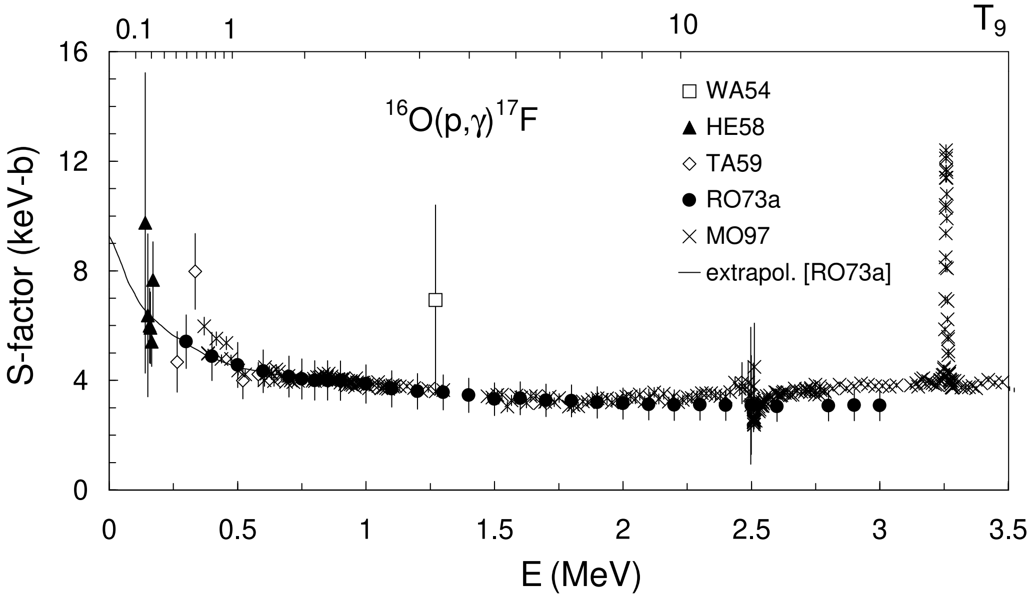
Reaction : $^{16}O(p,\gamma)^{17}F$

The non-resonant data from WA54, HE58, TA59, RO73a and MO97 are adopted. At energies $E \leq 160$ keV, only one set of data [HE58] is available, with large experimental errors. The data from RO73a result from a normalization to one data point of TA59. For the extrapolation to zero energy, the potential model calculation of RO73a confirmed by MO97 is adopted. The recommended S-factor at zero energy is $S_0 = 9.3 \pm 2.8$ keV b. We adopt 30% overall uncertainty for the low energy extrapolation, which includes 10% of systematic error and 20% of error due to model assumptions. Beyond $T_9 = 4$, a reliable calculation of the reaction rates requires experimental data at $E > 3.5$ MeV. Since these data are missing, the S-factor is considered as a constant, equal to the value measured at the highest energy, with 20% uncertainty. In this case, HF rates are not adequate as the level density of ^{17}F is not high enough for a statistical model. The resonances at $E_r = 2503 \pm 7$ keV [RO73a] and $E_r = 3556 \pm 4$ keV [SE63] contribute for less than 1% to the total rates. Good agreement is found between the present rates and those from CA88.



T_9	low	adopt	high	exp	ratio	T_9	low	adopt	high	exp	ratio	T_9	low	adopt	high	exp	ratio
0.01	4.71	6.73	8.75	-25	1.0	0.1	0.88	1.26	1.63	-7	1.0	0.8	1.04	1.38	1.72	0	1.0
0.011	4.97	7.10	9.23	-24	1.0	0.11	2.50	3.57	4.65	-7	1.0	0.9	1.91	2.49	3.07	0	1.0
0.012	4.00	5.71	7.42	-23	1.0	0.12	6.30	9.01	11.7	-7	1.0	1	3.21	4.13	5.05	0	1.0
0.013	2.57	3.68	4.78	-22	1.0	0.13	1.44	2.06	2.67	-6	1.0	1.25	0.90	1.13	1.36	1	1.0
0.014	1.38	1.97	2.56	-21	1.0	0.14	3.02	4.32	5.62	-6	1.0	1.5	1.94	2.42	2.89	1	1.0
0.015	6.35	9.06	11.8	-21	1.0	0.15	5.93	8.48	11.0	-6	1.0	1.75	3.56	4.40	5.25	1	1.1
0.016	2.56	3.65	4.75	-20	1.0	0.16	1.10	1.57	2.04	-5	1.0	2	5.84	7.19	8.54	1	1.1
0.018	3.01	4.30	5.59	-19	1.0	0.18	3.25	4.65	6.04	-5	1.0	2.5	1.26	1.54	1.82	2	1.0
0.02	2.51	3.59	4.66	-18	1.0	0.2	0.83	1.18	1.53	-4	1.0	3	2.23	2.73	3.22	2	1.0
0.025	1.75	2.50	3.25	-16	1.0	0.25	5.29	7.57	9.84	-4	1.0	3.5	3.50	4.30	5.05	2	1.0
0.03	4.42	6.32	8.21	-15	1.0	0.3	2.16	3.09	4.02	-3	1.0	4	5.06	6.24	7.29	2	1.0
0.04	4.82	6.89	8.96	-13	1.0	0.35	6.63	9.44	12.3	-3	1.0	5	0.90	1.12	1.29	3	1.0
0.05	1.34	1.91	2.49	-11	1.0	0.4	1.66	2.36	3.05	-2	1.0	6	1.38	1.75	1.99	3	1.0
0.06	1.68	2.39	3.11	-10	1.0	0.45	3.61	5.09	6.57	-2	1.0	7	1.94	2.49	2.79	3	1.0
0.07	1.25	1.79	2.33	-9	1.0	0.5	7.04	9.84	12.6	-2	1.0	8	2.57	3.34	3.69	3	1.0
0.08	6.56	9.37	12.2	-9	1.0	0.6	2.11	2.90	3.96	-1	1.0	9	3.24	4.27	4.67	3	1.0
0.09	2.65	3.78	4.92	-8	1.0	0.7	5.08	6.83	8.58	-1	1.0	10	3.96	5.27	5.71	3	1.0