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 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      :
   ..\IRDFF-II.g725
 8  Source spectrum file     :
   ..\IRDFF-II_sp.g
 9  Reaction rate integ.flag :      1
10  Reaction rate norm. flag :      1
11
12  Spectrum MAT No.         :   9011
13  Spectrum Integral            :  1.503E+02
14  Spectrum average energy [eV] :  6.565E+05
15  Spectrum peak energy    [eV] :  7.797E-01
16  Reaction rate RR = spectrum integral
17
18                                                                  Unc.    Unc.    Unc.
19    No.   Mat.      MT    E(50%)        <RR> +/-  Unc           x.s.    Sp.     Total
20                          [MeV]              [mb]                [%]     [%]     [%]
21  ----- ------ ------ ------- ----------------------------    ------ ------ ------
22      1   3000      1  7.742-5 4.0403E+05 +/- 2.976E+01      0.00   0.01   0.01
23      2   3000      2  0.25679 2.0451E+05 +/- 1.349E+01      0.00   0.01   0.01
24      3   3000    205  2.394-6 1.9163E+05 +/- 9.441E+02      0.49   0.01   0.49
25      4   3000    207  2.404-6 1.9226E+05 +/- 9.476E+02      0.49   0.01   0.49
26      5   3006      1  2.765-6 2.7088E+06 +/- 3.122E+02      0.00   0.01   0.01
27      6   3006      2  0.26078 1.8741E+05 +/- 1.354E+01      0.00   0.01   0.01
28      7   3006    105  2.376-6 2.5152E+06 +/- 1.244E+04      0.49   0.01   0.49
29      8   3006    205  2.376-6 2.5152E+06 +/- 1.244E+04      0.49   0.01   0.49
30      9   3006    207  2.386-6 2.5206E+06 +/- 1.248E+04      0.50   0.01   0.50
31     10   3007      1  0.26317 2.1473E+05 +/- 1.399E+01      0.00   0.01   0.01
32     11   3007      2  0.25656 2.0591E+05 +/- 1.357E+01      0.00   0.01   0.01
33     12   3007    205  5.89249 7.7753E+02 +/- 1.933E+01      2.49   0.04   2.49
34     13   3007    207  5.46414 1.0189E+03 +/- 2.077E+01      2.04   0.03   2.04
35     14   5000      1  3.781-6 2.5649E+06 +/- 2.661E+02      0.00   0.01   0.01
36     15   5000      2  0.01258 5.3763E+05 +/- 2.811E+01      0.00   0.01   0.01
37     16   5000    101  2.314-6 2.0249E+06 +/- 2.523E+02      0.00   0.01   0.01
38     17   5000    205   2.6575 4.5181E+02 +/- 6.303E+01     13.95   0.01  13.95
39     18   5000    207  2.316-6 2.0252E+06 +/- 1.542E+04      0.76   0.01   0.76
40     19   5010      1  2.467-6 1.0534E+07 +/- 1.275E+03      0.00   0.01   0.01
41     20   5010      2  0.12417 3.5144E+05 +/- 1.841E+01      0.00   0.01   0.01
42     21   5010    101  2.314-6 1.0175E+07 +/- 1.268E+03      0.00   0.01   0.01
43     22   5010    107  2.313-6 1.0172E+07 +/- 7.749E+04      0.76   0.01   0.76
44     23   5010    205  2.65616 2.2695E+03 +/- 3.168E+02     13.96   0.01  13.96
45     24   5010    207  2.315-6 1.0177E+07 +/- 7.749E+04      0.76   0.01   0.76
46     25   5010    800  2.385-6 6.5035E+05 +/- 5.753E+03      0.88   0.01   0.88
47     26   5010    801  2.309-6 9.5218E+06 +/- 7.728E+04      0.81   0.01   0.81
48     27   5011      1  9.014-3 5.8502E+05 +/- 3.085E+01      0.00   0.01   0.01
49     28   5011      2  8.864-3 5.8387E+05 +/- 3.082E+01      0.00   0.01   0.01
50     29   5011    205  12.7539 2.1600E-01 +/- 3.674E-02     17.01   0.45  17.01
51     30   5011    207  11.3063 8.8734E+00 +/- 1.279E+00     14.41   0.25  14.42
52     31   9019     16  13.9307 3.1204E-01 +/- 9.500E-03      2.97   0.67   3.04
53     32  11023      1  3.025-3 9.9491E+05 +/- 1.866E+02      0.00   0.02   0.02
54     33  11023      2  2.994-3 9.6753E+05 +/- 1.863E+02      0.00   0.02   0.02
55     34  11023     16   15.495 1.5349E-01 +/- 2.696E-03      1.30   1.18   1.76
56     35  11023    102  5.315-6 1.9032E+03 +/- 8.164E+01      4.29   0.01   4.29
57     36  12000  11024g 8.11654 4.2326E+01 +/- 3.538E-01      0.83   0.08   0.84
58     37  12024    103  8.11623 5.3573E+01 +/- 4.478E-01      0.83   0.08   0.84
59     38  13027     16  16.0127 1.3464E-01 +/- 5.264E-03      3.64   1.44   3.91
60     39  13027    103  5.70606 1.4172E+02 +/- 2.921E+00      2.06   0.03   2.06
61     40  13027    107  8.48204 2.5346E+01 +/- 1.892E-01      0.74   0.09   0.75
62     41  13027  11024g 8.48204 2.5346E+01 +/- 1.892E-01      0.74   0.09   0.75
63     42  13027  13026g 15.8707 1.2144E-01 +/- 4.986E-03      3.87   1.37   4.11
64     43  13027  13026m 17.5932 1.3202E-02 +/- 1.412E-03     10.38   2.55  10.69
65     44  14000  13028g 7.05197 1.8071E+02 +/- 4.589E+00      2.54   0.06   2.54
66     45  14028    103  7.05191 1.9594E+02 +/- 4.976E+00      2.54   0.06   2.54
67     46  14029  13028g 15.8425 1.6300E-01 +/- 7.463E-03      4.39   1.31   4.58
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68	47	15031	103	3.47172	1.3686E+03	+/- 4.791E+01	3.50	0.02	3.50
69	48	16000	15032g	3.91029	2.4496E+03	+/- 6.212E+01	2.54	0.02	2.54
70	49	16032	103	3.91028	2.5788E+03	+/- 6.540E+01	2.54	0.02	2.54
71	50	21045	1	3.236-3	1.7088E+06	+/- 1.800E+02	0.00	0.01	0.01
72	51	21045	2	3.277-3	1.6028E+06	+/- 1.760E+02	0.00	0.01	0.01
73	52	21045	102	2.226-6	7.0203E+04	+/- 4.770E+03	6.79	0.01	6.79
74	53	22000	21046g	0	3.4012E+01	+/- 1.079E+00	3.17	0.04	3.17
75	54	22000	21047g	0	5.3534E+01	+/- 1.484E+00	2.77	0.02	2.77
76	55	22000	21048g	0	8.0009E+00	+/- 4.444E-01	5.55	0.08	5.55
77	56	22000	22045g	15.9977	1.8209E-02	+/- 8.433E-04	4.41	1.42	4.63
78	57	22046	16	15.9977	2.2072E-01	+/- 1.022E-02	4.41	1.42	4.63
79	58	22046	103	5.86321	4.1194E+02	+/- 1.307E+01	3.17	0.04	3.17
80	59	22047	103	3.4129	7.1875E+02	+/- 1.994E+01	2.77	0.02	2.77
81	60	22048	103	8.09614	1.0849E+01	+/- 6.028E-01	5.56	0.08	5.56
82	61	23051	107	9.75622	8.8536E-01	+/- 2.793E-02	3.15	0.15	3.15
83	62	23051	21048g	9.75622	8.8536E-01	+/- 2.793E-02	3.15	0.15	3.15
84	63	24000	24051g	14.6361	1.5252E+00	+/- 4.306E-02	2.69	0.86	2.82
85	64	25055	1	3.756-4	4.1410E+06	+/- 1.132E+03	0.00	0.03	0.03
86	65	25055	2	3.755-4	3.9982E+06	+/- 1.114E+03	0.00	0.03	0.03
87	66	25055	16	12.8421	9.3921E+00	+/- 2.315E-01	2.42	0.45	2.47
88	67	25055	102	3.074-4	8.1974E+04	+/- 3.138E+03	3.83	0.02	3.83
89	68	26000	24051g	0	1.7997E+00	+/- 7.098E-02	3.94	0.06	3.94
90	69	26000	25054g	0	1.7012E+02	+/- 5.424E+00	3.19	0.02	3.19
91	70	26000	25056g	0	3.5963E+01	+/- 9.660E-01	2.69	0.06	2.69
92	71	26000	26053g	16.4835	3.6914E-03	+/- 1.906E-04	4.89	1.67	5.16
93	72	26054	1	8.815-3	9.7021E+05	+/- 1.917E+02	0.00	0.02	0.02
94	73	26054	2	8.742-3	9.4147E+05	+/- 1.912E+02	0.00	0.02	0.02
95	74	26054	16	16.4835	6.3156E-02	+/- 3.261E-03	4.89	1.67	5.16
96	75	26054	103	4.25781	2.9105E+03	+/- 9.280E+01	3.19	0.02	3.19
97	76	26054	107	7.13591	3.0790E+01	+/- 1.214E+00	3.94	0.06	3.94
98	77	26056	103	7.33415	3.9193E+01	+/- 1.053E+00	2.69	0.06	2.69
99	78	26058	1	0.04124	1.0303E+06	+/- 8.155E+01	0.00	0.01	0.01
100	79	26058	2	0.01097	9.2513E+05	+/- 7.932E+01	0.00	0.01	0.01
101	80	26058	102	2.334-4	7.8138E+03	+/- 3.785E+02	4.84	0.03	4.84
102	81	27059	1	1.326-4	5.7153E+06	+/- 2.850E+03	0.00	0.05	0.05
103	82	27059	2	1.328-4	5.2115E+06	+/- 2.617E+03	0.00	0.05	0.05
104	83	27059	16	13.0167	8.0394E+00	+/- 1.329E-01	1.58	0.48	1.65
105	84	27059	17	19.8224	7.4262E-05	+/- 3.422E-05	43.67	14.72	46.08
106	85	27059	102	1.297-4	4.7172E+05	+/- 3.623E+03	0.77	0.05	0.77
107	86	27059	103	5.70246	5.1128E+01	+/- 1.863E+00	3.64	0.03	3.64
108	87	27059	107	8.12054	5.6395E+00	+/- 2.284E-01	4.05	0.08	4.05
109	88	27059	25056g	8.12054	5.6395E+00	+/- 2.284E-01	4.05	0.08	4.05
110	89	28000	27058g	0	2.7740E+03	+/- 4.800E+01	1.73	0.02	1.73
111	90	28000	27060g	0	2.0511E+01	+/- 4.065E-01	1.98	0.05	1.98
112	91	28000	28057g	14.9013	1.0820E-01	+/- 1.744E-03	1.30	0.95	1.61
113	92	28058	16	14.9013	1.5894E-01	+/- 2.562E-03	1.30	0.95	1.61
114	93	28058	103	3.98638	4.0748E+03	+/- 7.051E+01	1.73	0.02	1.73
115	94	28060	103	6.7929	7.8206E+01	+/- 1.550E+00	1.98	0.05	1.98
116	95	29000	27060g	6.99444	1.3190E+01	+/- 4.052E-01	3.07	0.05	3.07
117	96	29000	29062g	13.7489	2.6461E+00	+/- 4.112E-02	1.42	0.63	1.55
118	97	29000	29064g	5.834-4	2.1669E+04	+/- 8.843E+02	4.08	0.05	4.08
119	98	29063	1	8.158-3	9.4682E+05	+/- 1.067E+02	0.00	0.01	0.01
120	99	29063	2	7.955-3	8.8018E+05	+/- 1.008E+02	0.00	0.01	0.01
121	100	29063	16	13.7489	3.8266E+00	+/- 5.947E-02	1.42	0.63	1.55
122	101	29063	102	5.834-4	3.1330E+04	+/- 1.312E+03	4.19	0.05	4.19
123	102	29063	107	6.99444	1.9075E+01	+/- 5.860E-01	3.07	0.05	3.07
124	103	29065	16	12.6011	1.3103E+01	+/- 2.583E-01	1.93	0.41	1.97
125	104	30000	29064g	4.02635	7.0683E+02	+/- 1.228E+01	1.74	0.02	1.74
126	105	30000	29067g	2.64945	2.4758E+00	+/- 2.606E-01	10.53	0.03	10.53
127	106	30064	103	4.02635	1.4375E+03	+/- 2.498E+01	1.74	0.02	1.74
128	107	30067	103	2.63587	6.1075E+01	+/- 6.452E+00	10.56	0.03	10.56
129	108	30068	1	5.231-4	1.6327E+06	+/- 7.315E+02	0.00	0.04	0.04
130	109	30068	2	5.227-4	1.5832E+06	+/- 7.178E+02	0.00	0.05	0.05
131	110	30068	29067g	15.3184	4.6780E-02	+/- 7.151E-03	15.24	1.11	15.29
132	111	33075	16	12.8434	1.2306E+01	+/- 7.350E-01	5.96	0.45	5.97
133	112	39089	16	13.8173	6.6473E+00	+/- 9.550E-02	1.28	0.65	1.44
134	113	40000	40089g	14.3259	2.1129E+00	+/- 2.558E-02	0.92	0.79	1.21
135	114	40090	16	14.3259	4.1066E+00	+/- 4.971E-02	0.92	0.79	1.21
136	115	41093	1	0.0431	1.1080E+06	+/- 6.094E+01	0.00	0.01	0.01

137	116	41093	2	0.03963	9.9162E+05	+/- 5.396E+01	0.00	0.01	0.01
138	117	41093	102	7.598-4	5.6851E+04	+/- 1.841E+03	3.24	0.02	3.24
139	118	41093	41093m	2.25603	6.7150E+03	+/- 1.862E+02	2.77	0.01	2.77
140	119	41093	41092m	11.2118	1.6840E+01	+/- 1.504E-01	0.85	0.26	0.89
141	120	41093	41094g	7.598-4	1.4198E+04	+/- 4.599E+02	3.24	0.02	3.24
142	121	41093	41094m	7.598-4	4.2653E+04	+/- 1.382E+03	3.24	0.02	3.24
143	122	42000	41092m	5.18041	3.5628E+01	+/- 1.405E+00	3.94	0.03	3.94
144	123	42092	41092m	5.1804	2.4520E+02	+/- 9.670E+00	3.94	0.03	3.94
145	124	45103	45103m	1.81612	3.6942E+04	+/- 1.483E+03	4.01	0.01	4.01
146	125	47109	1	5.192-6	1.1123E+07	+/- 6.312E+03	0.00	0.06	0.06
147	126	47109	2	2.292-5	1.7337E+06	+/- 5.435E+02	0.00	0.03	0.03
148	127	47109	47110n	5.166-6	4.3198E+05	+/- 3.003E+04	6.95	0.06	6.95
149	128	48000	1	2.704-4	1.7037E+06	+/- 5.108E+02	0.00	0.03	0.03
150	129	48000	2	0.01456	9.8911E+05	+/- 7.809E+01	0.00	0.01	0.01
151	130	48000	101	4.251-7	6.4096E+05	+/- 4.986E+02	0.00	0.08	0.08
152	131	49000	49114m	9.015-6	6.0999E+04	+/- 5.301E+03	8.69	0.03	8.69
153	132	49113	1	1.494-5	3.0692E+06	+/- 7.552E+02	0.00	0.02	0.02
154	133	49113	2	0.01048	9.3288E+05	+/- 7.271E+01	0.00	0.01	0.01
155	134	49113	102	5.112-6	2.1000E+06	+/- 7.115E+02	0.00	0.03	0.03
156	135	49113	49113m	2.39027	6.9679E+03	+/- 8.472E+01	1.22	0.01	1.22
157	136	49113	49114g	4.933-6	6.7890E+05	+/- 5.950E+04	8.76	0.03	8.76
158	137	49113	49114m	7.648-6	1.4211E+06	+/- 1.236E+05	8.70	0.03	8.70
159	138	49115	1	1.459-6	2.1340E+07	+/- 1.086E+04	0.00	0.05	0.05
160	139	49115	2	2.680-6	1.5966E+06	+/- 4.382E+02	0.00	0.03	0.03
161	140	49115	102	1.455-6	1.9701E+07	+/- 1.042E+04	0.00	0.05	0.05
162	141	49115	49115m	2.32456	8.5419E+03	+/- 1.464E+02	1.71	0.01	1.71
163	142	49115	49114m	11.7082	3.3998E+01	+/- 1.777E+00	5.22	0.30	5.23
164	143	49115	49116g	1.455-6	4.1371E+06	+/- 1.291E+05	3.12	0.05	3.12
165	144	49115	49116m	1.455-6	1.5564E+07	+/- 4.858E+05	3.12	0.05	3.12
166	145	53127	16	11.4764	4.4279E+01	+/- 1.396E+00	3.14	0.28	3.15
167	146	57139	1	3.449-3	1.2138E+06	+/- 9.662E+01	0.00	0.01	0.01
168	147	57139	2	3.470-3	1.0719E+06	+/- 6.928E+01	0.00	0.01	0.01
169	148	57139	102	7.273-5	7.5088E+04	+/- 4.135E+03	5.51	0.05	5.51
170	149	59141	16	11.7529	4.1307E+01	+/- 4.774E+00	11.55	0.31	11.56
171	150	64000	1	2.527-6	6.5358E+06	+/- 4.376E+03	0.00	0.07	0.07
172	151	64000	2	1.343-3	1.4755E+06	+/- 1.096E+02	0.00	0.01	0.01
173	152	64000	101	1.191-7	4.9123E+06	+/- 4.355E+03	0.00	0.09	0.09
174	153	69169	16	10.279	1.3996E+02	+/- 4.666E+00	3.33	0.18	3.33
175	154	69169	17	18.0986	2.1327E-01	+/- 1.549E-02	6.53	3.18	7.26
176	155	73181	1	1.053-5	6.1674E+06	+/- 1.946E+03	0.00	0.03	0.03
177	156	73181	2	2.751-4	1.8306E+06	+/- 2.889E+02	0.00	0.02	0.02
178	157	73181	102	4.453-6	4.1741E+06	+/- 1.584E+05	3.79	0.04	3.79
179	158	74186	1	1.871-5	2.3279E+07	+/- 1.669E+04	0.00	0.07	0.07
180	159	74186	2	1.872-5	2.0113E+07	+/- 1.448E+04	0.00	0.07	0.07
181	160	74186	102	1.862-5	3.0331E+06	+/- 1.363E+05	4.49	0.07	4.49
182	161	79197	1	4.917-6	1.2654E+07	+/- 7.581E+03	0.00	0.06	0.06
183	162	79197	2	6.040-5	2.8110E+06	+/- 8.490E+02	0.00	0.03	0.03
184	163	79197	16	10.43	1.2255E+02	+/- 2.367E+00	1.92	0.19	1.93
185	164	79197	102	4.884-6	9.7346E+06	+/- 2.021E+05	2.08	0.07	2.08
186	165	80199	80199m	2.59813	1.2420E+04	+/- 4.556E+02	3.67	0.01	3.67
187	166	82204	82204m	4.86622	6.3830E+02	+/- 2.967E+01	4.65	0.03	4.65
188	167	83209	16	9.75101	2.3031E+02	+/- 9.480E+00	4.11	0.15	4.12
189	168	83209	17	17.8321	2.8176E-01	+/- 1.859E-02	5.96	2.82	6.60
190	169	90232	1	3.707-4	2.5120E+06	+/- 3.922E+02	0.00	0.02	0.02
191	170	90232	2	1.044-3	1.8096E+06	+/- 2.084E+02	0.00	0.01	0.01
192	171	90232	18	2.53844	3.4482E+03	+/- 2.000E+02	5.80	0.01	5.80
193	172	90232	102	2.399-5	5.3984E+05	+/- 1.025E+04	1.90	0.04	1.90
194	173	92235	1	3.574-5	4.0758E+06	+/- 3.731E+02	0.00	0.01	0.01
195	174	92235	18	1.912-5	1.7673E+06	+/- 4.889E+03	0.28	0.01	0.28
196	175	92238	1	3.744-5	4.3623E+06	+/- 1.329E+03	0.00	0.03	0.03
197	176	92238	2	1.835-4	2.4383E+06	+/- 4.847E+02	0.00	0.02	0.02
198	177	92238	16	8.08232	5.3730E+02	+/- 2.738E+01	5.10	0.09	5.10
199	178	92238	18	2.38914	1.3828E+04	+/- 1.691E+02	1.22	0.01	1.22
200	179	92238	102	2.012-5	1.7352E+06	+/- 1.976E+04	1.14	0.06	1.14
201	180	93237	1	1.091-5	5.6919E+06	+/- 9.429E+02	0.00	0.02	0.02
202	181	93237	2	1.569-3	1.4658E+06	+/- 8.304E+01	0.00	0.01	0.01
203	182	93237	18	1.51728	7.7799E+04	+/- 1.759E+03	2.26	0.01	2.26
204	183	94239	1	4.079-5	4.6164E+06	+/- 6.303E+02	0.00	0.01	0.01
205	184	94239	2	2.950-3	1.3308E+06	+/- 7.672E+01	0.00	0.01	0.01

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206      185 94239      18  1.192-5 2.0129E+06 +/- 4.361E+04      2.17    0.02    2.17
207      186 95241       1  1.955-6 8.4599E+06 +/- 1.818E+03      0.00    0.02    0.02
208      187 95241       2  3.868-3 1.3850E+06 +/- 7.620E+01      0.00    0.01    0.01
209      188 95241      18   1.1771 1.1134E+05 +/- 2.065E+03      1.85    0.01    1.85
210
211
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