

```

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 Reaction rate integ.flag :      1
12 Reaction rate norm. flag :      1
13
14 Spectrum MAT No.       :    9010
15 Spectrum Integral      :    2.510E+02
16 Spectrum average energy [eV] :    5.754E+05
17 Spectrum peak energy [eV] :    3.699E-02
18 Reaction rate RR = spectrum integral

```

No.	Mat.	MT	E(50%) [MeV]	<RR> +/- [mb]	Unc	Unc. x.s. [%]	Unc. Sp. [%]	Unc. Total [%]
19	1	3000	1	9.346-8	1.8166E+06 +/- 1.409E+02	0.00	0.01	0.01
20	2	3000	2	0.24638	3.3951E+05 +/- 1.729E+01	0.00	0.01	0.01
21	3	3000	205	6.560-8	1.4643E+06 +/- 7.397E+03	0.51	0.01	0.51
22	4	3000	207	6.564-8	1.4666E+06 +/- 7.398E+03	0.50	0.01	0.50
23	5	3006	1	6.710-8	1.9607E+07 +/- 1.803E+03	0.00	0.01	0.01
24	6	3006	2	0.2515	3.1310E+05 +/- 1.746E+01	0.00	0.01	0.01
25	7	3006	105	6.554-8	1.9280E+07 +/- 9.745E+04	0.51	0.01	0.51
26	8	3006	205	6.554-8	1.9280E+07 +/- 9.745E+04	0.51	0.01	0.51
27	9	3006	207	6.558-8	1.9288E+07 +/- 9.746E+04	0.51	0.01	0.51
28	10	3007	1	0.25315	3.5532E+05 +/- 1.788E+01	0.00	0.01	0.01
29	11	3007	2	0.24595	3.4168E+05 +/- 1.739E+01	0.00	0.01	0.01
30	12	3007	205	5.86902	1.0089E+03 +/- 2.539E+01	2.52	0.03	2.52
31	13	3007	207	2.322-7	2.8726E+03 +/- 6.447E+01	2.24	0.01	2.24
32	14	5000	1	7.050-8	1.6608E+07 +/- 1.483E+03	0.00	0.01	0.01
33	15	5000	2	6.611-3	9.1676E+05 +/- 3.621E+01	0.00	0.00	0.00
34	16	5000	101	6.528-8	1.5682E+07 +/- 1.468E+03	0.00	0.01	0.01
35	17	5000	205	2.33564	6.7703E+02 +/- 1.001E+02	14.79	0.01	14.79
36	18	5000	207	6.528-8	1.5681E+07 +/- 1.211E+05	0.77	0.01	0.77
37	19	5010	1	6.592-8	7.9435E+07 +/- 7.390E+03	0.00	0.01	0.01
38	20	5010	2	0.09467	5.9235E+05 +/- 2.386E+01	0.00	0.00	0.00
39	21	5010	101	6.528-8	7.8802E+07 +/- 7.379E+03	0.00	0.01	0.01
40	22	5010	107	6.527-8	7.8791E+07 +/- 6.088E+05	0.77	0.01	0.77
41	23	5010	205	2.33482	3.4011E+03 +/- 5.032E+02	14.80	0.01	14.80
42	24	5010	207	6.528-8	7.8798E+07 +/- 6.088E+05	0.77	0.01	0.77
43	25	5010	800	6.556-8	4.9773E+06 +/- 4.191E+04	0.84	0.01	0.84
44	26	5010	801	6.526-8	7.3813E+07 +/- 6.073E+05	0.82	0.01	0.82
45	27	5011	1	4.648-3	9.9900E+05 +/- 3.970E+01	0.00	0.00	0.00
46	28	5011	2	4.585-3	9.9739E+05 +/- 3.968E+01	0.00	0.00	0.00
47	29	5011	205	12.7371	2.5865E-01 +/- 4.397E-02	16.99	0.41	17.00
48	30	5011	207	11.2777	1.0772E+01 +/- 1.541E+00	14.31	0.23	14.31
49	31	9019	16	13.9224	3.7149E-01 +/- 1.130E-02	2.98	0.61	3.04
50	32	11023	1	3.023-3	1.5939E+06 +/- 2.436E+02	0.00	0.02	0.02
51	33	11023	2	2.999-3	1.5447E+06 +/- 2.432E+02	0.00	0.02	0.02
52	34	11023	16	15.4707	1.8073E-01 +/- 3.068E-03	1.30	1.09	1.70
53	35	11023	102	7.198-8	1.1708E+04 +/- 3.124E+02	2.67	0.01	2.67
54	36	12000	11024g	8.09313	5.3215E+01 +/- 4.466E-01	0.84	0.07	0.84
55	37	12024	103	8.09286	6.7357E+01 +/- 5.653E-01	0.84	0.07	0.84
56	38	13027	16	16.0262	1.5773E-01 +/- 6.121E-03	3.65	1.33	3.88
57	39	13027	103	5.66017	1.8508E+02 +/- 3.820E+00	2.06	0.03	2.06
58	40	13027	107	8.44536	3.1764E+01 +/- 2.383E-01	0.75	0.08	0.75
59	41	13027	11024g	8.44536	3.1764E+01 +/- 2.383E-01	0.75	0.08	0.75
60	42	13027	13026g	15.8762	1.4252E-01 +/- 5.812E-03	3.88	1.27	4.08
61	43	13027	13026m	17.5398	1.5207E-02 +/- 1.638E-03	10.51	2.36	10.77
62	44	14000	13028g	7.03494	2.3000E+02 +/- 5.869E+00	2.55	0.05	2.55
63	45	14028	103	7.03488	2.4938E+02 +/- 6.364E+00	2.55	0.05	2.55
64	46	14029	13028g	15.8152	1.9163E-01 +/- 8.774E-03	4.42	1.20	4.58

68	47	15031	103	3.38099	1.8985E+03	+/-	6.700E+01	3.53	0.01	3.53
69	48	16000	15032g	3.79842	3.3677E+03	+/-	8.596E+01	2.55	0.02	2.55
70	49	16032	103	3.79841	3.5454E+03	+/-	9.049E+01	2.55	0.02	2.55
71	50	21045	1	2.130-5	3.5084E+06	+/-	2.431E+02	0.00	0.01	0.01
72	51	21045	2	1.097-4	2.9001E+06	+/-	2.215E+02	0.00	0.01	0.01
73	52	21045	102	6.496-8	5.5580E+05	+/-	3.459E+04	6.22	0.01	6.22
74	53	22000	21046g	0	4.4242E+01	+/-	1.421E+00	3.21	0.03	3.21
75	54	22000	21047g	0	7.4435E+01	+/-	2.079E+00	2.79	0.01	2.79
76	55	22000	21048g	0	1.0059E+01	+/-	5.635E-01	5.60	0.07	5.60
77	56	22000	22045g	16.0129	2.1347E-02	+/-	9.832E-04	4.41	1.32	4.61
78	57	22046	16	16.0129	2.5875E-01	+/-	1.192E-02	4.41	1.32	4.61
79	58	22046	103	5.80974	5.3588E+02	+/-	1.722E+01	3.21	0.03	3.21
80	59	22047	103	3.30398	9.9954E+02	+/-	2.794E+01	2.80	0.01	2.80
81	60	22048	103	8.05676	1.3640E+01	+/-	7.644E-01	5.60	0.07	5.60
82	61	23051	107	9.70653	1.0932E+00	+/-	3.478E-02	3.18	0.14	3.18
83	62	23051	21048g	9.70653	1.0932E+00	+/-	3.478E-02	3.18	0.14	3.18
84	63	24000	24051g	14.5985	1.8085E+00	+/-	5.041E-02	2.67	0.80	2.79
85	64	25055	1	1.085-3	4.8919E+06	+/-	9.338E+02	0.00	0.02	0.02
86	65	25055	2	1.141-3	4.4827E+06	+/-	9.200E+02	0.00	0.02	0.02
87	66	25055	16	12.829	1.1253E+01	+/-	2.786E-01	2.44	0.41	2.48
88	67	25055	102	8.392-8	3.1616E+05	+/-	5.506E+03	1.74	0.01	1.74
89	68	26000	24051g	0	2.4968E+00	+/-	9.549E-02	3.82	0.05	3.82
90	69	26000	25054g	0	2.3131E+02	+/-	7.494E+00	3.24	0.02	3.24
91	70	26000	25056g	0	4.5589E+01	+/-	1.231E+00	2.70	0.06	2.70
92	71	26000	26053g	16.4874	4.3144E-03	+/-	2.217E-04	4.90	1.56	5.14
93	72	26054	1	8.984-3	1.5012E+06	+/-	2.134E+02	0.00	0.01	0.01
94	73	26054	2	9.067-3	1.4227E+06	+/-	2.127E+02	0.00	0.01	0.01
95	74	26054	16	16.4874	7.3814E-02	+/-	3.793E-03	4.90	1.56	5.14
96	75	26054	103	4.1811	3.9575E+03	+/-	1.282E+02	3.24	0.02	3.24
97	76	26054	107	6.92487	4.2717E+01	+/-	1.634E+00	3.82	0.05	3.82
98	77	26056	103	7.31033	4.9684E+01	+/-	1.341E+00	2.70	0.06	2.70
99	78	26058	1	0.01168	1.7815E+06	+/-	1.078E+02	0.00	0.01	0.01
100	79	26058	2	0.01058	1.6019E+06	+/-	1.048E+02	0.00	0.01	0.01
101	80	26058	102	8.224-8	3.0967E+04	+/-	1.500E+03	4.84	0.01	4.84
102	81	27059	1	1.320-4	8.8778E+06	+/-	3.467E+03	0.00	0.04	0.04
103	82	27059	2	1.328-4	7.5518E+06	+/-	3.183E+03	0.00	0.04	0.04
104	83	27059	16	13.0036	9.6200E+00	+/-	1.596E-01	1.60	0.44	1.66
105	84	27059	17	19.8317	6.2712E-05	+/-	2.921E-05	43.61	16.36	46.58
106	85	27059	102	4.939-7	1.2803E+06	+/-	9.300E+03	0.73	0.02	0.73
107	86	27059	103	5.63667	6.6719E+01	+/-	2.472E+00	3.71	0.03	3.71
108	87	27059	107	8.07847	7.0967E+00	+/-	2.946E-01	4.15	0.07	4.15
109	88	27059	25056g	8.07847	7.0967E+00	+/-	2.946E-01	4.15	0.07	4.15
110	89	28000	27058g	0	3.8059E+03	+/-	6.592E+01	1.73	0.02	1.73
111	90	28000	27060g	0	2.6224E+01	+/-	5.314E-01	2.03	0.04	2.03
112	91	28000	28057g	14.8618	1.2802E-01	+/-	2.011E-03	1.30	0.88	1.57
113	92	28058	16	14.8618	1.8805E-01	+/-	2.953E-03	1.30	0.88	1.57
114	93	28058	103	3.89235	5.5905E+03	+/-	9.684E+01	1.73	0.02	1.73
115	94	28060	103	6.75118	9.9992E+01	+/-	2.026E+00	2.03	0.04	2.03
116	95	29000	27060g	6.95495	1.6834E+01	+/-	5.229E-01	3.11	0.05	3.11
117	96	29000	29062g	13.7377	3.1544E+00	+/-	4.861E-02	1.43	0.58	1.54
118	97	29000	29064g	1.129-7	8.3434E+04	+/-	3.197E+03	3.83	0.02	3.83
119	98	29063	1	5.291-3	1.6562E+06	+/-	1.378E+02	0.00	0.01	0.01
120	99	29063	2	5.722-3	1.4847E+06	+/-	1.300E+02	0.00	0.01	0.01
121	100	29063	16	13.7377	4.5617E+00	+/-	7.030E-02	1.43	0.58	1.54
122	101	29063	102	1.129-7	1.2065E+05	+/-	4.644E+03	3.85	0.02	3.85
123	102	29063	107	6.95495	2.4344E+01	+/-	7.563E-01	3.11	0.05	3.11
124	103	29065	16	12.5862	1.5719E+01	+/-	3.098E-01	1.93	0.38	1.97
125	104	30000	29064g	3.95453	9.6588E+02	+/-	1.702E+01	1.76	0.02	1.76
126	105	30000	29067g	1.310-3	4.3392E+00	+/-	5.915E-01	13.63	0.02	13.63
127	106	30064	103	3.95453	1.9644E+03	+/-	3.461E+01	1.76	0.02	1.76
128	107	30067	103	1.288-3	1.0717E+02	+/-	1.464E+01	13.66	0.02	13.66
129	108	30068	1	5.227-4	2.5612E+06	+/-	8.607E+02	0.00	0.03	0.03
130	109	30068	2	5.226-4	2.4724E+06	+/-	8.446E+02	0.00	0.03	0.03
131	110	30068	29067g	15.2686	5.5117E-02	+/-	8.438E-03	15.27	1.02	15.31
132	111	33075	16	12.8309	1.4740E+01	+/-	8.842E-01	5.98	0.42	6.00
133	112	39089	16	13.8032	7.9241E+00	+/-	1.126E-01	1.29	0.60	1.42
134	113	40000	40089g	14.3107	2.5095E+00	+/-	2.943E-02	0.92	0.72	1.17
135	114	40090	16	14.3107	4.8774E+00	+/-	5.720E-02	0.92	0.72	1.17
136	115	41093	1	0.0273	1.8613E+06	+/-	7.769E+01	0.00	0.00	0.00

137	116	41093	2	0.027	1.6737E+06	+/-	6.941E+01	0.00	0.00	0.00
138	117	41093	102	3.748-4	1.0081E+05	+/-	2.761E+03	2.74	0.01	2.74
139	118	41093	41093m	2.19569	9.7881E+03	+/-	2.750E+02	2.81	0.01	2.81
140	119	41093	41092m	11.1932	2.0394E+01	+/-	1.814E-01	0.86	0.24	0.89
141	120	41093	41094g	3.748-4	2.5177E+04	+/-	6.894E+02	2.74	0.01	2.74
142	121	41093	41094m	3.748-4	7.5636E+04	+/-	2.071E+03	2.74	0.01	2.74
143	122	42000	41092m	5.10075	4.7242E+01	+/-	1.916E+00	4.06	0.02	4.06
144	123	42092	41092m	5.10075	3.2513E+02	+/-	1.319E+01	4.06	0.02	4.06
145	124	45103	45103m	1.73416	5.4974E+04	+/-	2.216E+03	4.03	0.01	4.03
146	125	47109	1	5.168-6	1.4485E+07	+/-	6.297E+03	0.00	0.04	0.04
147	126	47109	2	1.302-4	2.3538E+06	+/-	5.443E+02	0.00	0.02	0.02
148	127	47109	47110n	5.132-6	5.5724E+05	+/-	3.619E+04	6.49	0.05	6.49
149	128	48000	1	1.050-7	8.7291E+07	+/-	9.910E+03	0.00	0.01	0.01
150	129	48000	2	1.465-3	1.9638E+06	+/-	1.192E+02	0.00	0.01	0.01
151	130	48000	101	1.026-7	8.5218E+07	+/-	9.856E+03	0.00	0.01	0.01
152	131	49000	49114m	4.774-6	8.0034E+04	+/-	6.135E+03	7.66	0.03	7.66
153	132	49113	1	1.931-5	4.2973E+06	+/-	8.159E+02	0.00	0.02	0.02
154	133	49113	2	0.01086	1.4917E+06	+/-	8.516E+01	0.00	0.01	0.01
155	134	49113	102	4.734-6	2.7539E+06	+/-	7.664E+02	0.00	0.03	0.03
156	135	49113	49113m	2.35174	1.0063E+04	+/-	1.235E+02	1.23	0.01	1.23
157	136	49113	49114g	4.688-6	8.8924E+05	+/-	6.885E+04	7.74	0.03	7.74
158	137	49113	49114m	4.766-6	1.8647E+06	+/-	1.430E+05	7.67	0.03	7.67
159	138	49115	1	1.444-6	2.8697E+07	+/-	1.137E+04	0.00	0.04	0.04
160	139	49115	2	2.794-5	2.1760E+06	+/-	4.579E+02	0.00	0.02	0.02
161	140	49115	102	1.438-6	2.6460E+07	+/-	1.092E+04	0.00	0.04	0.04
162	141	49115	49115m	2.28212	1.2371E+04	+/-	2.136E+02	1.73	0.01	1.73
163	142	49115	49114m	11.6932	4.1025E+01	+/-	2.161E+00	5.26	0.28	5.27
164	143	49115	49116g	1.438-6	5.5564E+06	+/-	1.471E+05	2.65	0.04	2.65
165	144	49115	49116m	1.438-6	2.0904E+07	+/-	5.534E+05	2.65	0.04	2.65
166	145	53127	16	11.4578	5.3512E+01	+/-	1.694E+00	3.16	0.26	3.17
167	146	57139	1	3.177-4	2.2732E+06	+/-	1.264E+02	0.00	0.01	0.01
168	147	57139	2	1.193-3	1.9200E+06	+/-	9.099E+01	0.00	0.00	0.00
169	148	57139	102	1.288-7	2.5397E+05	+/-	1.121E+04	4.41	0.02	4.41
170	149	59141	16	11.739	4.9817E+01	+/-	5.793E+00	11.63	0.28	11.63
171	150	64000	1	3.644-8	5.7101E+08	+/-	7.604E+04	0.00	0.01	0.01
172	151	64000	2	1.188-7	4.8146E+06	+/-	3.295E+02	0.00	0.01	0.01
173	152	64000	101	3.624-8	5.6597E+08	+/-	7.576E+04	0.00	0.01	0.01
174	153	69169	16	10.2548	1.7146E+02	+/-	5.755E+00	3.35	0.17	3.36
175	154	69169	17	18.0134	2.4383E-01	+/-	1.767E-02	6.62	2.95	7.25
176	155	73181	1	2.044-5	8.3069E+06	+/-	1.964E+03	0.00	0.02	0.02
177	156	73181	2	3.311-4	2.7563E+06	+/-	3.128E+02	0.00	0.01	0.01
178	157	73181	102	4.449-6	5.2994E+06	+/-	1.866E+05	3.52	0.03	3.52
179	158	74186	1	1.870-5	2.9613E+07	+/-	1.699E+04	0.00	0.06	0.06
180	159	74186	2	1.872-5	2.5027E+07	+/-	1.473E+04	0.00	0.06	0.06
181	160	74186	102	1.848-5	4.3843E+06	+/-	1.484E+05	3.39	0.05	3.39
182	161	79197	1	4.897-6	1.6696E+07	+/-	7.554E+03	0.00	0.05	0.05
183	162	79197	2	8.594-5	3.9482E+06	+/-	8.509E+02	0.00	0.02	0.02
184	163	79197	16	10.4063	1.4985E+02	+/-	2.903E+00	1.93	0.17	1.94
185	164	79197	102	4.852-6	1.2584E+07	+/-	2.284E+05	1.81	0.05	1.81
186	165	80199	80199m	2.52752	1.7776E+04	+/-	6.561E+02	3.69	0.01	3.69
187	166	82204	82204m	4.78765	8.5096E+02	+/-	3.984E+01	4.68	0.02	4.68
188	167	83209	16	9.72227	2.8417E+02	+/-	1.178E+01	4.14	0.14	4.14
189	168	83209	17	17.7428	3.2376E-01	+/-	2.121E-02	6.01	2.61	6.55
190	169	90232	1	2.844-4	4.0609E+06	+/-	4.311E+02	0.00	0.01	0.01
191	170	90232	2	7.902-4	2.9850E+06	+/-	2.381E+02	0.00	0.01	0.01
192	171	90232	18	2.47752	4.9131E+03	+/-	2.851E+02	5.80	0.01	5.80
193	172	90232	102	2.378-5	8.2915E+05	+/-	1.357E+04	1.64	0.03	1.64
194	173	92235	1	9.288-8	1.7117E+07	+/-	1.361E+03	0.00	0.01	0.01
195	174	92235	18	6.513-8	1.1860E+07	+/-	5.116E+04	0.43	0.01	0.43
196	175	92238	1	3.795-5	6.0435E+06	+/-	1.386E+03	0.00	0.02	0.02
197	176	92238	2	1.865-4	3.6765E+06	+/-	5.423E+02	0.00	0.01	0.01
198	177	92238	16	8.06339	6.7599E+02	+/-	3.446E+01	5.10	0.08	5.10
199	178	92238	18	2.35004	1.9841E+04	+/-	2.427E+02	1.22	0.01	1.22
200	179	92238	102	2.025-5	2.0836E+06	+/-	2.283E+04	1.09	0.05	1.10
201	180	93237	1	1.420-6	1.2178E+07	+/-	1.334E+03	0.00	0.01	0.01
202	181	93237	2	7.004-4	2.5511E+06	+/-	1.074E+02	0.00	0.00	0.00
203	182	93237	18	1.45942	1.1676E+05	+/-	2.591E+03	2.22	0.01	2.22
204	183	94239	1	2.171-7	4.0693E+07	+/-	4.742E+03	0.00	0.01	0.01
205	184	94239	2	2.198-3	2.1997E+06	+/-	9.665E+01	0.00	0.00	0.00

206	185	94239	18	1.673-7	2.4941E+07	+/-	3.340E+05	1.34	0.01	1.34
207	186	95241	1	3.152-7	2.9988E+07	+/-	3.746E+03	0.00	0.01	0.01
208	187	95241	2	2.592-3	2.3214E+06	+/-	9.613E+01	0.00	0.00	0.00
209	188	95241	18	1.314-6	2.5924E+05	+/-	4.167E+03	1.61	0.01	1.61
210										
211										