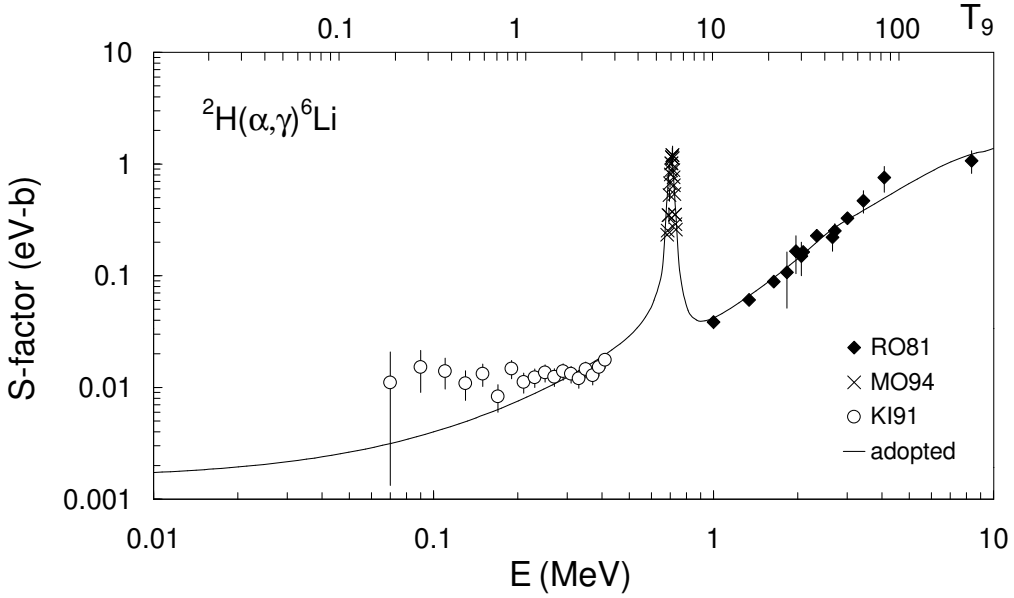
Reaction : $^2\mathrm{H}(\alpha,\gamma)^6\mathrm{Li}$

Direct measurements of the non resonant cross section have been performed only at energies $E = 1$ to 8.4 MeV [RO81], while MO94a is limited to the 3^+ resonance at $E_r = 0.711$ MeV. An upper limit for the cross section at $E = 53$ keV has been established by CE96, but this limit is much higher than any theoretical estimate, and it has been disregarded. At lower energies, the break-up results of KI91 (see, however, Sect. 2.2.2) and theoretical calculations [RO81, LA86a, LA86b, CR89, BU90, CR90, TY91, MO94a, TY94] are available (see NO97 for an extended discussion). The data of KI91 are obtained from the author and, due to a problem in the graphic representation, they differ from those given in their paper. For the 0.711 MeV resonance, the adopted resonance strength is taken here as the weighted average of BA60, EI69 and MO94a [$\omega\gamma = (10.2 \pm 0.6) \times 10^{-4}$ eV], while the total width is taken as the weighted average of MO94a and BA79b: $\Gamma = 22 \pm 2$ keV. At low energies ($E < 0.7$ MeV), we use the more recent calculation of MO94a. The rates are calculated by adding the 0.711 MeV resonant contribution to the non-resonant one. The lower and upper limits are calculated by taking into account the lower and upper limits in the theoretical calculations. At low temperatures ($T_9 < 0.09$), our rates are up to a factor of 2 lower than the CA88 ones, which correspond to those derived by RO81, due to a different low energy extrapolation adopted here.



T_9	low	adopt	high	exp	ratio	T_9	low	adopt	high	exp	ratio	T_9	low	adopt	high	exp	ratio
0.002	0.17	2.13	12.3	-23	0.5	0.05	0.33	2.57	11.6	-7	0.8	0.6	0.53	1.57	2.93	-2	1.0
0.003	0.24	2.87	16.4	-20	0.5	0.06	1.07	7.84	34.3	-7	0.9	0.7	0.96	2.64	4.46	-2	1.0
0.004	0.23	2.68	15.1	-18	0.5	0.07	0.27	1.91	8.12	-6	0.9	0.8	1.63	4.24	6.56	-2	1.0
0.005	0.59	6.71	37.5	-17	0.5	0.08	0.59	4.00	16.5	-6	0.9	0.9	2.64	6.56	9.52	-2	1.0
0.006	0.70	7.80	43.3	-16	0.5	0.09	1.15	7.48	30.0	-6	1.0	1	4.07	9.81	13.6	-2	1.1
0.007	0.50	5.52	30.4	-15	0.5	0.1	0.20	1.28	5.02	-5	1.0	1.25	0.98	2.27	3.01	-1	1.1
0.008	0.26	2.77	15.2	-14	0.5	0.11	0.34	2.06	7.85	-5	1.0	1.5	1.87	4.22	5.58	-1	1.1
0.009	0.10	1.08	5.88	-13	0.6	0.12	0.53	3.14	11.7	-5	1.0	1.75	3.02	6.67	8.85	-1	1.0
0.01	0.33	3.50	18.9	-13	0.6	0.13	0.79	4.57	16.6	-5	1.0	2	4.35	9.40	12.5	-1	1.0
0.011	0.94	9.74	52.3	-13	0.6	0.14	1.14	6.43	22.9	-5	1.0	2.5	0.73	1.51	2.02	0	1.0
0.012	0.24	2.41	12.9	-12	0.6	0.15	1.59	8.76	30.5	-5	1.0	3	1.05	2.06	2.75	0	1.0
0.013	0.54	5.42	28.7	-12	0.6	0.16	0.22	1.17	3.98	-4	1.0	3.5	1.39	2.57	3.41	0	1.0
0.014	0.11	1.12	5.93	-11	0.6	0.18	0.37	1.93	6.34	-4	1.1	4	1.75	3.07	4.03	0	1.0
0.015	0.22	2.18	11.4	-11	0.6	0.2	0.60	3.00	9.47	-4	1.1	5	2.56	4.07	5.23	0	1.1
0.016	0.41	4.00	20.9	-11	0.6	0.25	1.61	7.28	21.1	-4	1.1	6	3.52	5.17	6.49	0	1.1
0.018	0.12	1.17	6.04	-10	0.6	0.3	0.35	1.45	3.90	-3	1.1	7	4.62	6.41	7.89	0	1.2
0.02	0.31	2.94	15.0	-10	0.6	0.35	0.65	2.53	6.34	-3	1.0	8	5.85	7.81	9.47	0	1.3
0.025	0.21	1.87	9.33	-9	0.7	0.4	1.10	4.03	9.48	-3	1.0	9	7.20	9.35	11.2	0	1.5
0.03	0.88	7.65	37.3	-9	0.7	0.45	1.75	6.02	13.3	-3	1.0	10	0.86	1.10	1.31	1	1.6
0.04	0.73	5.96	28.0	-8	0.8	0.5	2.63	8.56	17.9	-3	1.0						