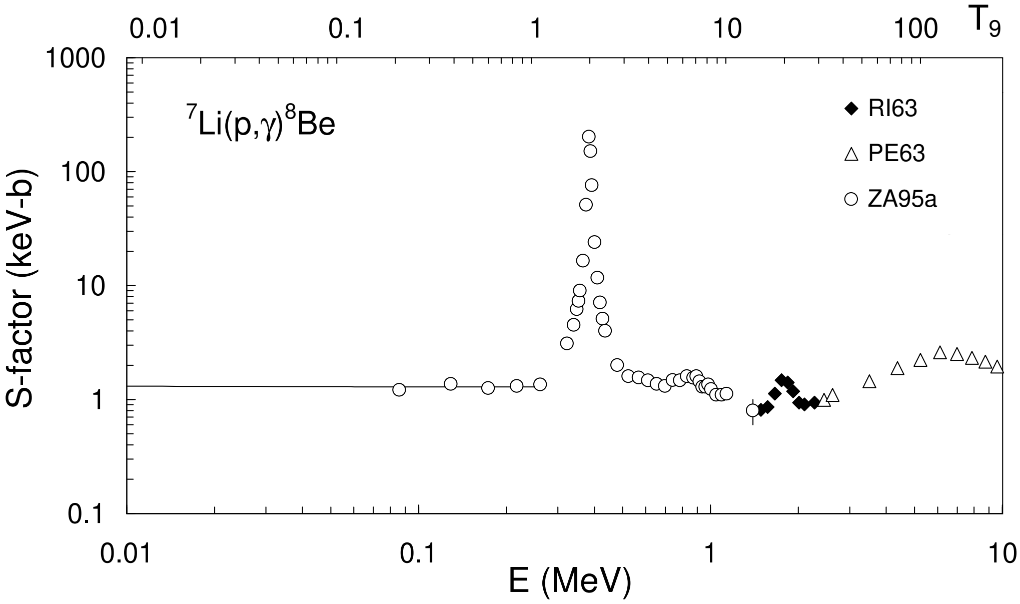
Reaction : ^{7}Li(p,γ)^{8}Be

Experimental data from RI63, PE63 and ZA95a are adopted, covering the energy range $0.086 \le E \le 10$ MeV. The relative cross sections of RI63 and PE63 are normalized to the absolute values of ZA95a in the overlapping energy region (with an assumed 100% error). Several experiments using polarized proton beams [CH92, GO96, GO97] show that the reaction ^{7}Li(p,γ)^{8}B proceeds by both s-wave and p-wave capture. The anisotropic cross section has been confirmed by HA96. At energies $E < 100$ keV, estimations of the M1/E1 cross section ratio ranges between 12% lower and 20% higher than obtained when a constant S-factor is assumed. However, no clear results are given until now [see GO97 for an extended discussion]. Therefore, we consider an additional uncertainty of 20% to the constant S-factor equal to $S(E) = 1.5 \pm 0.2$ keV b [CE92] adopted for the extrapolation to low energies. The present rates are significantly higher than those of CA88 at low temperatures. This results mainly from a different extrapolation [ZA95a]. At high temperatures, the differences are probably due to the omission by CA88 of the contribution of the resonance around 2 MeV [RI63, PE63] and of the giant dipole resonance around 7.3 MeV [PE63, FI76].



T_9	low	adopt	high	exp	ratio	T_9	low	adopt	high	exp	ratio	T_9	low	adopt	high	exp	ratio
0.001	1.95	2.81	3.82	-28	109	0.04	2.18	2.48	2.78	-3	76	0.5	1.17	1.24	1.30	3	2.1
0.002	4.79	6.90	9.37	-21	107	0.05	1.10	1.25	1.40	-2	71	0.6	2.96	3.12	3.27	3	1.6
0.003	1.80	2.59	3.52	-17	105	0.06	3.76	4.24	4.73	-2	67	0.7	6.02	6.32	6.62	3	1.4
0.004	3.19	4.59	6.23	-15	104	0.07	0.99	1.12	1.25	-1	63	0.8	1.03	1.08	1.13	4	1.3
0.005	1.26	1.81	2.46	-13	102	0.08	2.21	2.48	2.76	-1	60	0.9	1.55	1.63	1.70	4	1.3
0.006	2.07	2.97	4.03	-12	101	0.09	4.33	4.86	5.38	-1	57	1	2.14	2.24	2.35	4	1.3
0.007	1.93	2.77	3.76	-11	100	0.1	7.72	8.63	9.54	-1	54	1.25	3.69	3.86	4.04	4	1.2
0.008	1.21	1.74	2.35	-10	99	0.11	1.28	1.43	1.57	0	52	1.5	5.11	5.35	5.60	4	1.2
0.009	5.71	8.20	11.1	-10	98	0.12	2.00	2.22	2.44	0	49	1.75	6.26	6.56	6.86	4	1.3
0.01	2.17	3.11	4.21	-9	97	0.13	2.98	3.30	3.62	0	47	2	7.17	7.53	7.88	4	1.3
0.011	6.96	9.98	13.6	-9	96	0.14	4.27	4.71	5.16	0	46	2.5	8.31	8.75	9.20	4	1.3
0.012	1.95	2.79	3.78	-8	95	0.15	5.92	6.52	7.12	0	44	3	8.89	9.43	9.97	4	1.4
0.013	4.89	7.01	9.48	-8	94	0.16	7.98	8.77	9.55	0	43	3.5	9.07	9.74	10.4	4	1.5
0.014	1.12	1.60	2.17	-7	93	0.18	1.35	1.48	1.61	1	40	4	9.15	9.98	10.8	4	1.6
0.015	2.38	3.40	4.60	-7	92	0.2	2.13	2.32	2.51	1	38	5	8.72	9.96	11.2	4	1.8
0.016	4.73	6.76	9.14	-7	92	0.25	5.31	5.72	6.14	1	30	6	8.08	9.82	11.6	4	2.0
0.018	1.59	2.27	3.07	-6	90	0.3	1.09	1.16	1.24	2	17	7	7.47	9.79	12.1	4	2.2
0.02	4.51	6.45	8.71	-6	88	0.35	2.05	2.18	2.32	2	7.8	8	6.83	9.76	12.7	4	2.5
0.025	3.63	5.18	6.98	-5	85	0.4	3.76	3.99	4.23	2	4.1	9	6.31	9.88	13.5	4	2.8
0.03	1.77	2.52	3.38	-4	82	0.45	6.77	7.17	7.56	2	2.7	10	0.58	1.00	1.42	5	3.2