```
 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.         :   9042
 Spectrum Integral            :  1.684E+02
 Spectrum average energy [eV] :  8.484E+05
 Spectrum peak energy    [eV] :  1.175E+00
 Reaction rate RR = spectrum integral
```

No.	Mat.	MT	E(50%) [MeV]	<RR> +/- Unc [mb]	Unc. x.s. [%]	Unc. Sp. [%]	Unc. Total [%]
1	3000	1	0.24986	3.2130E+05 +/- 1.474E+03	0.00	0.46	0.46
2	3000	2	0.28604	2.4316E+05 +/- 1.106E+03	0.00	0.45	0.45
3	3000	205	2.096-5	6.7062E+04 +/- 8.036E+02	0.45	1.11	1.20
4	3000	207	2.178-5	6.7780E+04 +/- 8.148E+02	0.49	1.10	1.20
5	3006	1	4.996-5	1.1036E+06 +/- 1.003E+04	0.00	0.91	0.91
6	3006	2	0.28992	2.2647E+05 +/- 1.115E+03	0.00	0.49	0.49
7	3006	105	1.979-5	8.6820E+05 +/- 1.058E+04	0.46	1.13	1.22
8	3006	205	1.979-5	8.6820E+05 +/- 1.058E+04	0.46	1.13	1.22
9	3006	207	2.042-5	8.7667E+05 +/- 1.071E+04	0.49	1.12	1.22
10	3007	1	0.31129	2.5705E+05 +/- 1.152E+03	0.00	0.45	0.45
11	3007	2	0.28566	2.4453E+05 +/- 1.112E+03	0.00	0.45	0.45
12	3007	205	5.91336	1.2616E+03 +/- 4.094E+01	2.45	2.13	3.25
13	3007	207	5.82955	1.3430E+03 +/- 4.104E+01	2.31	2.01	3.06
14	5000	1	2.069-4	1.2477E+06 +/- 8.968E+03	0.00	0.72	0.72
15	5000	2	0.06655	5.7086E+05 +/- 2.124E+03	0.00	0.37	0.37
16	5000	101	1.696-5	6.7449E+05 +/- 7.977E+03	0.00	1.18	1.18
17	5000	205	2.9826	6.5985E+02 +/- 8.811E+01	13.33	0.78	13.35
18	5000	207	1.701-5	6.7512E+05 +/- 9.379E+03	0.73	1.18	1.39
19	5010	1	2.393-5	3.7923E+06 +/- 4.051E+04	0.00	1.07	1.07
20	5010	2	0.24051	3.9819E+05 +/- 1.476E+03	0.00	0.37	0.37
21	5010	101	1.696-5	3.3893E+06 +/- 4.009E+04	0.00	1.18	1.18
22	5010	107	1.692-5	3.3856E+06 +/- 4.713E+04	0.73	1.18	1.39
23	5010	205	2.98069	3.3142E+03 +/- 4.428E+02	13.34	0.78	13.36
24	5010	207	1.701-5	3.3925E+06 +/- 4.713E+04	0.73	1.18	1.39
25	5010	800	2.051-5	2.2643E+05 +/- 4.352E+03	1.57	1.12	1.92
26	5010	801	1.673-5	3.1592E+06 +/- 4.488E+04	0.78	1.19	1.42
27	5011	1	0.05157	6.1556E+05 +/- 2.312E+03	0.00	0.38	0.38
28	5011	2	0.05071	6.1376E+05 +/- 2.310E+03	0.00	0.38	0.38
29	5011	205	12.5473	4.0359E-01 +/- 1.141E-01	16.54	22.93	28.28
30	5011	207	11.2936	1.7755E+01 +/- 3.390E+00	13.87	13.12	19.09
31	9019	16	13.7304	5.1438E-01 +/- 1.990E-01	3.05	38.56	38.68
32	11023	1	3.174-3	1.1908E+06 +/- 1.592E+04	0.00	1.34	1.34
33	11023	2	3.127-3	1.1532E+06 +/- 1.589E+04	0.00	1.38	1.38
34	11023	16	16.4347	2.2806E-01 +/- 1.771E-01	1.76	77.63	77.65
35	11023	102	2.321-3	1.0725E+03 +/- 4.284E+01	3.73	1.42	3.99
36	12000	11024g	8.16112	7.5710E+01 +/- 3.622E+00	0.82	4.71	4.78
37	12024	103	8.16088	9.5830E+01 +/- 4.584E+00	0.82	4.71	4.78
38	13027	16	16.4468	1.9880E-01 +/- 1.873E-01	5.36	94.07	94.23
39	13027	103	5.73973	2.3150E+02 +/- 6.608E+00	2.05	1.99	2.85
40	13027	107	8.63001	4.5937E+01 +/- 2.422E+00	0.73	5.22	5.27
41	13027	11024g	8.63001	4.5937E+01 +/- 2.422E+00	0.73	5.22	5.27
42	13027	13026g	16.4465	1.8074E-01 +/- 1.693E-01	5.72	93.49	93.67
43	13027	13026m	16.45	1.8066E-02 +/- 1.820E-02	12.43	99.98	100.75
44	14000	13028g	7.16977	3.0353E+02 +/- 1.263E+01	2.51	3.32	4.16
45	14028	103	7.16967	3.2911E+02 +/- 1.369E+01	2.51	3.32	4.16
46	14029	13028g	16.426	2.6063E-01 +/- 1.799E-01	6.98	68.66	69.01

68	47	15031	103	3.57864	2.1125E+03	+/- 7.624E+01	3.48	0.97	3.61
69	48	16000	15032g	3.96335	3.8115E+03	+/- 1.044E+02	2.52	1.07	2.74
70	49	16032	103	3.96334	4.0125E+03	+/- 1.099E+02	2.52	1.07	2.74
71	50	21045	1	4.596-3	1.5465E+06	+/- 1.409E+04	0.00	0.91	0.91
72	51	21045	2	4.499-3	1.4718E+06	+/- 1.396E+04	0.00	0.95	0.95
73	52	21045	102	1.803-5	2.3750E+04	+/- 1.317E+03	5.42	1.19	5.55
74	53	22000	21046g	0	5.5604E+01	+/- 2.069E+00	3.09	2.07	3.72
75	54	22000	21047g	0	8.1807E+01	+/- 2.386E+00	2.76	0.95	2.92
76	55	22000	21048g	0	1.4241E+01	+/- 1.027E+00	5.43	4.74	7.21
77	56	22000	22045g	16.4477	2.7484E-02	+/- 2.632E-02	5.32	95.62	95.76
78	57	22046	16	16.4477	3.3314E-01	+/- 3.190E-01	5.32	95.62	95.76
79	58	22046	103	5.92772	6.7344E+02	+/- 2.507E+01	3.10	2.07	3.72
80	59	22047	103	3.55841	1.0983E+03	+/- 3.205E+01	2.76	0.94	2.92
81	60	22048	103	8.20905	1.9312E+01	+/- 1.392E+00	5.43	4.74	7.21
82	61	23051	107	9.96424	1.6780E+00	+/- 1.475E-01	3.21	8.19	8.79
83	62	23051	21048g	9.96424	1.6780E+00	+/- 1.475E-01	3.21	8.19	8.79
84	63	24000	24051g	13.7822	2.4502E+00	+/- 1.239E+00	2.52	50.50	50.56
85	64	25055	1	4.165-4	4.7753E+06	+/- 9.047E+04	0.00	1.89	1.89
86	65	25055	2	4.049-4	4.6274E+06	+/- 8.907E+04	0.00	1.92	1.92
87	66	25055	16	12.8272	1.7370E+01	+/- 4.040E+00	2.98	23.07	23.26
88	67	25055	102	3.369-4	6.3533E+04	+/- 3.283E+03	4.61	2.33	5.17
89	68	26000	24051g	0	3.0251E+00	+/- 1.545E-01	3.83	3.38	5.11
90	69	26000	25054g	0	2.6737E+02	+/- 8.989E+00	3.15	1.18	3.36
91	70	26000	25056g	0	6.1766E+01	+/- 2.776E+00	2.62	3.65	4.49
92	71	26000	26053g	16.4493	6.2750E-03	+/- 6.203E-03	5.58	98.69	98.85
93	72	26054	1	9.094-3	1.2414E+06	+/- 1.676E+04	0.00	1.35	1.35
94	73	26054	2	8.904-3	1.2057E+06	+/- 1.672E+04	0.00	1.39	1.39
95	74	26054	16	16.4493	1.0736E-01	+/- 1.061E-01	5.58	98.69	98.85
96	75	26054	103	4.30719	4.5743E+03	+/- 1.538E+02	3.15	1.18	3.36
97	76	26054	107	7.39745	5.1756E+01	+/- 2.643E+00	3.83	3.38	5.11
98	77	26056	103	7.55917	6.7314E+01	+/- 3.026E+00	2.62	3.65	4.49
99	78	26058	1	0.09016	1.1168E+06	+/- 6.583E+03	0.00	0.59	0.59
100	79	26058	2	0.04797	9.7738E+05	+/- 6.388E+03	0.00	0.65	0.65
101	80	26058	102	3.474-4	6.0560E+03	+/- 3.865E+02	5.34	3.50	6.38
102	81	27059	1	1.332-4	5.7257E+06	+/- 2.111E+05	0.00	3.69	3.69
103	82	27059	2	1.333-4	5.2816E+06	+/- 1.938E+05	0.00	3.67	3.67
104	83	27059	16	12.8959	1.4394E+01	+/- 3.661E+00	2.63	25.29	25.43
105	84	27059	102	1.308-4	3.9713E+05	+/- 1.757E+04	0.77	4.36	4.42
106	85	27059	103	5.78431	8.3848E+01	+/- 3.436E+00	3.56	2.03	4.10
107	86	27059	107	8.22314	1.0024E+01	+/- 5.993E-01	3.74	4.67	5.98
108	87	27059	25056g	8.22314	1.0024E+01	+/- 5.993E-01	3.74	4.67	5.98
109	88	28000	27058g	0	4.3153E+03	+/- 8.799E+01	1.73	1.08	2.04
110	89	28000	27060g	0	3.4568E+01	+/- 1.221E+00	1.91	2.97	3.53
111	90	28000	28057g	16.4041	1.6941E-01	+/- 9.614E-02	1.60	56.73	56.75
112	91	28058	16	16.4041	2.4885E-01	+/- 1.412E-01	1.60	56.73	56.75
113	92	28058	103	4.04716	6.3388E+03	+/- 1.292E+02	1.73	1.08	2.04
114	93	28060	103	6.9443	1.3181E+02	+/- 4.654E+00	1.91	2.97	3.53
115	94	29000	27060g	7.16765	2.2416E+01	+/- 9.869E-01	3.03	3.20	4.40
116	95	29000	29062g	13.7156	4.3544E+00	+/- 1.552E+00	1.52	35.61	35.64
117	96	29000	29064g	5.920-4	1.9749E+04	+/- 1.242E+03	4.54	4.35	6.29
118	97	29063	1	0.01947	1.0715E+06	+/- 8.894E+03	0.00	0.83	0.83
119	98	29063	2	0.01627	9.9169E+05	+/- 8.425E+03	0.00	0.85	0.85
120	99	29063	16	13.7156	6.2970E+00	+/- 2.244E+00	1.52	35.61	35.64
121	100	29063	102	5.920-4	2.8549E+04	+/- 1.832E+03	4.72	4.35	6.42
122	101	29063	107	7.16765	3.2416E+01	+/- 1.427E+00	3.03	3.20	4.40
123	102	29065	16	12.1525	2.4865E+01	+/- 5.250E+00	2.04	21.01	21.11
124	103	30000	29064g	4.06505	1.1118E+03	+/- 2.286E+01	1.72	1.13	2.06
125	104	30000	29067g	3.39051	3.3224E+00	+/- 2.793E-01	8.26	1.58	8.41
126	105	30064	103	4.06505	2.2611E+03	+/- 4.650E+01	1.72	1.13	2.06
127	106	30067	103	3.37364	8.1919E+01	+/- 6.907E+00	8.29	1.54	8.43
128	107	30068	1	5.396-4	1.7996E+06	+/- 5.603E+04	0.00	3.11	3.11
129	108	30068	2	5.367-4	1.7365E+06	+/- 5.498E+04	0.00	3.17	3.17
130	109	30068	29067g	16.4179	7.2074E-02	+/- 4.661E-02	15.46	62.79	64.67
131	110	33075	16	12.8315	2.2619E+01	+/- 5.520E+00	6.91	23.41	24.41
132	111	39089	16	13.7237	1.0877E+01	+/- 4.039E+00	1.32	37.11	37.13
133	112	40000	40089g	13.7582	3.5061E+00	+/- 1.565E+00	1.00	44.61	44.62
134	113	40090	16	13.7582	6.8145E+00	+/- 3.041E+00	1.00	44.61	44.62
135	114	41093	1	0.12499	1.2527E+06	+/- 4.888E+03	0.00	0.39	0.39
136	115	41093	2	0.11187	1.1039E+06	+/- 4.302E+03	0.00	0.39	0.39

137	116	41093	102	1.020-3	6.3945E+04	+/-	2.296E+03	3.24	1.56	3.59
138	117	41093	41093m	2.35437	9.6624E+03	+/-	2.672E+02	2.69	0.65	2.77
139	118	41093	41092m	11.2195	3.4807E+01	+/-	4.596E+00	0.91	13.17	13.20
140	119	41093	41094g	1.020-3	1.5969E+04	+/-	5.734E+02	3.24	1.56	3.59
141	120	41093	41094m	1.020-3	4.7975E+04	+/-	1.722E+03	3.24	1.56	3.59
142	121	42000	41092m	5.24008	5.7281E+01	+/-	2.374E+00	3.82	1.61	4.14
143	122	42092	41092m	5.24008	3.9423E+02	+/-	1.634E+01	3.82	1.61	4.14
144	123	45103	45103m	1.92472	5.2319E+04	+/-	2.114E+03	4.00	0.57	4.04
145	124	47109	1	5.298-6	5.2513E+06	+/-	3.059E+05	0.00	5.82	5.82
146	125	47109	2	3.355-3	1.3727E+06	+/-	2.666E+04	0.00	1.94	1.94
147	126	47109	47110n	5.196-6	1.7394E+05	+/-	1.761E+04	6.82	7.48	10.13
148	127	48000	1	0.01968	1.5123E+06	+/-	3.339E+04	0.00	2.21	2.21
149	128	48000	2	0.06021	1.1197E+06	+/-	6.466E+03	0.00	0.58	0.58
150	129	48000	101	6.130-7	2.8840E+05	+/-	3.219E+04	0.00	11.16	11.16
151	130	49000	49114m	2.451-5	2.6964E+04	+/-	2.339E+03	8.01	3.32	8.67
152	131	49113	1	6.946-4	2.0044E+06	+/-	3.419E+04	0.00	1.71	1.71
153	132	49113	2	0.06927	1.0289E+06	+/-	4.984E+03	0.00	0.48	0.48
154	133	49113	102	2.445-5	9.2179E+05	+/-	3.093E+04	0.00	3.36	3.36
155	134	49113	49113m	2.47635	1.0097E+04	+/-	1.401E+02	1.20	0.70	1.39
156	135	49113	49114g	2.435-5	2.9482E+05	+/-	2.624E+04	8.22	3.41	8.90
157	136	49113	49114m	2.449-5	6.2698E+05	+/-	5.452E+04	8.03	3.33	8.70
158	137	49115	1	1.546-6	3.8130E+06	+/-	2.633E+05	0.00	6.90	6.90
159	138	49115	2	0.07344	1.0222E+06	+/-	1.119E+04	0.00	1.09	1.09
160	139	49115	102	1.481-6	2.7290E+06	+/-	2.526E+05	0.00	9.26	9.26
161	140	49115	49115m	2.40707	1.2330E+04	+/-	2.250E+02	1.69	0.68	1.83
162	141	49115	49114m	11.425	6.9160E+01	+/-	1.123E+01	5.65	15.22	16.24
163	142	49115	49116g	1.481-6	5.7288E+05	+/-	5.629E+04	3.29	9.26	9.83
164	143	49115	49116m	1.481-6	2.1561E+06	+/-	2.118E+05	3.28	9.26	9.82
165	144	53127	16	11.3457	9.1238E+01	+/-	1.339E+01	3.35	14.28	14.67
166	145	57139	1	0.06769	1.2051E+06	+/-	6.940E+03	0.00	0.58	0.58
167	146	57139	2	0.0499	1.0568E+06	+/-	4.967E+03	0.00	0.47	0.47
168	147	57139	102	7.362-5	5.3657E+04	+/-	4.284E+03	5.79	5.50	7.98
169	148	59141	16	11.4442	8.4308E+01	+/-	1.687E+01	12.49	15.63	20.01
170	149	64000	1	5.428-4	2.9444E+06	+/-	2.992E+04	0.00	1.02	1.02
171	150	64000	2	4.620-3	1.5650E+06	+/-	8.304E+03	0.00	0.53	0.53
172	151	64000	101	2.910-5	1.1743E+06	+/-	2.648E+04	0.00	2.26	2.26
173	152	69169	16	10.3183	2.7618E+02	+/-	2.854E+01	3.18	9.83	10.33
174	153	69169	17	16.45	1.9487E-01	+/-	1.957E-01	9.06	100.00	100.41
175	154	73181	1	9.963-5	4.0892E+06	+/-	9.159E+04	0.00	2.24	2.24
176	155	73181	2	1.802-3	1.7900E+06	+/-	1.828E+04	0.00	1.02	1.02
177	156	73181	102	2.023-5	2.0762E+06	+/-	1.154E+05	3.94	3.92	5.56
178	157	74186	1	1.880-5	1.4885E+07	+/-	9.036E+05	0.00	6.07	6.07
179	158	74186	2	1.880-5	1.2890E+07	+/-	7.838E+05	0.00	6.08	6.08
180	159	74186	102	1.868-5	1.8094E+06	+/-	1.441E+05	4.42	6.62	7.96
181	160	79197	1	5.204-6	5.4221E+06	+/-	2.928E+05	0.00	5.40	5.40
182	161	79197	2	1.592-3	2.1391E+06	+/-	3.436E+04	0.00	1.61	1.61
183	162	79197	16	10.5688	2.4318E+02	+/-	2.534E+01	1.97	10.23	10.42
184	163	79197	102	4.925-6	3.1309E+06	+/-	2.666E+05	1.88	8.31	8.52
185	164	80199	80199m	2.73546	1.8255E+04	+/-	6.799E+02	3.65	0.73	3.72
186	165	82204	82204m	4.90838	1.0276E+03	+/-	4.986E+01	4.62	1.49	4.85
187	166	83209	16	9.95221	4.4295E+02	+/-	4.044E+01	3.99	8.21	9.13
188	167	83209	17	16.45	3.6227E-01	+/-	3.634E-01	7.89	100.00	100.31
189	168	90232	1	3.455-3	2.5387E+06	+/-	2.600E+04	0.00	1.02	1.02
190	169	90232	2	6.473-3	1.8685E+06	+/-	1.462E+04	0.00	0.78	0.78
191	170	90232	18	2.67597	5.0594E+03	+/-	2.958E+02	5.79	0.78	5.85
192	171	90232	102	6.985-5	4.4430E+05	+/-	1.704E+04	1.84	3.37	3.84
193	172	92235	1	6.066-4	3.1258E+06	+/-	2.030E+04	0.00	0.65	0.65
194	173	92235	18	7.732-5	1.0922E+06	+/-	1.132E+04	0.30	0.99	1.04
195	174	92238	1	1.948-4	3.5691E+06	+/-	7.285E+04	0.00	2.04	2.04
196	175	92238	2	1.175-3	2.3360E+06	+/-	3.113E+04	0.00	1.33	1.33
197	176	92238	16	8.12409	9.6057E+02	+/-	6.735E+01	5.10	4.81	7.01
198	177	92238	18	2.48651	2.0087E+04	+/-	2.873E+02	1.22	0.74	1.43
199	178	92238	102	2.074-5	9.7989E+05	+/-	5.145E+04	1.01	5.15	5.25
200	179	93237	1	3.022-4	3.4595E+06	+/-	3.152E+04	0.00	0.91	0.91
201	180	93237	2	0.01267	1.4716E+06	+/-	5.974E+03	0.00	0.41	0.41
202	181	93237	18	1.60767	1.0674E+05	+/-	2.231E+03	2.02	0.54	2.09
203	182	94239	1	2.620-4	3.5638E+06	+/-	4.215E+04	0.00	1.18	1.18
204	183	94239	2	0.01558	1.4037E+06	+/-	5.800E+03	0.00	0.41	0.41
205	184	94239	18	6.148-5	1.2321E+06	+/-	3.720E+04	2.32	1.93	3.02

```
    185 95241       1  2.093-4 3.7264E+06 +/- 5.554E+04     0.00   1.49   1.49
    186 95241       2  0.02613 1.4411E+06 +/- 5.611E+03     0.00   0.39   0.39
    187 95241      18  1.73855 1.1086E+05 +/- 2.769E+03     2.41   0.65   2.50
```