

```

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.       :    9101
15 Spectrum Integral      :    5.090E+03
16 Spectrum average energy [eV] :    1.433E+06
17 Spectrum peak energy [eV] :    2.249E+05
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	0.8701	9.6089E+06	+/- 3.349E+03	0.00	0.03	0.03
20	2	3000	2	0.77666	8.7760E+06	+/- 3.119E+03	0.00	0.04	0.04
21	3	3000	205	0.39831	2.6750E+05	+/- 2.010E+03	0.75	0.05	0.75
22	4	3000	207	0.58118	3.0192E+05	+/- 7.119E+03	2.36	0.05	2.36
23	5	3006	1	0.40445	1.2170E+07	+/- 4.386E+03	0.00	0.04	0.04
24	6	3006	2	0.43445	9.0024E+06	+/- 3.213E+03	0.00	0.04	0.04
25	7	3006	105	0.28296	2.6954E+06	+/- 1.711E+04	0.63	0.04	0.63
26	8	3006	205	0.28296	2.6954E+06	+/- 1.711E+04	0.63	0.04	0.63
27	9	3006	207	0.32667	3.1474E+06	+/- 9.184E+04	2.92	0.04	2.92
28	10	3007	1	0.93449	9.3985E+06	+/- 3.297E+03	0.00	0.04	0.04
29	11	3007	2	0.82035	8.7575E+06	+/- 3.131E+03	0.00	0.04	0.04
30	12	3007	205	5.95	6.8084E+04	+/- 1.660E+03	2.43	0.14	2.44
31	13	3007	207	5.9483	6.8213E+04	+/- 1.660E+03	2.43	0.14	2.43
32	14	5000	1	0.57226	1.4797E+07	+/- 4.404E+03	0.00	0.03	0.03
33	15	5000	2	0.57996	1.4002E+07	+/- 4.178E+03	0.00	0.03	0.03
34	16	5000	101	0.35879	6.9388E+05	+/- 2.409E+02	0.00	0.03	0.03
35	17	5000	205	3.12759	3.4142E+04	+/- 4.505E+03	13.20	0.05	13.20
36	18	5000	207	0.38814	7.3076E+05	+/- 3.198E+04	4.38	0.03	4.38
37	19	5010	1	0.53874	1.6355E+07	+/- 4.864E+03	0.00	0.03	0.03
38	20	5010	2	0.58408	1.2742E+07	+/- 3.798E+03	0.00	0.03	0.03
39	21	5010	101	0.35867	3.4860E+06	+/- 1.211E+03	0.00	0.03	0.03
40	22	5010	107	0.33149	3.3126E+06	+/- 1.627E+05	4.91	0.04	4.91
41	23	5010	205	3.12611	1.7150E+05	+/- 2.264E+04	13.20	0.05	13.20
42	24	5010	207	0.3876	3.6690E+06	+/- 1.607E+05	4.38	0.03	4.38
43	25	5010	800	1.31113	8.7618E+05	+/- 1.551E+05	17.70	0.03	17.70
44	26	5010	801	0.24698	2.4364E+06	+/- 7.386E+04	3.03	0.04	3.03
45	27	5011	1	0.58556	1.4409E+07	+/- 4.326E+03	0.00	0.03	0.03
46	28	5011	2	0.57868	1.4315E+07	+/- 4.310E+03	0.00	0.03	0.03
47	29	5011	205	12.6039	1.8089E+01	+/- 3.051E+00	16.78	1.72	16.87
48	30	5011	207	11.2312	7.8255E+02	+/- 1.096E+02	13.97	0.95	14.00
49	31	9019	16	13.8197	2.4593E+01	+/- 9.878E-01	3.07	2.59	4.02
50	32	11023	1	0.74907	1.7872E+07	+/- 5.623E+03	0.00	0.03	0.03
51	33	11023	2	0.69522	1.6010E+07	+/- 5.178E+03	0.00	0.03	0.03
52	34	11023	16	15.3913	1.1354E+01	+/- 5.694E-01	1.27	4.85	5.01
53	35	11023	102	0.3114	1.9717E+03	+/- 1.292E+02	6.55	0.09	6.55
54	36	12000	11024g	8.12118	3.9229E+03	+/- 3.482E+01	0.83	0.31	0.89
55	37	12024	103	8.12094	4.9656E+03	+/- 4.408E+01	0.83	0.31	0.89
56	38	13027	16	15.879	9.7762E+00	+/- 6.692E-01	3.30	5.99	6.85
57	39	13027	103	5.75717	1.2467E+04	+/- 2.576E+02	2.06	0.13	2.07
58	40	13027	107	8.46072	2.3476E+03	+/- 1.913E+01	0.74	0.34	0.81
59	41	13027	11024g	8.46072	2.3476E+03	+/- 1.913E+01	0.74	0.34	0.81
60	42	13027	13026g	15.7577	8.7910E+00	+/- 5.816E-01	3.55	5.58	6.62
61	43	13027	13026m	17.6621	9.8528E-01	+/- 1.503E-01	8.66	12.55	15.25
62	44	14000	13028g	7.11391	1.6431E+04	+/- 4.143E+02	2.51	0.22	2.52
63	45	14028	103	7.11384	1.7816E+04	+/- 4.493E+02	2.51	0.22	2.52
64	46	14029	13028g	15.6335	1.2094E+01	+/- 8.637E-01	4.60	5.46	7.14

68	47	15031	103	3.64119	1.0916E+05	+/-	3.773E+03	3.46	0.07	3.46
69	48	16000	15032g	3.99345	1.9874E+05	+/-	4.994E+03	2.51	0.07	2.51
70	49	16032	103	3.99345	2.0922E+05	+/-	5.257E+03	2.51	0.07	2.51
71	50	21045	1	0.7834	1.8141E+07	+/-	5.895E+03	0.00	0.03	0.03
72	51	21045	2	0.61018	1.5515E+07	+/-	5.246E+03	0.00	0.03	0.03
73	52	21045	102	0.26782	4.2778E+04	+/-	3.498E+03	8.18	0.05	8.18
74	53	22000	21046g	0	2.9817E+03	+/-	9.395E+01	3.15	0.14	3.15
75	54	22000	21047g	0	4.2115E+03	+/-	1.157E+02	2.75	0.07	2.75
76	55	22000	21048g	0	7.3474E+02	+/-	4.089E+01	5.56	0.31	5.57
77	56	22000	22045g	15.8645	1.3174E+00	+/-	9.514E-02	4.20	5.87	7.22
78	57	22046	16	15.8645	1.5969E+01	+/-	1.153E+00	4.20	5.87	7.22
79	58	22046	103	5.96244	3.6116E+04	+/-	1.139E+03	3.15	0.14	3.15
80	59	22047	103	3.64066	5.6546E+04	+/-	1.556E+03	2.75	0.07	2.75
81	60	22048	103	8.10218	9.9640E+02	+/-	5.547E+01	5.56	0.31	5.57
82	61	23051	107	9.66997	8.0640E+01	+/-	2.637E+00	3.22	0.56	3.27
83	62	23051	21048g	9.66997	8.0640E+01	+/-	2.637E+00	3.22	0.56	3.27
84	63	24000	24051g	14.5305	1.1636E+02	+/-	5.089E+00	2.68	3.46	4.37
85	64	25055	1	0.76275	1.9135E+07	+/-	6.626E+03	0.00	0.03	0.03
86	65	25055	2	0.60627	1.4781E+07	+/-	5.673E+03	0.00	0.04	0.04
87	66	25055	16	12.7177	7.8413E+02	+/-	2.435E+01	2.58	1.73	3.11
88	67	25055	102	0.32773	2.1665E+04	+/-	4.714E+03	21.76	0.09	21.76
89	68	26000	24051g	0	1.5996E+02	+/-	6.143E+00	3.83	0.22	3.84
90	69	26000	25054g	0	1.4104E+04	+/-	4.408E+02	3.12	0.08	3.12
91	70	26000	25056g	0	3.2785E+03	+/-	8.855E+01	2.69	0.24	2.70
92	71	26000	26053g	16.2982	2.6024E-01	+/-	2.451E-02	6.34	6.96	9.42
93	72	26054	1	0.67749	2.0204E+07	+/-	7.530E+03	0.00	0.04	0.04
94	73	26054	2	0.60531	1.8570E+07	+/-	7.204E+03	0.00	0.04	0.04
95	74	26054	16	16.2982	4.4523E+00	+/-	4.194E-01	6.34	6.96	9.42
96	75	26054	103	4.33398	2.4131E+05	+/-	7.541E+03	3.12	0.08	3.12
97	76	26054	107	7.25126	2.7367E+03	+/-	1.051E+02	3.83	0.22	3.84
98	77	26056	103	7.39665	3.5730E+03	+/-	9.651E+01	2.69	0.24	2.70
99	78	26058	1	0.63858	2.8155E+07	+/-	8.997E+03	0.00	0.03	0.03
100	79	26058	2	0.45894	2.1166E+07	+/-	7.494E+03	0.00	0.04	0.04
101	80	26058	102	0.37563	1.5667E+04	+/-	1.711E+03	10.92	0.05	10.92
102	81	27059	1	0.68434	2.0901E+07	+/-	6.534E+03	0.00	0.03	0.03
103	82	27059	2	0.56632	1.8511E+07	+/-	6.005E+03	0.00	0.03	0.03
104	83	27059	16	12.9099	6.6565E+02	+/-	1.683E+01	1.71	1.86	2.53
105	84	27059	17	21.94	1.5804E-01	+/-	6.702E-02	7.96	41.65	42.41
106	85	27059	102	0.43178	3.4695E+04	+/-	8.624E+02	2.49	0.05	2.49
107	86	27059	103	5.80263	4.4693E+03	+/-	1.592E+02	3.56	0.13	3.56
108	87	27059	107	8.12996	5.1764E+02	+/-	1.995E+01	3.84	0.30	3.85
109	88	27059	25056g	8.12996	5.1764E+02	+/-	1.995E+01	3.84	0.30	3.85
110	89	28000	27058g	0	2.2615E+05	+/-	3.936E+03	1.74	0.07	1.74
111	90	28000	27060g	0	1.8372E+03	+/-	3.519E+01	1.91	0.19	1.92
112	91	28000	28057g	14.7861	8.2011E+00	+/-	3.326E-01	1.29	3.84	4.06
113	92	28058	16	14.7861	1.2047E+01	+/-	4.886E-01	1.29	3.84	4.06
114	93	28058	103	4.07591	3.3220E+05	+/-	5.782E+03	1.74	0.07	1.74
115	94	28060	103	6.88304	7.0053E+03	+/-	1.342E+02	1.91	0.19	1.92
116	95	29000	27060g	7.08169	1.1871E+03	+/-	3.639E+01	3.06	0.21	3.07
117	96	29000	29062g	13.6191	2.1032E+02	+/-	6.008E+00	1.48	2.44	2.86
118	97	29000	29064g	0.45563	5.0437E+04	+/-	5.323E+03	10.55	0.06	10.55
119	98	29063	1	0.65884	2.0769E+07	+/-	6.128E+03	0.00	0.03	0.03
120	99	29063	2	0.53684	1.8105E+07	+/-	5.512E+03	0.00	0.03	0.03
121	100	29063	16	13.6191	3.0414E+02	+/-	8.688E+00	1.48	2.44	2.86
122	101	29063	102	0.45049	7.2447E+04	+/-	7.698E+03	10.63	0.06	10.63
123	102	29063	107	7.0817	1.7167E+03	+/-	5.263E+01	3.06	0.21	3.07
124	103	29065	16	12.4821	1.1038E+03	+/-	2.808E+01	1.99	1.58	2.54
125	104	30000	29064g	4.0691	5.8786E+04	+/-	1.012E+03	1.72	0.08	1.72
126	105	30000	29067g	4.49885	1.2369E+02	+/-	6.746E+00	5.45	0.10	5.45
127	106	30064	103	4.0691	1.1956E+05	+/-	2.058E+03	1.72	0.08	1.72
128	107	30067	103	4.48397	3.0453E+03	+/-	1.670E+02	5.48	0.09	5.48
129	108	30068	1	0.6132	2.3733E+07	+/-	7.156E+03	0.00	0.03	0.03
130	109	30068	2	0.53029	2.1497E+07	+/-	6.700E+03	0.00	0.03	0.03
131	110	30068	29067g	15.2175	3.5900E+00	+/-	5.534E-01	14.61	4.93	15.42
132	111	33075	16	12.7197	1.0270E+03	+/-	6.687E+01	6.27	1.75	6.51
133	112	39089	16	13.7173	5.2577E+02	+/-	1.517E+01	1.34	2.55	2.89
134	113	40000	40089g	14.264	1.6296E+02	+/-	5.327E+00	0.93	3.13	3.27
135	114	40090	16	14.2635	3.1664E+02	+/-	1.035E+01	0.93	3.13	3.27
136	115	41093	1	0.6327	3.4261E+07	+/-	9.993E+03	0.00	0.03	0.03

137	116	41093	2	0.53252	2.9771E+07	+/-	9.083E+03	0.00	0.03	0.03
138	117	41093	102	0.37606	2.0111E+05	+/-	3.490E+03	1.74	0.04	1.74
139	118	41093	41093m	2.39324	4.8946E+05	+/-	1.296E+04	2.65	0.04	2.65
140	119	41093	41092m	11.1645	1.4906E+03	+/-	1.955E+01	0.87	0.98	1.31
141	120	41093	41094g	0.37606	5.0225E+04	+/-	8.716E+02	1.74	0.04	1.74
142	121	41093	41094m	0.37606	1.5089E+05	+/-	2.619E+03	1.74	0.04	1.74
143	122	42000	41092m	5.27761	3.0560E+03	+/-	1.149E+02	3.76	0.11	3.76
144	123	42092	41092m	5.27761	2.1032E+04	+/-	7.908E+02	3.76	0.11	3.76
145	124	45103	45103m	1.90115	2.6735E+06	+/-	1.070E+05	4.00	0.04	4.00
146	125	47109	1	0.70765	3.2836E+07	+/-	9.499E+03	0.00	0.03	0.03
147	126	47109	2	0.5226	2.3918E+07	+/-	7.202E+03	0.00	0.03	0.03
148	127	47109	47110n	0.38247	7.4267E+04	+/-	5.204E+03	7.01	0.03	7.01
149	128	48000	1	0.74659	3.2811E+07	+/-	9.498E+03	0.00	0.03	0.03
150	129	48000	2	0.60273	2.7072E+07	+/-	8.031E+03	0.00	0.03	0.03
151	130	48000	101	0.44917	4.3501E+05	+/-	1.397E+02	0.00	0.03	0.03
152	131	49000	49114m	0.72014	4.9244E+04	+/-	1.279E+03	2.60	0.07	2.60
153	132	49113	1	0.81702	2.9801E+07	+/-	8.636E+03	0.00	0.03	0.03
154	133	49113	2	0.71886	2.5610E+07	+/-	7.553E+03	0.00	0.03	0.03
155	134	49113	102	0.64244	1.3579E+06	+/-	4.320E+02	0.00	0.03	0.03
156	135	49113	49113m	2.54223	5.0734E+05	+/-	6.082E+03	1.20	0.05	1.20
157	136	49113	49114g	0.58651	2.7610E+05	+/-	7.457E+03	2.70	0.03	2.70
158	137	49113	49114m	0.65667	1.0818E+06	+/-	2.960E+04	2.74	0.03	2.74
159	138	49115	1	0.81796	2.9782E+07	+/-	8.631E+03	0.00	0.03	0.03
160	139	49115	2	0.71282	2.5664E+07	+/-	7.566E+03	0.00	0.03	0.03
161	140	49115	102	0.58369	1.0011E+06	+/-	3.189E+02	0.00	0.03	0.03
162	141	49115	49115m	2.45798	6.2051E+05	+/-	1.045E+04	1.68	0.05	1.68
163	142	49115	49114m	11.6298	2.9617E+03	+/-	1.641E+02	5.42	1.15	5.54
164	143	49115	49116g	0.54349	1.9933E+05	+/-	4.283E+03	2.15	0.03	2.15
165	144	49115	49116m	0.59431	8.0173E+05	+/-	1.741E+04	2.17	0.03	2.17
166	145	53127	16	11.4143	3.8843E+03	+/-	1.317E+02	3.22	1.07	3.39
167	146	57139	1	0.95874	2.9957E+07	+/-	8.784E+03	0.00	0.03	0.03
168	147	57139	2	0.81222	2.5117E+07	+/-	7.329E+03	0.00	0.03	0.03
169	148	57139	102	0.63548	4.0375E+04	+/-	2.043E+03	5.06	0.03	5.06
170	149	59141	16	11.6706	3.5911E+03	+/-	4.304E+02	11.93	1.18	11.99
171	150	64000	1	0.82817	3.6007E+07	+/-	1.041E+04	0.00	0.03	0.03
172	151	64000	2	0.63107	2.4856E+07	+/-	7.284E+03	0.00	0.03	0.03
173	152	64000	101	0.37794	7.0985E+05	+/-	2.635E+02	0.00	0.04	0.04
174	153	69169	16	10.2226	1.2700E+04	+/-	4.393E+02	3.39	0.69	3.46
175	154	69169	17	18.945	1.6163E+01	+/-	2.712E+00	5.39	15.89	16.78
176	155	73181	1	0.87666	3.6645E+07	+/-	1.062E+04	0.00	0.03	0.03
177	156	73181	2	0.7439	2.5733E+07	+/-	7.464E+03	0.00	0.03	0.03
178	157	73181	102	0.36844	6.4161E+05	+/-	3.904E+04	6.08	0.04	6.09
179	158	74186	1	0.83349	3.6934E+07	+/-	1.070E+04	0.00	0.03	0.03
180	159	74186	2	0.60717	2.7218E+07	+/-	8.006E+03	0.00	0.03	0.03
181	160	74186	102	0.52242	2.2080E+05	+/-	4.994E+03	2.26	0.03	2.26
182	161	79197	1	0.82262	3.5214E+07	+/-	1.024E+04	0.00	0.03	0.03
183	162	79197	2	0.62067	2.6814E+07	+/-	7.887E+03	0.00	0.03	0.03
184	163	79197	16	10.3633	1.1072E+04	+/-	2.309E+02	1.96	0.72	2.09
185	164	79197	102	0.34541	5.9884E+05	+/-	2.832E+03	0.47	0.04	0.47
186	165	80199	80199m	2.84973	9.2880E+05	+/-	3.343E+04	3.60	0.05	3.60
187	166	82204	82204m	4.92578	5.5168E+04	+/-	2.554E+03	4.63	0.10	4.63
188	167	83209	16	9.70338	2.1171E+04	+/-	8.925E+02	4.18	0.56	4.22
189	168	83209	17	18.4218	2.1499E+01	+/-	3.239E+00	4.62	14.34	15.07
190	169	83209	37	22.75	7.3310E-04	+/-	9.613E-04	84.81	100.00	131.12
191	170	90232	1	0.73644	4.2323E+07	+/-	1.223E+04	0.00	0.03	0.03
192	171	90232	2	0.52196	3.0246E+07	+/-	9.027E+03	0.00	0.03	0.03
193	172	90232	18	2.7955	2.5510E+05	+/-	1.477E+04	5.79	0.05	5.79
194	173	90232	102	0.55309	6.2537E+05	+/-	9.761E+03	1.56	0.03	1.56
195	174	92235	1	0.74646	4.2100E+07	+/-	1.216E+04	0.00	0.03	0.03
196	175	92235	18	0.90656	6.3314E+06	+/-	7.628E+04	1.20	0.03	1.20
197	176	92238	1	0.75472	4.2322E+07	+/-	1.222E+04	0.00	0.03	0.03
198	177	92238	2	0.54536	2.9616E+07	+/-	8.792E+03	0.00	0.03	0.03
199	178	92238	16	8.0822	5.0210E+04	+/-	2.564E+03	5.10	0.32	5.11
200	179	92238	18	2.57634	1.0031E+06	+/-	1.229E+04	1.22	0.05	1.22
201	180	92238	102	0.54947	4.7093E+05	+/-	8.621E+03	1.83	0.03	1.83
202	181	93237	1	0.75048	4.1143E+07	+/-	1.189E+04	0.00	0.03	0.03
203	182	93237	2	0.54503	2.6132E+07	+/-	7.752E+03	0.00	0.03	0.03
204	183	93237	18	1.61379	5.2793E+06	+/-	9.230E+04	1.75	0.04	1.75
205	184	94239	1	0.73944	4.2487E+07	+/-	1.227E+04	0.00	0.03	0.03

206	185	94239	2	0.5589	2.6000E+07	+/-	7.685E+03	0.00	0.03	0.03
207	186	94239	18	1.05077	8.7636E+06	+/-	1.092E+05	1.25	0.03	1.25
208	187	95241	1	0.71303	4.3198E+07	+/-	1.247E+04	0.00	0.03	0.03
209	188	95241	2	0.53856	2.9433E+07	+/-	8.734E+03	0.00	0.03	0.03
210	189	95241	18	1.89226	4.9969E+06	+/-	1.339E+05	2.68	0.04	2.68
211										
212										