

```

1 RR_UNC - Calculate uncertainties in reaction rates
2 -----
3 Andrej Trkov, Jozef Stefan Institute, Ljubljana, Slovenia
4 Version Jul. 2019
5 -----
6
7 Reference x.s. file      :
8 ..\IRDFF-II.g725
9 Source spectrum file    :
10 ..\IRDFF-II_sp.g
11
12 Reaction rate integ.flag :      1
13 Reaction rate norm. flag :      1
14
15 Spectrum MAT No.       :    9105
16 Spectrum Integral      :    7.708E+03
17 Spectrum average energy [eV] :    1.747E+06
18 Spectrum peak energy [eV] :    2.898E+05
19 Reaction rate RR = spectrum integral

```

No.	Mat.	MT	E(50%) [MeV]	<RR> +/- [mb]	Unc	Unc. x.s. [%]	Unc. Sp. [%]	Unc. Total [%]
22	1	3000	1	1.3052	1.4344E+07 +/- 4.092E+03	0.00	0.03	0.03
23	2	3000	2	1.22213	1.2929E+07 +/- 3.764E+03	0.00	0.03	0.03
24	3	3000	205	1.12247	3.9191E+05 +/- 3.728E+03	0.95	0.04	0.95
25	4	3000	207	2.24544	4.6352E+05 +/- 1.468E+04	3.17	0.04	3.17
26	5	3006	1	0.67417	1.6727E+07 +/- 5.093E+03	0.00	0.03	0.03
27	6	3006	2	0.70116	1.2403E+07 +/- 3.731E+03	0.00	0.03	0.03
28	7	3006	105	0.32564	3.3398E+06 +/- 2.297E+04	0.69	0.04	0.69
29	8	3006	205	0.32564	3.3398E+06 +/- 2.297E+04	0.69	0.04	0.69
30	9	3006	207	0.55684	4.2808E+06 +/- 1.889E+05	4.41	0.03	4.41
31	10	3007	1	1.35463	1.4148E+07 +/- 4.047E+03	0.00	0.03	0.03
32	11	3007	2	1.2581	1.2972E+07 +/- 3.789E+03	0.00	0.03	0.03
33	12	3007	205	5.99823	1.4979E+05 +/- 3.565E+03	2.38	0.10	2.38
34	13	3007	207	5.9976	1.5000E+05 +/- 3.566E+03	2.38	0.10	2.38
35	14	5000	1	0.84757	2.0773E+07 +/- 5.301E+03	0.00	0.03	0.03
36	15	5000	2	0.84893	1.9638E+07 +/- 5.030E+03	0.00	0.03	0.03
37	16	5000	101	0.49651	9.2166E+05 +/- 2.829E+02	0.00	0.03	0.03
38	17	5000	205	3.51692	6.4339E+04 +/- 7.947E+03	12.35	0.04	12.35
39	18	5000	207	0.55032	9.8825E+05 +/- 5.843E+04	5.91	0.03	5.91
40	19	5010	1	0.71695	2.2577E+07 +/- 5.776E+03	0.00	0.03	0.03
41	20	5010	2	0.75314	1.7698E+07 +/- 4.524E+03	0.00	0.03	0.03
42	21	5010	101	0.49618	4.6294E+06 +/- 1.421E+03	0.00	0.03	0.03
43	22	5010	107	0.44024	4.2793E+06 +/- 2.979E+05	6.96	0.03	6.96
44	23	5010	205	3.51491	3.2309E+05 +/- 3.994E+04	12.36	0.04	12.36
45	24	5010	207	0.54861	4.9573E+06 +/- 2.937E+05	5.92	0.03	5.92
46	25	5010	800	1.61347	1.3671E+06 +/- 2.848E+05	20.83	0.03	20.83
47	26	5010	801	0.28688	2.9122E+06 +/- 1.338E+05	4.59	0.04	4.59
48	27	5011	1	0.90951	2.0324E+07 +/- 5.231E+03	0.00	0.03	0.03
49	28	5011	2	0.88725	2.0120E+07 +/- 5.202E+03	0.00	0.03	0.03
50	29	5011	205	12.7699	5.4542E+01 +/- 9.290E+00	17.00	1.02	17.03
51	30	5011	207	11.3655	2.1830E+03 +/- 3.187E+02	14.59	0.60	14.60
52	31	9019	16	13.9224	7.8584E+01 +/- 2.628E+00	2.98	1.51	3.34
53	32	11023	1	0.91049	2.5917E+07 +/- 6.975E+03	0.00	0.03	0.03
54	33	11023	2	0.79613	2.2530E+07 +/- 6.342E+03	0.00	0.03	0.03
55	34	11023	16	15.4359	3.8215E+01 +/- 1.136E+00	1.31	2.67	2.97
56	35	11023	102	0.51808	2.5950E+03 +/- 1.383E+02	5.33	0.09	5.33
57	36	12000	11024g	8.21845	9.3947E+03 +/- 7.874E+01	0.81	0.21	0.84
58	37	12024	103	8.21809	1.1891E+04 +/- 9.967E+01	0.81	0.21	0.84
59	38	13027	16	15.9127	3.3061E+01 +/- 1.609E+00	3.66	3.21	4.87
60	39	13027	103	5.82764	2.7410E+04 +/- 5.637E+02	2.05	0.09	2.06
61	40	13027	107	8.60268	5.7116E+03 +/- 4.305E+01	0.72	0.23	0.75
62	41	13027	11024g	8.60268	5.7116E+03 +/- 4.305E+01	0.72	0.23	0.75
63	42	13027	13026g	15.7587	3.0130E+01 +/- 1.492E+00	3.88	3.08	4.95
64	43	13027	13026m	17.2664	2.9318E+00 +/- 3.517E-01	10.56	5.69	12.00
65	44	14000	13028g	7.2013	3.7671E+04 +/- 9.365E+02	2.48	0.15	2.49
66	45	14028	103	7.20123	4.0846E+04 +/- 1.015E+03	2.48	0.15	2.49
67	46	14029	13028g	15.6577	3.9529E+01 +/- 2.124E+00	4.55	2.86	5.37

68	47	15031	103	3.71237	2.2332E+05	+/-	7.650E+03	3.43	0.05	3.43
69	48	16000	15032g	4.06029	4.1123E+05	+/-	1.023E+04	2.49	0.05	2.49
70	49	16032	103	4.06029	4.3292E+05	+/-	1.077E+04	2.49	0.05	2.49
71	50	21045	1	1.18153	2.6822E+07	+/-	7.467E+03	0.00	0.03	0.03
72	51	21045	2	0.90245	2.2042E+07	+/-	6.513E+03	0.00	0.03	0.03
73	52	21045	102	0.33158	5.2834E+04	+/-	4.417E+03	8.36	0.05	8.36
74	53	22000	21046g	0	6.5883E+03	+/-	2.023E+02	3.07	0.09	3.07
75	54	22000	21047g	0	8.5963E+03	+/-	2.344E+02	2.73	0.05	2.73
76	55	22000	21048g	0	1.7699E+03	+/-	9.526E+01	5.38	0.21	5.38
77	56	22000	22045g	15.9076	4.4908E+00	+/-	2.455E-01	4.43	3.20	5.47
78	57	22046	16	15.9076	5.4434E+01	+/-	2.976E+00	4.43	3.20	5.47
79	58	22046	103	6.06515	7.9777E+04	+/-	2.452E+03	3.07	0.09	3.07
80	59	22047	103	3.77076	1.1535E+05	+/-	3.151E+03	2.73	0.05	2.73
81	60	22048	103	8.27643	2.4000E+03	+/-	1.292E+02	5.38	0.21	5.38
82	61	23051	107	9.87533	2.0961E+02	+/-	6.531E+00	3.09	0.36	3.12
83	62	23051	21048g	9.87533	2.0961E+02	+/-	6.531E+00	3.09	0.36	3.12
84	63	24000	24051g	14.6217	3.8464E+02	+/-	1.279E+01	2.69	1.96	3.32
85	64	25055	1	1.12766	2.8255E+07	+/-	8.865E+03	0.00	0.03	0.03
86	65	25055	2	0.90892	2.1090E+07	+/-	7.643E+03	0.00	0.04	0.04
87	66	25055	16	12.8602	2.3679E+03	+/-	6.210E+01	2.41	1.03	2.62
88	67	25055	102	0.42955	2.7936E+04	+/-	6.607E+03	23.65	0.19	23.65
89	68	26000	24051g	0	3.7079E+02	+/-	1.353E+01	3.65	0.15	3.65
90	69	26000	25054g	0	2.9495E+04	+/-	9.047E+02	3.07	0.06	3.07
91	70	26000	25056g	0	7.6501E+03	+/-	2.016E+02	2.63	0.16	2.63
92	71	26000	26053g	16.3979	8.9619E-01	+/-	5.622E-02	5.03	3.76	6.27
93	72	26054	1	0.99253	2.9484E+07	+/-	9.400E+03	0.00	0.03	0.03
94	73	26054	2	0.82121	2.6236E+07	+/-	8.881E+03	0.00	0.03	0.03
95	74	26054	16	16.3979	1.5333E+01	+/-	9.619E-01	5.03	3.76	6.27
96	75	26054	103	4.42404	5.0462E+05	+/-	1.548E+04	3.07	0.06	3.07
97	76	26054	107	7.37995	6.3436E+03	+/-	2.315E+02	3.65	0.15	3.65
98	77	26056	103	7.52318	8.3371E+03	+/-	2.197E+02	2.63	0.16	2.64
99	78	26058	1	0.88834	3.9817E+07	+/-	1.082E+04	0.00	0.03	0.03
100	79	26058	2	0.65979	2.8552E+07	+/-	8.766E+03	0.00	0.03	0.03
101	80	26058	102	0.49041	2.0084E+04	+/-	2.136E+03	10.63	0.06	10.63
102	81	27059	1	1.00276	3.0290E+07	+/-	8.189E+03	0.00	0.03	0.03
103	82	27059	2	0.76495	2.5624E+07	+/-	7.347E+03	0.00	0.03	0.03
104	83	27059	16	13.0261	2.0302E+03	+/-	3.932E+01	1.59	1.10	1.94
105	84	27059	17	19.7755	8.5232E-03	+/-	5.817E-03	43.53	52.56	68.25
106	85	27059	102	0.57542	4.5753E+04	+/-	1.383E+03	3.02	0.20	3.02
107	86	27059	103	5.91993	9.8754E+03	+/-	3.439E+02	3.48	0.09	3.48
108	87	27059	107	8.29955	1.2446E+03	+/-	4.502E+01	3.61	0.21	3.62
109	88	27059	25056g	8.29955	1.2446E+03	+/-	4.502E+01	3.61	0.21	3.62
110	89	28000	27058g	0	4.6817E+05	+/-	8.123E+03	1.73	0.05	1.74
111	90	28000	27060g	0	4.2042E+03	+/-	7.697E+01	1.83	0.13	1.83
112	91	28000	28057g	14.8635	2.7192E+01	+/-	6.846E-01	1.32	2.15	2.52
113	92	28058	16	14.8635	3.9943E+01	+/-	1.006E+00	1.32	2.15	2.52
114	93	28058	103	4.17977	6.8771E+05	+/-	1.193E+04	1.73	0.05	1.74
115	94	28060	103	7.01197	1.6030E+04	+/-	2.935E+02	1.83	0.13	1.83
116	95	29000	27060g	7.22359	2.7359E+03	+/-	8.194E+01	2.99	0.14	3.00
117	96	29000	29062g	13.7229	6.6743E+02	+/-	1.344E+01	1.42	1.42	2.01
118	97	29000	29064g	0.62826	6.7838E+04	+/-	6.486E+03	9.56	0.04	9.56
119	98	29063	1	0.95605	2.9913E+07	+/-	7.532E+03	0.00	0.03	0.03
120	99	29063	2	0.71938	2.4861E+07	+/-	6.566E+03	0.00	0.03	0.03
121	100	29063	16	13.7229	9.6519E+02	+/-	1.944E+01	1.42	1.42	2.01
122	101	29063	102	0.61255	9.6631E+04	+/-	9.380E+03	9.71	0.04	9.71
123	102	29063	107	7.22359	3.9565E+03	+/-	1.185E+02	2.99	0.14	3.00
124	103	29065	16	12.619	3.2974E+03	+/-	7.078E+01	1.93	0.95	2.15
125	104	30000	29064g	4.15297	1.2238E+05	+/-	2.070E+03	1.69	0.05	1.69
126	105	30000	29067g	4.68808	2.6241E+02	+/-	1.383E+01	5.27	0.07	5.27
127	106	30064	103	4.15297	2.4889E+05	+/-	4.210E+03	1.69	0.05	1.69
128	107	30067	103	4.66482	6.4429E+03	+/-	3.421E+02	5.31	0.06	5.31
129	108	30068	1	0.86606	3.3596E+07	+/-	8.527E+03	0.00	0.03	0.03
130	109	30068	2	0.70113	2.9233E+07	+/-	7.778E+03	0.00	0.03	0.03
131	110	30068	29067g	15.2108	1.1483E+01	+/-	1.777E+00	15.28	2.45	15.47
132	111	33075	16	12.8606	3.1046E+03	+/-	1.872E+02	5.94	1.04	6.03
133	112	39089	16	13.7944	1.6781E+03	+/-	3.284E+01	1.28	1.48	1.96
134	113	40000	40089g	14.3496	5.3315E+02	+/-	1.071E+01	0.93	1.78	2.01
135	114	40090	16	14.3496	1.0362E+03	+/-	2.083E+01	0.93	1.78	2.01
136	115	41093	1	0.84171	4.8259E+07	+/-	1.203E+04	0.00	0.02	0.02

137	116	41093	2	0.66479	4.0018E+07	+/-	1.065E+04	0.00	0.03	0.03
138	117	41093	102	0.45894	2.5282E+05	+/-	4.742E+03	1.88	0.04	1.88
139	118	41093	41093m	2.56226	9.1273E+05	+/-	2.373E+04	2.60	0.03	2.60
140	119	41093	41092m	11.2562	4.1678E+03	+/-	4.337E+01	0.85	0.60	1.04
141	120	41093	41094g	0.45894	6.3138E+04	+/-	1.184E+03	1.88	0.04	1.88
142	121	41093	41094m	0.45894	1.8968E+05	+/-	3.558E+03	1.88	0.04	1.88
143	122	42000	41092m	5.37869	6.5933E+03	+/-	2.396E+02	3.63	0.08	3.63
144	123	42092	41092m	5.37869	4.5377E+04	+/-	1.649E+03	3.63	0.08	3.63
145	124	45103	45103m	2.1619	4.7380E+06	+/-	1.878E+05	3.96	0.03	3.96
146	125	47109	1	0.95068	4.7227E+07	+/-	1.161E+04	0.00	0.02	0.02
147	126	47109	2	0.67977	3.2415E+07	+/-	8.468E+03	0.00	0.03	0.03
148	127	47109	47110n	0.47816	9.4231E+04	+/-	6.702E+03	7.11	0.03	7.11
149	128	48000	1	0.98766	4.7534E+07	+/-	1.167E+04	0.00	0.02	0.02
150	129	48000	2	0.77147	3.7475E+07	+/-	9.582E+03	0.00	0.03	0.03
151	130	48000	101	0.57514	5.7843E+05	+/-	1.646E+02	0.00	0.03	0.03
152	131	49000	49114m	0.99379	7.2247E+04	+/-	1.903E+03	2.63	0.08	2.63
153	132	49113	1	1.07449	4.3860E+07	+/-	1.074E+04	0.00	0.02	0.02
154	133	49113	2	0.91092	3.6460E+07	+/-	9.192E+03	0.00	0.03	0.03
155	134	49113	102	0.83541	1.8715E+06	+/-	5.236E+02	0.00	0.03	0.03
156	135	49113	49113m	2.65372	9.6862E+05	+/-	1.147E+04	1.18	0.04	1.18
157	136	49113	49114g	0.7772	3.7651E+05	+/-	1.066E+04	2.83	0.03	2.83
158	137	49113	49114m	0.84976	1.4950E+06	+/-	4.327E+04	2.89	0.03	2.89
159	138	49115	1	1.07558	4.3839E+07	+/-	1.073E+04	0.00	0.02	0.02
160	139	49115	2	0.9027	3.6488E+07	+/-	9.198E+03	0.00	0.03	0.03
161	140	49115	102	0.77509	1.3657E+06	+/-	3.837E+02	0.00	0.03	0.03
162	141	49115	49115m	2.58391	1.1752E+06	+/-	1.959E+04	1.67	0.03	1.67
163	142	49115	49114m	11.731	8.4743E+03	+/-	4.397E+02	5.14	0.70	5.19
164	143	49115	49116g	0.72034	2.6870E+05	+/-	6.094E+03	2.27	0.03	2.27
165	144	49115	49116m	0.78901	1.0970E+06	+/-	2.528E+04	2.30	0.03	2.30
166	145	53127	16	11.5038	1.1006E+04	+/-	3.497E+02	3.11	0.65	3.18
167	146	57139	1	1.24507	4.5329E+07	+/-	1.115E+04	0.00	0.02	0.02
168	147	57139	2	1.04543	3.6703E+07	+/-	9.080E+03	0.00	0.02	0.02
169	148	57139	102	0.90701	5.6707E+04	+/-	2.827E+03	4.99	0.03	4.99
170	149	59141	16	11.7691	1.0308E+04	+/-	1.181E+03	11.44	0.72	11.46
171	150	64000	1	1.11111	5.3217E+07	+/-	1.299E+04	0.00	0.02	0.02
172	151	64000	2	0.84048	3.4874E+07	+/-	8.767E+03	0.00	0.03	0.03
173	152	64000	101	0.49511	9.1058E+05	+/-	3.126E+02	0.00	0.03	0.03
174	153	69169	16	10.3257	3.3806E+04	+/-	1.116E+03	3.27	0.43	3.30
175	154	69169	17	17.7069	4.4611E+01	+/-	4.439E+00	6.76	7.31	9.95
176	155	73181	1	1.19308	5.4692E+07	+/-	1.337E+04	0.00	0.02	0.02
177	156	73181	2	1.04007	3.7262E+07	+/-	9.190E+03	0.00	0.02	0.02
178	157	73181	102	0.4841	8.2445E+05	+/-	4.683E+04	5.68	0.04	5.68
179	158	74186	1	1.17359	5.4828E+07	+/-	1.343E+04	0.00	0.02	0.02
180	159	74186	2	0.86359	3.8409E+07	+/-	9.671E+03	0.00	0.03	0.03
181	160	74186	102	0.69438	2.9767E+05	+/-	6.894E+03	2.32	0.03	2.32
182	161	79197	1	1.21477	5.2358E+07	+/-	1.288E+04	0.00	0.02	0.02
183	162	79197	2	0.95576	3.8286E+07	+/-	9.601E+03	0.00	0.03	0.03
184	163	79197	16	10.4765	2.9712E+04	+/-	5.818E+02	1.91	0.45	1.96
185	164	79197	102	0.43521	7.5906E+05	+/-	3.643E+03	0.48	0.03	0.48
186	165	80199	80199m	3.00365	1.8001E+06	+/-	6.489E+04	3.60	0.04	3.60
187	166	82204	82204m	5.03229	1.1817E+05	+/-	5.407E+03	4.58	0.07	4.58
188	167	83209	16	9.81798	5.4820E+04	+/-	2.230E+03	4.05	0.36	4.07
189	168	83209	17	17.4724	6.1175E+01	+/-	5.423E+00	6.17	6.37	8.86
190	169	90232	1	1.08289	6.1924E+07	+/-	1.517E+04	0.00	0.02	0.02
191	170	90232	2	0.73401	4.1812E+07	+/-	1.073E+04	0.00	0.03	0.03
192	171	90232	18	2.93066	5.0213E+05	+/-	2.904E+04	5.78	0.04	5.78
193	172	90232	102	0.67525	8.3542E+05	+/-	1.661E+04	1.99	0.03	1.99
194	173	92235	1	1.0987	6.1760E+07	+/-	1.512E+04	0.00	0.02	0.02
195	174	92235	18	1.2517	9.5271E+06	+/-	1.147E+05	1.20	0.02	1.20
196	175	92238	1	1.10048	6.2139E+07	+/-	1.519E+04	0.00	0.02	0.02
197	176	92238	2	0.77051	4.1201E+07	+/-	1.049E+04	0.00	0.03	0.03
198	177	92238	16	8.17033	1.1974E+05	+/-	6.107E+03	5.10	0.21	5.10
199	178	92238	18	2.69289	1.9496E+06	+/-	2.388E+04	1.22	0.04	1.22
200	179	92238	102	0.68491	6.2735E+05	+/-	1.177E+04	1.88	0.03	1.88
201	180	93237	1	1.10111	6.0387E+07	+/-	1.478E+04	0.00	0.02	0.02
202	181	93237	2	0.7997	3.6608E+07	+/-	9.299E+03	0.00	0.03	0.03
203	182	93237	18	1.83921	9.1138E+06	+/-	1.553E+05	1.70	0.03	1.70
204	183	94239	1	1.08437	6.2228E+07	+/-	1.523E+04	0.00	0.02	0.02
205	184	94239	2	0.81972	3.6567E+07	+/-	9.245E+03	0.00	0.03	0.03

206	185	94239	18	1.38283	1.3533E+07	+/-	1.685E+05	1.24	0.02	1.25
207	186	95241	1	1.04642	6.2893E+07	+/-	1.540E+04	0.00	0.02	0.02
208	187	95241	2	0.78319	4.1197E+07	+/-	1.047E+04	0.00	0.03	0.03
209	188	95241	18	2.07562	8.9871E+06	+/-	2.479E+05	2.76	0.03	2.76
210										
211										