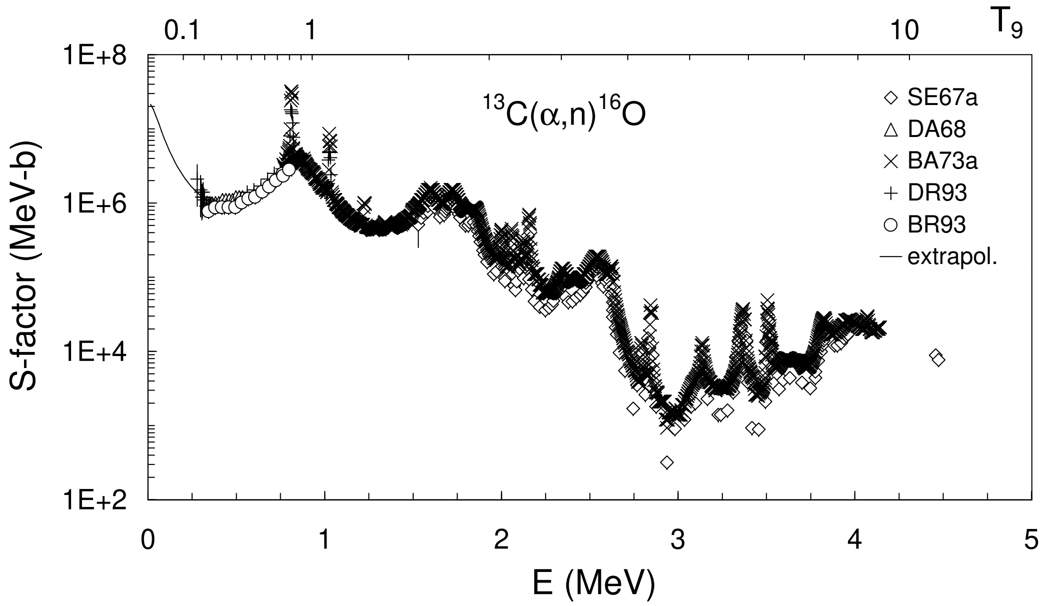
Reaction: $^{13}C(\alpha,n)^{16}O$

The rates are determined using experimental cross sections of SE67a, DA68, BA73a, DR93 and BR93 covering the energy range between $E = 0.28$ and 4.47 MeV. For $E < 0.28$ MeV, the S-factor is extrapolated by fitting the data of DR93 with the tail of a $1/2^+$ subthreshold resonance at $E_x = 6.356$ MeV ($E_r = -3$ keV), using Eq. (31) with $\Gamma = 124 \pm 12\,\mathrm{keV}$ [FO73, JO73] and $S_r = 2.30 \times 10^7$ MeV b. This extrapolation agrees with the R-matrix calculation of HA97. For $T_9 > 4$, HF rates are used following the procedure explained in Sect. 2.5. At low temperatures, the adopted rates are up to a factor of 8 higher than the CA88 ones. This large difference is caused by the inclusion of the subthreshold resonance. For $0.4 \le T_9 \le 2.5$, the adopted rates are up to factor of 2 higher, due to the new data of DR93 and BR93. At high temperatures, the HF rates are larger than the CA88 estimates.



T_9	low	adopt	high	exp	ratio	T_9	low	adopt	high	exp	ratio	T_9	low	adopt	high	exp	ratio
0.04	0.65	5.34	6.45	-24	8.4	0.2	2.64	4.21	5.46	-8	1.3	1.75	1.60	1.99	2.37	4	1.2
0.05	0.49	3.24	3.91	-21	6.5	0.25	1.28	1.70	2.08	-6	1.1	2	3.89	4.84	5.79	4	1.2
0.06	0.77	4.19	5.06	-19	5.2	0.3	2.61	3.14	3.65	-5	1.0	2.5	1.50	1.87	2.24	5	1.1
0.07	0.44	2.00	2.42	-17	4.3	0.35	3.11	3.57	4.03	-4	1.1	3	3.91	4.88	5.85	5	1.0
0.08	1.22	4.80	5.80	-16	3.6	0.4	2.54	2.88	3.22	-3	1.3	3.5	7.85	9.81	11.8	5	1.0
0.09	2.03	6.99	8.45	-15	3.1	0.45	1.55	1.76	1.97	-2	1.4	4	1.33	1.66	2.00	6	0.9
0.1	2.28	6.99	8.49	-14	2.7	0.5	7.35	8.42	9.49	-2	1.6	5	3.02	3.86	4.72	6	1.0
0.11	1.90	5.24	6.41	-13	2.4	0.6	0.91	1.06	1.21	0	1.8	6	5.36	7.02	8.73	6	1.2
0.12	1.23	3.12	3.88	-12	2.2	0.7	6.07	7.18	8.30	0	1.9	7	0.82	1.10	1.40	7	1.3
0.13	0.66	1.55	1.95	-11	2.0	0.8	2.66	3.18	3.70	1	1.9	8	1.14	1.58	2.03	7	1.6
0.14	2.99	6.57	8.40	-11	1.8	0.9	0.86	1.04	1.22	2	1.9	9	1.49	2.12	2.78	7	1.8
0.15	1.18	2.44	3.16	-10	1.7	1	2.27	2.75	3.23	2	1.8	10	1.85	2.72	3.61	7	2.1
0.16	4.15	8.12	10.6	-10	1.6	1.25	1.41	1.73	2.05	3	1.6						
0.18	3.85	6.77	8.88	-9	1.4	1.5	5.46	6.74	8.01	3	1.4						