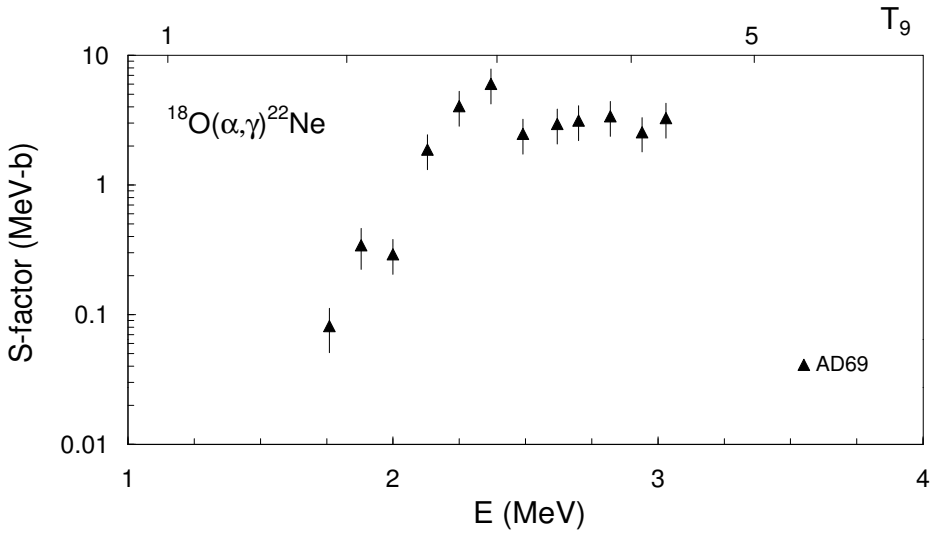
Reaction : $^{18}O(\alpha,\gamma)^{22}Ne$

The experimental data from AD69, GR68, CH70, TR78, VO90, and GI94 up to $E_r = 4025$ keV are adopted. Resonance data for $E_r = 2814 - 4025$ keV come from CH70. These data complement each other and allow the calculation of the rates at $T_9 \leq 6$. Up to $T_9 = 1$, the reaction rates are determined by the resonant contributions, the direct capture and resonant tail contributions being predicted to be negligible [TR78]. Above $T_9 = 6$, the rates are calculated using HF rates as explained in Sect. 2.5. The adopted rates agree with those obtained by GI94. The difference between the adopted rates and the CA88 ones are due to the contribution of the new low energy resonances from GI94. In CA88, a low energy resonance has been considered, but with a strength and energy that differ from those of GI94. Our thermalization corrections cannot account for these differences ($r_{tt} = 0.94 - 0.88$ for $T_9 = 7$ to 10; CA88 adopted $r_{tt} = 1$ at all T_9).

E_r (keV)	J^π	$\omega\gamma$ (eV)				
		CH70	TR78	others	adopt	
178.3 ± 3.3	2^+			$(7.5 \pm 3.0) \times 10^{-18}$ [GI94]	$(7.5 \pm 3.0) \times 10^{-18}$	I
384.5 ± 3.3	0^+			$(0.6^{+1.1}_{-0.3}) \times 10^{-6}$ [GI94]	$(0.6^{+1.1}_{-0.3}) \times 10^{-6}$	I
541.6 ± 8.2	1^-		$(2.9 \pm 0.5) \times 10^{-4}$	$(2.12 \pm 0.42) \times 10^{-4}$ [GI94] $(2.30 \pm 0.25) \times 10^{-4}$ [VO90]	$(2.39 \pm 0.23) \times 10^{-4}$	I
613.5 ± 8.2			$(4.7 \pm 0.8) \times 10^{-4}$	$(5.6 \pm 0.6) \times 10^{-4}$ [VO90]	$(5.3 \pm 0.5) \times 10^{-4}$	M
628.0 ± 8.2			$\geq 6.7 \times 10^{-4}$	$(1.20 \pm 0.12) \times 10^{-3}$ [VO90]	$(1.20 \pm 0.12) \times 10^{-3}$	I
947.3 ± 4.2			$(4.1 \pm 1.0) \times 10^{-4}$		$(4.1 \pm 1.0) \times 10^{-4}$	M
1026.0 ± 3.3			$(1.3 \pm 0.2) \times 10^{-3}$		$(1.3 \pm 0.2) \times 10^{-3}$	M
1255.0 ± 4.1			$(6.5 \pm 0.8) \times 10^{-2}$		$(6.5 \pm 0.8) \times 10^{-2}$	M
1800.0 ± 4.1	1^-	2.7 ± 0.4	0.48 ± 0.07		0.48 ± 0.07	M
2015.0 ± 5.0	2^+	31 ± 10			31 ± 10	M
2084.0 ± 5.0	1^-	0.87 ± 0.31			0.87 ± 0.31	M
		GR68				
2217.0 ± 5.0	1^-	2.13 ± 0.6			2.13 ± 0.6	M
2610.0 ± 5.0	1^-	14.1 ± 4.0			14.1 ± 4.0	M
Res. 2814 – 4025 keV		see comments				



T_9	low	adopt	high	exp	ratio	T_9	low	adopt	high	exp	ratio	T_9	low	adopt	high	exp	ratio
0.07	0.92	1.53	2.14	-24	0.1	0.3	5.30	7.33	13.7	-8	1.5	2	3.43	4.71	6.01	0	1.6
0.08	3.04	5.08	7.17	-23	0.1	0.35	7.58	9.38	14.1	-6	1.1	2.5	2.27	3.27	4.25	1	1.8
0.09	5.36	9.20	15.3	-22	0.1	0.4	6.10	7.16	9.38	-6	1.1	3	0.87	1.27	1.65	2	1.9
0.1	1.45	2.73	6.73	-20	0.4	0.45	3.17	3.63	4.43	-5	1.0	3.5	2.30	3.34	4.38	2	2.0
0.11	0.55	1.09	2.98	-18	3.0	0.5	1.19	1.35	1.59	-4	1.1	4	4.74	6.88	9.02	2	1.9
0.12	1.38	2.72	7.56	-17	19	0.6	8.68	9.74	11.1	-4	1.1	5	1.28	1.85	2.42	3	1.7
0.13	2.14	4.20	11.7	-16	86	0.7	3.53	3.94	4.42	-3	1.1	6	2.39	3.47	4.54	3	1.5
0.14	2.22	4.36	12.1	-15	225	0.8	1.00	1.11	1.24	-2	1.2	7	3.68	6.05	8.41	3	1.5
0.15	1.68	3.29	9.17	-14	219	0.9	2.21	2.46	2.74	-2	1.2	8	4.75	9.22	13.7	3	1.4
0.16	0.98	1.92	5.35	-13	125	1	4.15	4.63	5.14	-2	1.2	9	0.52	1.27	2.02	4	1.3
0.18	1.86	3.62	9.98	-12	38	1.25	1.34	1.51	1.69	-1	1.3	10	0.47	1.64	2.79	4	1.3
0.2	1.99	3.79	10.3	-11	15	1.5	3.64	4.34	5.04	-1	1.3						
0.25	1.78	2.95	7.04	-9	3.0	1.75	1.10	1.42	1.76	0	1.4						