```
 RR_UNC - Calculate uncertainties in reaction rates
 ----------------------------------------------------------
 Andrej Trkov, Jozef Stefan Institute, Ljubljana, Slovenia
                  Version Jul. 2019
 ----------------------------------------------------------

 Reference x.s. file      :
..\IRDFF-II.g725
 Source spectrum file     :
..\IRDFF-II_sp.g
 Reaction rate integ.flag :      1
 Reaction rate norm. flag :      1

 Spectrum MAT No.         :   9104
 Spectrum Integral            :  8.191E+03
 Spectrum average energy [eV] :  1.797E+06
 Reaction rate RR = spectrum integral
```

No.	Mat.	MT	E(50%) [MeV]	<RR> +/- Unc [mb]	Unc. x.s. [%]	Unc. Sp. [%]	Unc. Total [%]
1	3000	1	1.3771	1.5214E+07 +/- 2.634E+03	0.00	0.02	0.02
2	3000	2	1.2949	1.3682E+07 +/- 2.414E+03	0.00	0.02	0.02
3	3000	205	1.35637	4.1328E+05 +/- 4.083E+03	0.99	0.03	0.99
4	3000	207	2.65926	4.9249E+05 +/- 1.622E+04	3.29	0.03	3.29
5	3006	1	0.75545	1.7478E+07 +/- 3.240E+03	0.00	0.02	0.02
6	3006	2	0.77638	1.2970E+07 +/- 2.374E+03	0.00	0.02	0.02
7	3006	105	0.34045	3.4190E+06 +/- 2.406E+04	0.70	0.02	0.70
8	3006	205	0.34045	3.4190E+06 +/- 2.406E+04	0.70	0.02	0.70
9	3006	207	0.65146	4.4599E+06 +/- 2.088E+05	4.68	0.02	4.68
10	3007	1	1.4232	1.5028E+07 +/- 2.608E+03	0.00	0.02	0.02
11	3007	2	1.32943	1.3741E+07 +/- 2.432E+03	0.00	0.02	0.02
12	3007	205	6.00221	1.6641E+05 +/- 3.951E+03	2.37	0.06	2.37
13	3007	207	6.00164	1.6662E+05 +/- 3.951E+03	2.37	0.06	2.37
14	5000	1	0.92635	2.1774E+07 +/- 3.408E+03	0.00	0.02	0.02
15	5000	2	0.92453	2.0586E+07 +/- 3.235E+03	0.00	0.02	0.02
16	5000	101	0.53642	9.5224E+05 +/- 1.794E+02	0.00	0.02	0.02
17	5000	205	3.55451	7.0414E+04 +/- 8.644E+03	12.28	0.02	12.28
18	5000	207	0.60461	1.0246E+06 +/- 6.390E+04	6.24	0.02	6.24
19	5010	1	0.76323	2.3585E+07 +/- 3.706E+03	0.00	0.02	0.02
20	5010	2	0.79375	1.8528E+07 +/- 2.911E+03	0.00	0.02	0.02
21	5010	101	0.53598	4.7828E+06 +/- 9.012E+02	0.00	0.02	0.02
22	5010	107	0.46975	4.3967E+06 +/- 3.259E+05	7.41	0.02	7.41
23	5010	205	3.55251	3.5360E+05 +/- 4.344E+04	12.29	0.02	12.29
24	5010	207	0.60209	5.1393E+06 +/- 3.211E+05	6.25	0.02	6.25
25	5010	800	1.64529	1.4590E+06 +/- 3.116E+05	21.36	0.02	21.36
26	5010	801	0.29979	2.9377E+06 +/- 1.463E+05	4.98	0.02	4.98
27	5011	1	1.00309	2.1324E+07 +/- 3.366E+03	0.00	0.02	0.02
28	5011	2	0.97855	2.1097E+07 +/- 3.346E+03	0.00	0.02	0.02
29	5011	205	12.7229	5.9706E+01 +/- 1.014E+01	16.97	0.61	16.98
30	5011	207	11.3459	2.4147E+03 +/- 3.507E+02	14.52	0.36	14.52
31	9019	16	13.9081	8.4863E+01 +/- 2.660E+00	3.00	0.91	3.13
32	11023	1	0.95008	2.7342E+07 +/- 4.500E+03	0.00	0.02	0.02
33	11023	2	0.82492	2.3642E+07 +/- 4.073E+03	0.00	0.02	0.02
34	11023	16	15.4237	4.0790E+01 +/- 8.486E-01	1.30	1.63	2.08
35	11023	102	0.57207	2.6753E+03 +/- 1.370E+02	5.12	0.06	5.12
36	12000	11024g	8.21839	1.0459E+04 +/- 8.599E+01	0.81	0.12	0.82
37	12024	103	8.21804	1.3239E+04 +/- 1.089E+02	0.81	0.12	0.82
38	13027	16	15.8943	3.5243E+01 +/- 1.440E+00	3.58	1.97	4.08
39	13027	103	5.83429	3.0430E+04 +/- 6.256E+02	2.06	0.05	2.06
40	13027	107	8.60238	6.3572E+03 +/- 4.652E+01	0.72	0.14	0.73
41	13027	11024g	8.60238	6.3572E+03 +/- 4.652E+01	0.72	0.14	0.73
42	13027	13026g	15.7832	3.2006E+01 +/- 1.357E+00	3.80	1.88	4.24
43	13027	13026m	17.4917	3.2380E+00 +/- 3.540E-01	10.33	3.56	10.93
44	14000	13028g	7.2018	4.1901E+04 +/- 1.040E+03	2.48	0.09	2.48
45	14028	103	7.20173	4.5433E+04 +/- 1.128E+03	2.48	0.09	2.48
46	14029	13028g	15.6696	4.2555E+01 +/- 2.007E+00	4.37	1.77	4.72

68	47	15031	103	3.71803	2.4662E+05	+/-	8.441E+03	3.42	0.03	3.42
69	48	16000	15032g	4.06522	4.5460E+05	+/-	1.130E+04	2.49	0.03	2.49
70	49	16032	103	4.06522	4.7857E+05	+/-	1.189E+04	2.49	0.03	2.49
71	50	21045	1	1.25968	2.8322E+07	+/-	4.793E+03	0.00	0.02	0.02
72	51	21045	2	0.97249	2.3104E+07	+/-	4.139E+03	0.00	0.02	0.02
73	52	21045	102	0.35389	5.3611E+04	+/-	4.543E+03	8.47	0.03	8.47
74	53	22000	21046g	0	7.3166E+03	+/-	2.244E+02	3.07	0.06	3.07
75	54	22000	21047g	0	9.4899E+03	+/-	2.587E+02	2.73	0.03	2.73
76	55	22000	21048g	0	1.9688E+03	+/-	1.060E+02	5.38	0.12	5.38
77	56	22000	22045g	15.8877	4.7745E+00	+/-	2.302E-01	4.41	1.96	4.82
78	57	22046	16	15.8877	5.7873E+01	+/-	2.791E+00	4.41	1.96	4.82
79	58	22046	103	6.07089	8.8597E+04	+/-	2.720E+03	3.07	0.06	3.07
80	59	22047	103	3.78183	1.2734E+05	+/-	3.477E+03	2.73	0.03	2.73
81	60	22048	103	8.27573	2.6697E+03	+/-	1.438E+02	5.38	0.12	5.39
82	61	23051	107	9.85746	2.3264E+02	+/-	7.243E+00	3.11	0.22	3.11
83	62	23051	21048g	9.85746	2.3264E+02	+/-	7.243E+00	3.11	0.22	3.11
84	63	24000	24051g	14.5909	4.1181E+02	+/-	1.218E+01	2.71	1.19	2.96
85	64	25055	1	1.20241	2.9821E+07	+/-	5.438E+03	0.00	0.02	0.02
86	65	25055	2	0.9817	2.2105E+07	+/-	4.578E+03	0.00	0.02	0.02
87	66	25055	16	12.8126	2.5923E+03	+/-	6.559E+01	2.45	0.62	2.53
88	67	25055	102	0.46749	2.8514E+04	+/-	6.936E+03	24.33	0.07	24.33
89	68	26000	24051g	0	4.1239E+02	+/-	1.501E+01	3.64	0.09	3.64
90	69	26000	25054g	0	3.2636E+04	+/-	9.995E+02	3.06	0.03	3.06
91	70	26000	25056g	0	8.5126E+03	+/-	2.241E+02	2.63	0.10	2.63
92	71	26000	26053g	16.3425	9.5084E-01	+/-	5.247E-02	5.01	2.31	5.52
93	72	26054	1	1.06145	3.1069E+07	+/-	5.959E+03	0.00	0.02	0.02
94	73	26054	2	0.8807	2.7492E+07	+/-	5.595E+03	0.00	0.02	0.02
95	74	26054	16	16.3425	1.6268E+01	+/-	8.976E-01	5.01	2.31	5.52
96	75	26054	103	4.43101	5.5835E+05	+/-	1.710E+04	3.06	0.03	3.06
97	76	26054	107	7.38106	7.0554E+03	+/-	2.569E+02	3.64	0.09	3.64
98	77	26056	103	7.52608	9.2771E+03	+/-	2.442E+02	2.63	0.10	2.63
99	78	26058	1	0.94342	4.1783E+07	+/-	6.929E+03	0.00	0.02	0.02
100	79	26058	2	0.71072	2.9675E+07	+/-	5.548E+03	0.00	0.02	0.02
101	80	26058	102	0.52164	2.0593E+04	+/-	2.195E+03	10.66	0.03	10.66
102	81	27059	1	1.07639	3.1890E+07	+/-	5.250E+03	0.00	0.02	0.02
103	82	27059	2	0.81591	2.6759E+07	+/-	4.670E+03	0.00	0.02	0.02
104	83	27059	16	12.984	2.2174E+03	+/-	3.916E+01	1.64	0.66	1.77
105	84	27059	17	19.755	1.2181E-02	+/-	6.035E-03	43.65	23.44	49.55
106	85	27059	102	0.61746	4.7208E+04	+/-	1.488E+03	3.15	0.11	3.15
107	86	27059	103	5.92726	1.0964E+04	+/-	3.815E+02	3.48	0.06	3.48
108	87	27059	107	8.2991	1.3846E+03	+/-	4.997E+01	3.61	0.12	3.61
109	88	27059	25056g	8.2991	1.3846E+03	+/-	4.997E+01	3.61	0.12	3.61
110	89	28000	27058g	0	5.1759E+05	+/-	8.977E+03	1.73	0.03	1.73
111	90	28000	27060g	0	4.6753E+03	+/-	8.531E+01	1.82	0.08	1.82
112	91	28000	28057g	14.8431	2.9097E+01	+/-	5.374E-01	1.30	1.31	1.85
113	92	28058	16	14.8431	4.2741E+01	+/-	7.893E-01	1.30	1.31	1.85
114	93	28058	103	4.18771	7.6031E+05	+/-	1.319E+04	1.73	0.03	1.73
115	94	28060	103	7.01399	1.7826E+04	+/-	3.253E+02	1.82	0.08	1.82
116	95	29000	27060g	7.22562	3.0426E+03	+/-	9.106E+01	2.99	0.09	2.99
117	96	29000	29062g	13.7229	7.2197E+02	+/-	1.208E+01	1.44	0.86	1.67
118	97	29000	29064g	0.67333	7.0358E+04	+/-	6.621E+03	9.41	0.04	9.41
119	98	29063	1	1.02309	3.1475E+07	+/-	4.861E+03	0.00	0.02	0.02
120	99	29063	2	0.76465	2.5934E+07	+/-	4.199E+03	0.00	0.02	0.02
121	100	29063	16	13.7229	1.0441E+03	+/-	1.747E+01	1.44	0.86	1.67
122	101	29063	102	0.65613	1.0013E+05	+/-	9.574E+03	9.56	0.04	9.56
123	102	29063	107	7.22562	4.4000E+03	+/-	1.317E+02	2.99	0.09	2.99
124	103	29065	16	12.5836	3.6174E+03	+/-	7.310E+01	1.94	0.57	2.02
125	104	30000	29064g	4.15915	1.3536E+05	+/-	2.286E+03	1.69	0.03	1.69
126	105	30000	29067g	4.70073	2.9027E+02	+/-	1.527E+01	5.26	0.04	5.26
127	106	30064	103	4.15915	2.7528E+05	+/-	4.649E+03	1.69	0.03	1.69
128	107	30067	103	4.67786	7.1285E+03	+/-	3.779E+02	5.30	0.04	5.30
129	108	30068	1	0.92445	3.5279E+07	+/-	5.577E+03	0.00	0.02	0.02
130	109	30068	2	0.74227	3.0480E+07	+/-	5.067E+03	0.00	0.02	0.02
131	110	30068	29067g	15.1937	1.2371E+01	+/-	1.898E+00	15.27	1.51	15.34
132	111	33075	16	12.8134	3.3981E+03	+/-	2.058E+02	6.02	0.62	6.06
133	112	39089	16	13.7997	1.8124E+03	+/-	2.851E+01	1.29	0.89	1.57
134	113	40000	40089g	14.3149	5.7216E+02	+/-	8.146E+00	0.92	1.08	1.42
135	114	40090	16	14.3149	1.1121E+03	+/-	1.583E+01	0.92	1.08	1.42
136	115	41093	1	0.88923	5.0647E+07	+/-	7.758E+03	0.00	0.02	0.02

137	116	41093	2	0.69635	4.1638E+07	+/- 6.821E+03	0.00	0.02	0.02
138	117	41093	102	0.4838	2.5810E+05	+/- 4.956E+03	1.92	0.02	1.92
139	118	41093	41093m	2.57858	9.9941E+05	+/- 2.596E+04	2.60	0.02	2.60
140	119	41093	41092m	11.2461	4.6096E+03	+/- 4.272E+01	0.85	0.36	0.93
141	120	41093	41094g	0.4838	6.4456E+04	+/- 1.238E+03	1.92	0.02	1.92
142	121	41093	41094m	0.4838	1.9364E+05	+/- 3.718E+03	1.92	0.02	1.92
143	122	42000	41092m	5.38604	7.3118E+03	+/- 2.651E+02	3.63	0.05	3.63
144	123	42092	41092m	5.38604	5.0322E+04	+/- 1.825E+03	3.63	0.05	3.63
145	124	45103	45103m	2.1895	5.1579E+06	+/- 2.042E+05	3.96	0.02	3.96
146	125	47109	1	1.00226	4.9749E+07	+/- 7.516E+03	0.00	0.02	0.02
147	126	47109	2	0.71824	3.3770E+07	+/- 5.421E+03	0.00	0.02	0.02
148	127	47109	47110n	0.50522	9.6701E+04	+/- 6.912E+03	7.15	0.02	7.15
149	128	48000	1	1.03787	5.0145E+07	+/- 7.568E+03	0.00	0.02	0.02
150	129	48000	2	0.81137	3.9211E+07	+/- 6.165E+03	0.00	0.02	0.02
151	130	48000	101	0.61017	5.9883E+05	+/- 1.047E+02	0.00	0.02	0.02
152	131	49000	49114m	1.0427	7.5983E+04	+/- 2.021E+03	2.66	0.05	2.66
153	132	49113	1	1.12367	4.6397E+07	+/- 6.983E+03	0.00	0.02	0.02
154	133	49113	2	0.95079	3.8362E+07	+/- 5.949E+03	0.00	0.02	0.02
155	134	49113	102	0.87815	1.9546E+06	+/- 3.371E+02	0.00	0.02	0.02
156	135	49113	49113m	2.66415	1.0633E+06	+/- 1.259E+04	1.18	0.02	1.18
157	136	49113	49114g	0.82224	3.9200E+05	+/- 1.125E+04	2.87	0.02	2.87
158	137	49113	49114m	0.89185	1.5626E+06	+/- 4.585E+04	2.93	0.02	2.93
159	138	49115	1	1.12478	4.6377E+07	+/- 6.979E+03	0.00	0.02	0.02
160	139	49115	2	0.94224	3.8382E+07	+/- 5.951E+03	0.00	0.02	0.02
161	140	49115	102	0.82006	1.4227E+06	+/- 2.465E+02	0.00	0.02	0.02
162	141	49115	49115m	2.59555	1.2892E+06	+/- 2.147E+04	1.67	0.02	1.67
163	142	49115	49114m	11.7123	9.3496E+03	+/- 4.851E+02	5.17	0.42	5.19
164	143	49115	49116g	0.76382	2.7922E+05	+/- 6.429E+03	2.30	0.02	2.30
165	144	49115	49116m	0.83423	1.1435E+06	+/- 2.677E+04	2.34	0.02	2.34
166	145	53127	16	11.4874	1.2155E+04	+/- 3.824E+02	3.12	0.39	3.15
167	146	57139	1	1.29286	4.8176E+07	+/- 7.288E+03	0.00	0.02	0.02
168	147	57139	2	1.08975	3.8785E+07	+/- 5.899E+03	0.00	0.02	0.02
169	148	57139	102	0.96783	5.9282E+04	+/- 2.958E+03	4.99	0.02	4.99
170	149	59141	16	11.7544	1.1371E+04	+/- 1.308E+03	11.50	0.43	11.51
171	150	64000	1	1.16511	5.6311E+07	+/- 8.454E+03	0.00	0.02	0.02
172	151	64000	2	0.8875	3.6555E+07	+/- 5.647E+03	0.00	0.02	0.02
173	152	64000	101	0.53136	9.3452E+05	+/- 1.992E+02	0.00	0.02	0.02
174	153	69169	16	10.3172	3.7543E+04	+/- 1.236E+03	3.28	0.26	3.29
175	154	69169	17	18.005	5.0970E+01	+/- 4.082E+00	6.60	4.53	8.01
176	155	73181	1	1.25034	5.7960E+07	+/- 8.711E+03	0.00	0.02	0.02
177	156	73181	2	1.09809	3.9278E+07	+/- 5.953E+03	0.00	0.02	0.02
178	157	73181	102	0.52015	8.4669E+05	+/- 4.782E+04	5.65	0.03	5.65
179	158	74186	1	1.23652	5.8030E+07	+/- 8.741E+03	0.00	0.02	0.02
180	159	74186	2	0.92438	4.0272E+07	+/- 6.227E+03	0.00	0.02	0.02
181	160	74186	102	0.73615	3.0908E+05	+/- 7.217E+03	2.33	0.02	2.33
182	161	79197	1	1.28791	5.5415E+07	+/- 8.385E+03	0.00	0.02	0.02
183	162	79197	2	1.03436	4.0223E+07	+/- 6.192E+03	0.00	0.02	0.02
184	163	79197	16	10.4698	3.2971E+04	+/- 6.366E+02	1.91	0.27	1.93
185	164	79197	102	0.46293	7.7761E+05	+/- 3.757E+03	0.48	0.03	0.48
186	165	80199	80199m	3.01805	1.9788E+06	+/- 7.135E+04	3.61	0.02	3.61
187	166	82204	82204m	5.04098	1.3100E+05	+/- 5.990E+03	4.57	0.04	4.57
188	167	83209	16	9.8074	6.0996E+04	+/- 2.481E+03	4.06	0.21	4.07
189	168	83209	17	17.7382	6.8209E+01	+/- 4.938E+00	6.05	3.98	7.24
190	169	90232	1	1.15481	6.5372E+07	+/- 9.839E+03	0.00	0.02	0.02
191	170	90232	2	0.78837	4.3669E+07	+/- 6.873E+03	0.00	0.02	0.02
192	171	90232	18	2.94302	5.5262E+05	+/- 3.195E+04	5.78	0.02	5.78
193	172	90232	102	0.70365	8.6648E+05	+/- 1.801E+04	2.08	0.02	2.08
194	173	92235	1	1.17146	6.5229E+07	+/- 9.816E+03	0.00	0.02	0.02
195	174	92235	18	1.31199	1.0107E+07	+/- 1.217E+05	1.20	0.02	1.20
196	175	92238	1	1.1711	6.5644E+07	+/- 9.866E+03	0.00	0.02	0.02
197	176	92238	2	0.82612	4.3085E+07	+/- 6.734E+03	0.00	0.02	0.02
198	177	92238	16	8.17216	1.3333E+05	+/- 6.797E+03	5.10	0.13	5.10
199	178	92238	18	2.70393	2.1433E+06	+/- 2.624E+04	1.22	0.02	1.22
200	179	92238	102	0.71543	6.5047E+05	+/- 1.229E+04	1.89	0.02	1.89
201	180	93237	1	1.173	6.3782E+07	+/- 9.596E+03	0.00	0.02	0.02
202	181	93237	2	0.86721	3.8324E+07	+/- 5.973E+03	0.00	0.02	0.02
203	182	93237	18	1.86541	9.8919E+06	+/- 1.681E+05	1.70	0.02	1.70
204	183	94239	1	1.15596	6.5707E+07	+/- 9.881E+03	0.00	0.02	0.02
205	184	94239	2	0.88692	3.8312E+07	+/- 5.944E+03	0.00	0.02	0.02

```
    185 94239     18  1.43484 1.4427E+07 +/- 1.796E+05     1.24   0.02   1.25
    186 95241      1  1.11625 6.6342E+07 +/- 9.985E+03     0.00   0.02   0.02
    187 95241      2   0.8481 4.3128E+07 +/- 6.725E+03     0.00   0.02   0.02
    188 95241     18  2.09325 9.8082E+06 +/- 2.716E+05     2.77   0.02   2.77
```