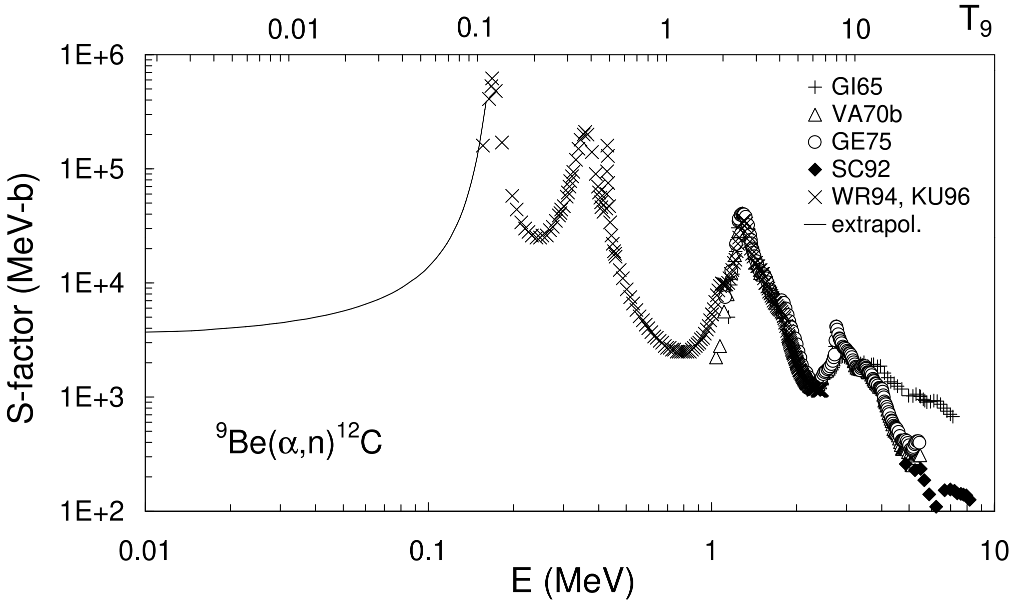
Reaction: ^{9}Be(α,n)^{12}C

The reaction rate is determined using the experimental cross sections of GI65, VA70b, GE75, SC92, WR94 and KU96. In the energy range $E \leq 0.254$ MeV, data of WR94 for the $E_r = 166$ keV resonance are used. Tails from resonances at higher energies are also taken into account. The width of the resonance at $E_r = 106$ keV is adopted from CI80, and the upper limit in its strength is estimated by the Wigner limit. This strength is multiplied by 0.1 in order to obtain the extrapolation to zero energy and the recommended rate. The lower limit of the rates is calculated by neglecting this resonance. For the $0.254 \leq E \leq 2.5$ MeV range, the data of GE75, WR94 and KU96 are used. The data of VA70b are omitted because they deviate from these data sets at low energies ($E < 1.5$ MeV). Even the resonance at $E_r = 1.085$ MeV, which has a clear signature, is not observed in the VA70b data. For $2.5 \leq E \leq 4.86$ MeV, the VA70b and GE75 data are used. These two sets are in agreement within experimental errors. For $4.86 \leq E \leq 10.87$ MeV, the SC92 data are used. The uncertainty on the reaction rate is evaluated from the experimental uncertainties, except for the $E_r = 166$ keV resonance, which is treated as described above. The large difference between our rates and the CA88 ones near $T_9 \approx 0.15$ arises probably from the underestimate by CA88 of the 166 keV resonance contribution.



T_9	low	adopt	high	exp	ratio	T_9	low	adopt	high	exp	ratio	T_9	low	adopt	high	exp	ratio
0.018	2.58	3.98	16.6	-25	1.2	0.15	1.48	1.51	1.74	-4	7.1	1.25	1.55	1.74	1.93	4	1.4
0.02	5.85	9.23	39.7	-24	1.3	0.16	3.23	3.32	3.81	-4	7.1	1.5	5.75	6.47	7.20	4	1.2
0.025	3.12	5.27	24.6	-21	1.5	0.18	1.30	1.35	1.55	-3	5.4	1.75	1.64	1.86	2.07	5	1.1
0.03	3.88	7.04	35.5	-19	1.5	0.2	4.52	4.81	5.48	-3	3.3	2	3.75	4.25	4.74	5	1.0
0.04	4.90	9.74	53.3	-16	0.6	0.25	7.01	7.73	8.72	-2	1.4	2.5	1.22	1.38	1.55	6	0.9
0.05	0.98	1.78	8.93	-13	0.5	0.3	6.10	6.79	7.59	-1	1.0	3	2.69	3.06	3.42	6	0.9
0.06	0.77	1.09	4.04	-11	0.7	0.35	3.15	3.52	3.91	0	0.9	3.5	4.76	5.40	6.04	6	0.9
0.07	2.88	3.43	8.40	-10	1.4	0.4	1.11	1.24	1.38	1	0.9	4	7.35	8.33	9.30	6	0.8
0.08	5.39	5.91	10.6	-9	2.5	0.45	3.00	3.35	3.70	1	0.9	5	1.38	1.56	1.74	7	0.8
0.09	5.72	6.04	8.90	-8	3.5	0.5	6.67	7.43	8.21	1	0.9	6	2.17	2.44	2.71	7	0.9
0.1	3.91	4.06	5.37	-7	4.3	0.6	2.23	2.49	2.74	2	1.0	7	3.06	3.43	3.79	7	0.9
0.11	1.92	1.97	2.46	-6	4.9	0.7	5.40	6.01	6.62	2	1.1	8	4.01	4.48	4.94	7	0.9
0.12	7.31	7.48	8.98	-6	5.5	0.8	1.09	1.21	1.33	3	1.2	9	4.99	5.55	6.11	7	1.0
0.13	2.29	2.34	2.75	-5	6.1	0.9	2.01	2.24	2.46	3	1.4	10	5.95	6.60	7.26	7	1.0
0.14	6.16	6.29	7.30	-5	6.7	1	3.61	4.02	4.44	3	1.5						