T_9	low	adopt	high	exp	ratio
0.025	1.00	1.25	1.49	-23	1.0	0.16	3.49	4.53	5.73	-3	1.1	1.25	2.36	2.81	3.27	2	1.0
0.03	7.47	9.34	11.2	-21	1.0	0.18	1.65	2.13	2.68	-2	1.1	1.5	3.33	3.89	4.45	2	1.0
0.04	4.01	5.01	6.01	-19	1.0	0.2	5.62	7.23	9.03	-2	1.1	1.75	4.45	5.12	5.79	2	1.0
0.05	6.18	8.21	10.7	-17	1.0	0.25	4.85	6.20	7.68	-1	1.1	2	5.70	6.49	7.26	2	1.0
0.06	0.84	1.17	1.62	-13	1.1	0.3	1.94	2.47	3.04	0	1.1	2.5	8.34	9.37	10.4	3	1.0
0.07	2.47	3.39	4.60	-11	1.1	0.35	5.07	6.42	7.87	0	1.1	3	1.09	1.22	1.35	3	1.0
0.08	1.72	2.33	3.12	-9	1.1	0.4	1.02	1.29	1.57	1	1.1	3.5	1.33	1.49	1.64	3	1.0
0.09	4.58	6.15	8.13	-8	1.1	0.45	1.72	2.17	2.64	1	1.1	4	1.55	1.73	1.91	3	1.0
0.1	6.22	8.29	10.8	-6	1.1	0.5	2.60	3.27	3.96	1	1.1	5	1.90	2.14	2.37	3	1.0
0.11	5.19	6.87	8.91	-6	1.1	0.6	4.75	5.92	7.15	1	1.1	6	2.16	2.44	2.71	3	1.0
0.12	3.00	3.96	5.10	-5	1.1	0.7	7.22	8.95	10.7	2	1.1	7	2.32	2.63	2.93	3	1.5
0.13	1.31	1.72	2.21	-4	1.1	0.8	0.99	1.22	1.45	2	1.1	8	2.70	3.44	4.15	3	2.1
0.14	4.62	6.03	7.69	-4	1.1	0.9	1.27	1.55	1.84	2	1.0	9	3.09	4.35	5.57	3	2.9
0.15	1.36	1.77	2.25	-3	1.1	1	1.56	1.89	2.23	2	1.0	10	3.48	5.39	7.23	3	4.0