**Nuclear Data Section**

**International Atomic Energy Agency**

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**Memo CP-D/1054**

**Date:** 17 August 2022

**To:** Distribution

**From:** N. Otsuka

**Subject: Short-lived (<1 day) nuclide in REACTION SF1**

As a test of a new Dictionary 227 produced from Nubase2020 (F.G. Kondev et al., Chin. Phys. **C45**(2021)030001), I checked presence of an a short-lived (<1 day) nuclide coded under REACTION SF1 of EXFOR Master 2020-08-03 with the new Dictionary 227. After exclusion of the following cases,

* REACTION code in the tautology formalism (inverse kinematics experiment)
* Reason seen in coded information (e.g., COULX, ANC, DTBAL)
* “Neutron target” (0-NN-1)

I got 255 datasets and checked each case with the source article, and found datasets

1. coded with wrong REACTION codes.

… Registered in the Feedback list.

1. requiring addition of ANALYSIS code (ANC or DTBAL)

… Registered in the Feedback List.

1. requiring addition of REACTION code in normal kinematics

… This could be done when the subentry is retransmitted for another purpose.

1. from double capture measurements (no METHOD code exists)

… Create a new method code for double capture measurements?

1. from measurement of another reaction or decay leading the same compound nuclide

… I suggest their deletion. They are resonance parameters (or reaction rates derived from resonance parameters) by measurement of another reaction leading the compound nuclide (e.g., 68Ni+n reaction rates derived from 69Co decay measurement, 25Al+p resonance parameters derived from a 28Si(p,t)26Si experiment). We have added the following paragraph in LEXFOR “Single-level resonance parameters” to avoid compilation of such datasets:

“Resonance parameters are compiled when both the projectile and target leading to the compound resonance are clarified by authors, and …”.

To express our intention more clearly, I suggest reformulation of the paragraph to

“Resonance parameters are compiled when the measurement was done by using the projectile and target coded in REACTION (or the derivation was done by an indirect method defined in Dictionary 23), and …”

I also suggest the same limitation to the reaction rates since they are often derived from the resonance parameters obtained by this approach.

My comment on each dataset is summarized in the list appended to this memo.

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**Reviewed datasets with T1/2<1 day target nuclide (extracted from EXFOR Master 2022-08-03)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **EXFOR #** | **Target(SF1)** | **Half-life (sec)** | **REACTION** | **METHOD** | **Keyword** | **Remark** |
| 11739.004 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,G)90-TH-234,,SIG,,MXW | Double capture |  |  |
| 11739.005 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,G)90-TH-234,,RI | Double capture |  |  |
| 11750.002 | 27-CO-60-M | 6.2802E+02 | 27-CO-60-M(N,G)27-CO-61,,SIG,,SPA | Double capture |  |  |
| 11772.003 | 12-MG-27 | 5.6610E+02 | 12-MG-27(N,G)12-MG-28,,SIG,,SPA | ? |  | Private communication |
| 11847.002 | 37-RB-88 | 1.0668E+03 | 37-RB-88(N,G)37-RB-89,,SIG,,SPA | Double capture |  |  |
| 12291.002 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,G)90-TH-234,,SIG,,SPA | Double capture |  |  |
| 12550.012 | 96-CM-250 | (Blank in NuBase) | 96-CM-250(N,G)96-CM-251,,SIG,,SPA |  | REACTION | SF1, SF4: CM -> CF |
| 12550.013 | 96-CM-251 | 1.0080E+03 | 96-CM-251(N,F),,SIG,,SPA |  | REACTION | SF1: CM -> CF |
| 12550.014 | 96-CM-251 | 1.0080E+03 | 96-CM-251(N,G)96-CM-252,,SIG,,SPA |  | REACTION | SF1, SF4: CM -> CF |
| 12591.002 | 12-MG-27 | 5.6610E+02 | 12-MG-27(N,G)12-MG-28,,SIG,,SPA | Double capture |  |  |
| 12591.004 | 24-CR-55 | 2.0982E+02 | 24-CR-55(N,G)24-CR-56,,SIG,,SPA | Double capture |  |  |
| 12596.004 | 27-CO-60-M | 6.2802E+02 | 27-CO-60-M(N,G)27-CO-61,,SIG | Double capture |  |  |
| 12596.005 | 27-CO-60-M | 6.2802E+02 | 27-CO-60-M(N,G)27-CO-61,,RI | Double capture |  |  |
| 12598.002 | 29-CU-66 | 3.0720E+02 | 29-CU-66(N,G)29-CU-67,,SIG,,SPA | Double capture |  |  |
| 12601.004 | 29-CU-66 | 3.0720E+02 | 29-CU-66(N,G)29-CU-67,,SIG,,MXW | Double capture |  |  |
| 12615.002 | 45-RH-104 | 4.2300E+01 | 45-RH-104(N,G)45-RH-105,,SIG,,SPA | ? |  | Reference not available |
| 12615.003 | 45-RH-104-M | 2.6040E+02 | 45-RH-104-M(N,G)45-RH-105,,SIG,,SPA | ? |  | Reference not available |
| 14047.005 | 95-AM-244-M | 1.5678E+03 | 95-AM-244-M(N,F),,SIG | ? |  | Abstract only |
| 14050.002 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,F),,SIG,,MXW | Double capture |  |  |
| 14050.003 | 92-U-239 | 1.4070E+03 | 92-U-239(N,F),,SIG,,MXW | Double capture |  |  |
| 14476.003 | 28-NI-68 | 2.9000E+01 | 28-NI-68(N,G)28-NI-69,,SGV |  | Data | Delete? Property of 69Ni by 69Co decay study. |
| 14517.003 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,F)MASS,CHN,FY,,REL |  | REACTION | SF1: 90-TH-233 -> 90-TH-232 |
| 14517.004 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,F)MASS,CHN,FY,,REL |  | REACTION | SF1: 90-TH-233 -> 90-TH-232 |
| 14517.005 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,F)MASS,CHN,FY,,REL |  | REACTION | SF1: 90-TH-233 -> 90-TH-232 |
| 14517.006 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,F)MASS,CHN,FY,,REL |  | REACTION | SF1: 90-TH-233 -> 90-TH-232 |
| 14517.007 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,F)MASS,CHN,FY,,REL |  | REACTION | SF1: 90-TH-233 -> 90-TH-232 |
| 14517.008 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,F)MASS,CHN,FY,,REL |  | REACTION | SF1: 90-TH-233 -> 90-TH-232 |
| 20511.002 | 57-LA-144 | 4.4000E+01 | 57-LA-144(N,G)57-LA-145,,SPC,,REL | U(n,f)144La |  |  |
| 20695.002.2 | 66-DY-165-M | 7.5420E+01 | 66-DY-165-M(N,G)66-DY-166,,SIG,,MXW | Double capture |  |  |
| 20960.005 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,0),,D |  | REACTION | SF1: 90-TH-233 -> 90-TH-232 |
| 20991.002 | 12-MG-27 | 5.6610E+02 | 12-MG-27(N,G)12-MG-28,,SIG,,MXW | Double capture |  |  |
| 20991.003 | 13-AL-28 | 1.3470E+02 | 13-AL-28(N,P)12-MG-28,,SIG,,FIS | 27Al(n,g)28Al(n,p)28Mg |  |  |
| 22781.005 | 8-O-19 | 2.6470E+01 | 8-O-19(N,G),,WID |  | REACTION | SF1: 8-O-19 -> 8-O-18 |
| 22874.003.1 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,G)90-TH-234,,SIG,,SPA | Double capture |  |  |
| 22874.003.2 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,G)90-TH-234,,SIG,,SPA | Double capture |  |  |
| 22874.003.3 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,G)90-TH-234,,SIG,,SPA | Double capture |  |  |
| 22874.003.4 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,G)90-TH-234,,SIG,,SPA | Double capture |  |  |
| 22874.003.5 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,G)90-TH-234,,SIG,,SPA | Double capture |  |  |
| 22874.004 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,G)90-TH-234,,SIG | Double capture |  |  |
| 22874.005 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,G)90-TH-234,,RI | Double capture |  |  |
| 22874.007 | 90-TH-233 | 1.3098E+03 | 90-TH-233(N,G)90-TH-234,,RI,,RNV | Double capture |  |  |
| 23485.006 | 53-I-128 | 1.4994E+03 | 53-I-128(N,G)53-I-129,,SIG | Double capture |  |  |
| 23485.007 | 53-I-128 | 1.4994E+03 | 53-I-128(N,G)53-I-129,,SIG,,SPA | Double capture |  |  |
| 23485.008 | 53-I-128 | 1.4994E+03 | 53-I-128(N,G)53-I-129,,RI | Double capture |  |  |
| 23485.009 | 53-I-128 | 1.4994E+03 | 53-I-128(N,G)53-I-129,,RI,,RNV | Double capture |  |  |
| 41569.002 | 88-RA-227 | 2.5320E+03 | 88-RA-227(N,G)88-RA-228,,SIG,,SPA | Double capture |  |  |
| A0919.064 | 69-TM-159 | 5.4780E+02 | 69-TM-159(P,X)54-XE-126,,SIG |  | REACTION | SF1: 69-TM-159 -> 69-TM-169 |
| A0950.047 | 50-SN-108 | 6.1800E+02 | 50-SN-108(6-C-12,X)45-RH-97-M/G,,SIG/RAT | REACTION | SF1: 50-SN-108 -> 50-SN-120 |
| C0101.002 | 3-LI-8 | 8.3870E-01 | 3-LI-8(P,N)4-BE-8,PAR,DA,RSD | Inverse kinematics |  |  |
| C0126.002 | 3-LI-8 | 8.3870E-01 | 3-LI-8(D,T)3-LI-7,,DA | Inverse kinematics |  |  |
| C0126.003 | 3-LI-8 | 8.3870E-01 | 3-LI-8(D,N)4-BE-9,PAR,DA | Inverse kinematics |  |  |
| C0126.004 | 3-LI-8 | 8.3870E-01 | 3-LI-8(D,T)3-LI-7,,SIG | Inverse kinematics |  |  |
| C0126.005 | 3-LI-8 | 8.3870E-01 | 3-LI-8(D,N)4-BE-9,PAR,SIG | Inverse kinematics |  |  |
| C0759.003.1 | 9-F-17 | 6.4370E+01 | 9-F-17(P,0),,EN | Inverse kinematics |  |  |
| C0759.003.2 | 9-F-17 | 6.4370E+01 | 9-F-17(P,TOT),,WID | Inverse kinematics |  |  |
| C0870.002 | 3-LI-8 | 8.3870E-01 | 3-LI-8(D,A)2-HE-6,,DA | Inverse kinematics |  |  |
| C0870.003 | 3-LI-8 | 8.3870E-01 | 3-LI-8(D,A)2-HE-6,,SIG | Inverse kinematics |  |  |
| C0992.002 | 11-NA-21 | 2.2455E+01 | 11-NA-21(P,G)12-MG-22,,MLT,,TT | Inverse kinematics |  |  |
| C0992.003.1 | 11-NA-21 | 2.2455E+01 | 11-NA-21(P,0),,EN | Inverse kinematics |  |  |
| C0992.003.2 | 11-NA-21 | 2.2455E+01 | 11-NA-21(P,G),,WID/STR | Inverse kinematics |  |  |
| C1039.002 | 2-HE-6 | 8.0692E-01 | 2-HE-6(P,N)3-LI-6,PAR,DA | Inverse kinematics |  |  |
| C1044.002 | 11-NA-21 | 2.2455E+01 | 11-NA-21(P,G)12-MG-22,,PY,,TT | Inverse kinematics |  |  |
| C1044.003.1 | 11-NA-21 | 2.2455E+01 | 11-NA-21(P,0),,EN | Inverse kinematics |  |  |
| C1044.003.2 | 11-NA-21 | 2.2455E+01 | 11-NA-21(P,G),,WID | Inverse kinematics |  |  |
| C1044.003.3 | 11-NA-21 | 2.2455E+01 | 11-NA-21(P,G),,WID/STR | Inverse kinematics |  |  |
| C1119.002 | 9-F-17 | 6.4370E+01 | 9-F-17(P,EL)9-F-17,,DA | Inverse kinematics |  |  |
| C1119.003 | 9-F-17 | 6.4370E+01 | 9-F-17(P,INL)9-F-17,PAR,DA | Inverse kinematics |  |  |
| C1119.004 | 9-F-17 | 6.4370E+01 | 9-F-17(P,A)8-O-14,,SIG | Inverse kinematics |  |  |
| C1154.002 | 9-F-17 | 6.4370E+01 | 9-F-17(P,A)8-O-14,,SIG | Inverse kinematics |  |  |
| C1184.003.1 | 11-NA-21 | 2.2455E+01 | 11-NA-21(P,0),,EN | Inverse kinematics |  |  |
| C1184.003.2 | 11-NA-21 | 2.2455E+01 | 11-NA-21(P,G),,WID/STR | Inverse kinematics |  |  |
| C1184.004 | 11-NA-21 | 2.2455E+01 | 11-NA-21(P,G),PAR,WID | Inverse kinematics |  |  |
| C1198.002 | 3-LI-8 | 8.3870E-01 | 3-LI-8(D,P)3-LI-9,PAR,DA | Inverse kinematics |  |  |
| C1237.002.1 | 10-NE-18 | 1.6642E+00 | 10-NE-18(A,0),,EN |  | Data | Delete? Property of 22Mg formed by 12C(16O,6He)22Mg. |
| C1237.002.2 | 10-NE-18 | 1.6642E+00 | 10-NE-18(A,P),,WID/STR |  | Data | Delete? Calcualted values. |
| C1243.002.1 | 13-AL-25 | 7.1666E+00 | 13-AL-25(P,0),,EN |  | Data | Delete? Property of 26Si formed by 28Si(p,t)26Si. |
| C1243.002.2 | 13-AL-25 | 7.1666E+00 | 13-AL-25(P,G),PAR,WID |  | Data | Delete? Revision of theoretical value in the literature. |
| C1435.002 | 3-LI-8 | 8.3870E-01 | 3-LI-8(A,N)5-B-11,,SIG | Inverse kinematics |  |  |
| C1435.003 | 3-LI-8 | 8.3870E-01 | 3-LI-8(A,N)5-B-11,,SIG | Inverse kinematics |  |  |
| C1435.004 | 3-LI-8 | 8.3870E-01 | 3-LI-8(A,N)5-B-11,,SIG,,SFC | Inverse kinematics |  |  |
| C1453.002 | 8-O-20 | 1.3510E+01 | 8-O-20(P,EL)8-O-20,,DA | Inverse kinematics |  |  |
| C1453.003 | 8-O-20 | 1.3510E+01 | 8-O-20(P,INL)8-O-20,PAR,DA | Inverse kinematics |  |  |
| C1465.016 | 16-S-40 | 8.8000E+00 | 16-S-40(D,X)17-CL-40,,SIG | Inverse kinematics |  |  |
| C1465.017 | 16-S-40 | 8.8000E+00 | 16-S-40(D,X)16-S-39,,SIG | Inverse kinematics |  |  |
| C1465.018 | 16-S-40 | 8.8000E+00 | 16-S-40(D,X)16-S-38,,SIG | Inverse kinematics |  |  |
| C1465.019 | 16-S-40 | 8.8000E+00 | 16-S-40(D,X)15-P-37,,SIG | Inverse kinematics |  |  |
| C1465.020 | 16-S-40 | 8.8000E+00 | 16-S-40(D,X)15-P-36,,SIG | Inverse kinematics |  |  |
| C1465.021 | 16-S-40 | 8.8000E+00 | 16-S-40(D,X)14-SI-34,,SIG | Inverse kinematics |  |  |
| C1465.022 | 16-S-40 | 8.8000E+00 | 16-S-40(D,X)14-SI-33,,SIG | Inverse kinematics |  |  |
| C1465.023 | 16-S-40 | 8.8000E+00 | 16-S-40(D,X)13-AL-32,,SIG | Inverse kinematics |  |  |
| C1465.024 | 16-S-40 | 8.8000E+00 | 16-S-40(D,X)13-AL-31,,SIG | Inverse kinematics |  |  |
| C1465.025 | 16-S-42 | 1.0160E+00 | 16-S-42(D,X)17-CL-42,,SIG | Inverse kinematics |  |  |
| C1465.026 | 16-S-42 | 1.0160E+00 | 16-S-42(D,X)16-S-41,,SIG | Inverse kinematics |  |  |
| C1465.027 | 16-S-42 | 1.0160E+00 | 16-S-42(D,X)16-S-40,,SIG | Inverse kinematics |  |  |
| C1465.028 | 16-S-42 | 1.0160E+00 | 16-S-42(D,X)15-P-39,,SIG | Inverse kinematics |  |  |
| C1465.029 | 16-S-42 | 1.0160E+00 | 16-S-42(D,X)15-P-38,,SIG | Inverse kinematics |  |  |
| C1465.030 | 16-S-42 | 1.0160E+00 | 16-S-42(D,X)15-P-37,,SIG | Inverse kinematics |  |  |
| C1465.031 | 16-S-42 | 1.0160E+00 | 16-S-42(D,X)14-SI-36,,SIG | Inverse kinematics |  |  |
| C1465.032 | 16-S-42 | 1.0160E+00 | 16-S-42(D,X)14-SI-35,,SIG | Inverse kinematics |  |  |
| C1465.033 | 16-S-42 | 1.0160E+00 | 16-S-42(D,X)13-AL-33,,SIG | Inverse kinematics |  |  |
| C1465.034 | 16-S-42 | 1.0160E+00 | 16-S-42(D,X)13-AL-32,,SIG | Inverse kinematics |  |  |
| C1476.002 | 34-SE-84 | 1.9560E+02 | 34-SE-84(D,P)34-SE-85,PAR,DA | Inverse kinematics |  |  |
| C1476.003 | 32-GE-82 | 4.3100E+00 | 32-GE-82(D,P)32-GE-83,PAR,DA | Inverse kinematics |  |  |
| C1487.002.1 | 8-O-15 | 1.2227E+02 | 8-O-15(A,0),,EN |  | Data | Delete? Property of 19Ne formed by 3He(20Ne,a)19Ne. |
| C1487.002.2 | 8-O-15 | 1.2227E+02 | 8-O-15(A,G),,WID |  | Data | Delete? Property of 19Ne formed by 3He(20Ne,a)19Ne. |
| C1487.002.3 | 8-O-15 | 1.2227E+02 | 8-O-15(A,0),,J |  | Data | Delete? Property of 19Ne formed by 3He(20Ne,a)19Ne. |
| C1487.002.4 | 8-O-15 | 1.2227E+02 | 8-O-15(A,G),,PTY |  | Data | Delete? Property of 19Ne formed by 3He(20Ne,a)19Ne. |
| C1487.003.1 | 8-O-15 | 1.2227E+02 | 8-O-15(A,0),,EN |  | Data | Delete? Property of 19Ne formed by 3He(20Ne,a)19Ne. |
| C1487.003.2 | 8-O-15 | 1.2227E+02 | 8-O-15(A,G),,WID/STR |  | Data | Delete? Property of 19Ne formed by 3He(20Ne,a)19Ne. |
| C1496.002 | 11-NA-20 | 4.4790E-01 | 11-NA-20(P,EL)11-NA-20,,DA | Inverse kinematics |  |  |
| C1500.002 | 10-NE-18 | 1.6642E+00 | 10-NE-18(P,EL)10-NE-18,,DA | Inverse kinematics |  |  |
| C1502.002.1 | 2-HE-6 | 8.0692E-01 | 2-HE-6(A,TOT),,EN |  | Data | Delete? Property of 10Be formed by 10Be(14C,10Be\*)14C. |
| C1502.002.2 | 2-HE-6 | 8.0692E-01 | 2-HE-6(A,TOT),,WID |  | Data | Delete? Property of 10Be formed by 10Be(14C,10Be\*)14C. |
| C1504.002 | 5-B-9 | 8.0000E-19 | 5-B-9(18-AR-34,X)18-AR-32,PAR,SIG |  | REACTION | SF1: 5-B-9 -> 4-BE-9 |
| C1504.003 | 5-B-9 | 8.0000E-19 | 5-B-9(16-S-30,X)16-S-28,PAR,SIG |  | REACTION | SF1: 5-B-9 -> 4-BE-9 |
| C1504.004 | 5-B-9 | 8.0000E-19 | 5-B-9(14-SI-26,X)14-SI-24,PAR,SIG |  | REACTION | SF1: 5-B-9 -> 4-BE-9 |
| C1504.005 | 5-B-9 | 8.0000E-19 | 5-B-9(18-AR-34,X)18-AR-32,,SIG |  | REACTION | SF1: 5-B-9 -> 4-BE-9 |
| C1504.006 | 5-B-9 | 8.0000E-19 | 5-B-9(16-S-30,X)16-S-28,,SIG |  | REACTION | SF1: 5-B-9 -> 4-BE-9 |
| C1504.007 | 5-B-9 | 8.0000E-19 | 5-B-9(14-SI-26,X)14-SI-24,,SIG |  | REACTION | SF1: 5-B-9 -> 4-BE-9 |
| C1528.002 | 5-B-8 | 7.7190E-01 | 5-B-8(P,EL)5-B-8,,DA |  | REACTION | SF1: 5-B-9 -> 4-BE-9 |
| C1542.002 | 11-NA-21 | 2.2455E+01 | 11-NA-21(P,EL),,WID | Inverse kinematics |  |  |
| C1577.002 | 32-GE-82 | 4.3100E+00 | 32-GE-82(D,P)32-GE-83,PAR,DA | Inverse kinematics |  |  |
| C1577.003 | 32-GE-82 | 4.3100E+00 | 32-GE-82(D,P)32-GE-83,PAR,DA | Inverse kinematics |  |  |
| C1577.004 | 34-SE-84 | 1.9560E+02 | 34-SE-84(D,P)34-SE-85,PAR,DA | Inverse kinematics |  |  |
| C1577.005 | 34-SE-84 | 1.9560E+02 | 34-SE-84(D,P)34-SE-85,PAR,DA | Inverse kinematics |  |  |
| C1577.006 | 34-SE-84 | 1.9560E+02 | 34-SE-84(D,P)34-SE-85,PAR,DA | Inverse kinematics |  |  |
| C1577.007 | 34-SE-84 | 1.9560E+02 | 34-SE-84(D,P)34-SE-85,PAR,DA | Inverse kinematics |  |  |
| C1585.002.2 | 15-P-30 | 1.5000E+02 | 15-P-30(P,0),,L |  | Data | Delete? Property of 31S formed by 31P(3He,t)31S. |
| C1585.002.3 | 15-P-30 | 1.5000E+02 | 15-P-30(P,EL),,WID |  | Data | Delete? Property of 31S formed by 31P(3He,t)31S. |
| C1634.002.1 | 10-NE-18 | 1.6642E+00 | 10-NE-18(P,0),,EN |  | REACTION | Use SF1=8-O-14 and SF2=A. |
| C1634.002.2 | 10-NE-18 | 1.6642E+00 | 10-NE-18(P,TOT),,WID |  | REACTION | Use SF1=8-O-14, SF2=A and SF3=EL. |
| C1634.002.3 | 10-NE-18 | 1.6642E+00 | 10-NE-18(P,A),,WID |  | REACTION | Use SF1=8-O-14, SF2=A and SF3=EL. |
| C1634.002.4 | 10-NE-18 | 1.6642E+00 | 10-NE-18(P,A),,L |  | REACTION | Use SF1=8-O-14, SF2=A and SF3=0. |
| C1634.002.5 | 10-NE-18 | 1.6642E+00 | 10-NE-18(P,A),,PTY |  | REACTION | Use SF1=8-O-14, SF2=A and SF3=0. |
| C1634.003 | 8-O-14 | 7.0621E+01 | 8-O-14(A,EL)8-O-14,,DA | Inverse kinematics |  |  |
| C1634.004 | 8-O-14 | 7.0621E+01 | 8-O-14(A,EL)8-O-14,,DA | Inverse kinematics |  |  |
| C1634.005 | 8-O-14 | 7.0621E+01 | 8-O-14(A,EL)8-O-14,,DA | Inverse kinematics |  |  |
| C1689.002.1 | 13-AL-25 | 7.1666E+00 | 13-AL-25(P,0),,EN |  | Data | Delete? Property of 26Si formed by 27Al(p,2n)26Si. |
| C1689.002.2 | 13-AL-25 | 7.1666E+00 | 13-AL-25(P,EL),,WID |  | Data | Delete? Property of 26Si formed by 27Al(p,2n)26Si. |
| C1689.002.3 | 13-AL-25 | 7.1666E+00 | 13-AL-25(P,G),,WID |  | Data | Delete? Property of 26Si formed by 27Al(p,2n)26Si. |
| C1689.002.4 | 13-AL-25 | 7.1666E+00 | 13-AL-25(P,G),,WID/STR |  | Data | Delete? Property of 26Si formed by 27Al(p,2n)26Si. |
| C1691.002.2 | 15-P-30 | 1.5000E+02 | 15-P-30(P,G),,WID/STR |  | Data | Delete? Property of 30P formed by 31P(3He,5)31S(p)30P |
| C1706.027.1 | 10-NE-18 | 1.6642E+00 | 10-NE-18(A,0),,EN |  | Data | Delete? Property of 22Mg formed by 24Mg(p,t)22Mg. |
| C1707.002.1 | 8-O-15 | 1.2227E+02 | 8-O-15(A,0),,EN |  | Data | Delete? Property of 19Ne formed by 10F(3He,5)19Ne. |
| C1707.002.2 | 8-O-15 | 1.2227E+02 | 8-O-15(A,EL),,WID |  | Data | Delete? Property of 19Ne formed by 10F(3He,5)19Ne. |
| C1707.002.3 | 8-O-15 | 1.2227E+02 | 8-O-15(A,G),,WID/STR |  | Data | Delete? Property of 19Ne formed by 10F(3He,5)19Ne. |
| C1707.003 | 8-O-15 | 1.2227E+02 | 8-O-15(A,G)10-NE-19,,SGV,,MXW |  | Data | Delete? Property of 19Ne formed by 10F(3He,5)19Ne. |
| C1758.003 | 8-O-14 | 7.0621E+01 | 8-O-14(A,P)9-F-17,,SGV,,MXW/MSC | Inverse kinematics |  |  |
| C1813.002.1 | 15-P-29 | 4.1020E+00 | 15-P-29(P,0),,EN |  | Data | Delete? Property of 30S formed by 32S(p,t)30S. |
| C1813.002.2 | 15-P-29 | 4.1020E+00 | 15-P-29(P,EL),,WID |  | Data | Delete? Property of 30S formed by 32S(p,t)30S. |
| C1813.002.3 | 15-P-29 | 4.1020E+00 | 15-P-29(P,G),,WID |  | Data | Delete? Property of 30S formed by 32S(p,t)30S. |
| C1813.002.4 | 15-P-29 | 4.1020E+00 | 15-P-29(P,G),,WID/STR |  | Data | Delete? Property of 30S formed by 32S(p,t)30S. |
| C1869.003 | 16-S-30 | 1.1798E+00 | 16-S-30(A,P)17-CL-33,PAR,SIG | Inverse reaction | ANALYSIS | Add DTBAL. |
| C1923.002 | 9-F-27 | 5.0000E-03 | 9-F-27(4-BE-9,X)8-O-26,PAR,SIG | Inverse kinematics |  |  |
| C1923.003 | 9-F-27 | 5.0000E-03 | 9-F-27(4-BE-9,X)8-O-25,,SIG | Inverse kinematics |  |  |
| C1923.004 | 9-F-27 | 5.0000E-03 | 9-F-27(4-BE-9,0),,EN | Inverse kinematics |  |  |
| C1932.003 | 10-NE-18 | 1.6642E+00 | 10-NE-18(A,P)11-NA-21,PAR,SIG | Inverse reaction | ANALYSIS | Add DTBAL. |
| C1932.004 | 10-NE-18 | 1.6642E+00 | 10-NE-18(A,P)11-NA-21,PAR,SGV,,MXW | Inverse reaction | ANALYSIS | Add DTBAL. |
| C1943.002 | 8-O-14 | 7.0621E+01 | 8-O-14(A,P)9-F-17,PAR,SGV,,MXW/MSC |  | Data | Delete? Property of 18Ne formed by 16O(3He,n)18Ne. |
| C2031.002 | 6-C-11 | 1.2204E+03 | 6-C-11(P,G)7-N-12,,SIG,,SFC |  | Data | Delete? Property of 12N formed by Be(13O,12N) |
| C2040.003.1 | 15-P-29 | 4.1020E+00 | 15-P-29(P,0),,EN |  | Data | Delete? Property of 30S formed by 32S(p,t)30S. |
| C2040.003.2 | 15-P-29 | 4.1020E+00 | 15-P-29(P,0),,J |  | Data | Delete? Property of 30S formed by 32S(p,t)30S. |
| C2040.003.3 | 15-P-29 | 4.1020E+00 | 15-P-29(P,0),,PTY |  | Data | Delete? Property of 30S formed by 32S(p,t)30S. |
| C2040.003.4 | 15-P-29 | 4.1020E+00 | 15-P-29(P,EL),,WID |  | Data | Delete? Property of 30S formed by 32S(p,t)30S. |
| C2040.003.5 | 15-P-29 | 4.1020E+00 | 15-P-29(P,G),,WID |  | Data | Delete? Property of 30S formed by 32S(p,t)30S. |
| C2040.003.6 | 15-P-29 | 4.1020E+00 | 15-P-29(P,G),,WID/STR |  | Data | Delete? Property of 30S formed by 32S(p,t)30S. |
| C2040.004 | 15-P-29 | 4.1020E+00 | 15-P-29(P,G)16-S-30,,SGV |  | Data | Delete? Property of 30S formed by 32S(p,t)30S. |
| C2090.008.1 | 9-F-17 | 6.4370E+01 | 9-F-17(P,G)10-NE-18,DI,SGV |  | Data | Delete? Property of 18Ne via its mirror 18O formed by 13C(17O,18O)12C. |
| C2090.008.2 | 9-F-17 | 6.4370E+01 | 9-F-17(P,G)10-NE-18,,SGV,,MSC |  | Data | Delete? Property of 18Ne via its mirror 18O formed by 13C(17O,18O)12C. |
| C2090.008.3 | 9-F-17 | 6.4370E+01 | 9-F-17(P,G)10-NE-18,,SGV |  | Data | Delete? Property of 18Ne via its mirror 18O formed by 13C(17O,18O)12C. |
| C2204.002 | 5-B-13 | 1.7160E-02 | 5-B-13(4-BE-9,X)4-BE-13,,SIG | Inverse kinematics |  |  |
| C2204.003.1 | 5-B-13 | 1.7160E-02 | 5-B-13(N,0),,EN |  | Data | Delete? Property of 13Be formed by 9Be(13B,13Be). |
| C2204.003.2 | 5-B-13 | 1.7160E-02 | 5-B-13(N,P),,WID |  | Data | Delete? Property of 13Be formed by 9Be(13B,13Be). |
| C2204.003.3 | 5-B-13 | 1.7160E-02 | 5-B-13(N,P),,J |  | Data | Delete? Property of 13Be formed by 9Be(13B,13Be). |
| C2204.003.4 | 5-B-13 | 1.7160E-02 | 5-B-13(N,P),,PTY |  | Data | Delete? Property of 13Be formed by 9Be(13B,13Be). |
| C2217.002 | 3-LI-11 | 8.7500E-03 | 3-LI-11(P,EL)3-LI-11,,DA | Inverse kinematics |  |  |
| C2217.003 | 3-LI-11 | 8.7500E-03 | 3-LI-11(P,D)3-LI-10,PAR,DA | Inverse kinematics |  |  |
| C2267.002.1 | 15-P-30 | 1.5000E+02 | 15-P-30(P,G)16-S-31,,SIG,,RES |  | Data | Delete? Property of 31S formed by 30P(d,n)31S. |
| C2267.002.2 | 15-P-30 | 1.5000E+02 | 15-P-30(P,G),,WID/STR |  | Data | Delete? Property of 31S formed by 30P(d,n)31S. |
| C2269.002.1 | 16-S-31 | 2.5534E+00 | 16-S-31(P,G),,WID |  | Data | Delete? Property of 32Cl formed by 10B(24Mg,2n)32Cl. |
| C2269.002.2 | 16-S-31 | 2.5534E+00 | 16-S-31(P,EL),,WID |  | Data | Delete? Property of 32Cl formed by 10B(24Mg,2n)32Cl. |
| C2269.002.3 | 16-S-31 | 2.5534E+00 | 16-S-31(P,EL),,WID/STR |  | Data | Delete? Property of 32Cl formed by 10B(24Mg,2n)32Cl. |
| C2269.003 | 16-S-31 | 2.5534E+00 | 16-S-31(P,G)17-CL-32,,SGV |  | Data | Delete? Property of 32Cl formed by 10B(24Mg,2n)32Cl. |
| C2277.003 | 9-F-17 | 6.4370E+01 | 9-F-17(P,EL),,WID |  | Data | Delete? Property of 18Ne formed by 17F(d,n)18Ne. |
| C2277.005.1 | 9-F-17 | 6.4370E+01 | 9-F-17(P,G)10-NE-18,DI,SGV |  | Data | Delete? Property of 18Ne formed by 17F(d,n)18Ne. |
| C2277.005.2 | 9-F-17 | 6.4370E+01 | 9-F-17(P,G)10-NE-18,,SGV |  | Data | Delete? Property of 18Ne formed by 17F(d,n)18Ne. |
| C2284.002.1 | 19-K-38 | 4.5906E+02 | 19-K-38(P,0),,EN | Inverse kinematics |  |  |
| C2290.003 | 19-K-47 | 1.7380E+01 | 19-K-47(14-SI-28,FUS),,SIG,ER | Inverse kinematics |  |  |
| C2292.002.1 | 10-NE-19 | 1.7257E+01 | 10-NE-19(P,0),,EN | Inverse kinematics |  |  |
| C2292.002.2 | 10-NE-19 | 1.7257E+01 | 10-NE-19(P,G),,WID | Inverse kinematics |  |  |
| C2353.002 | 9-F-21 | 4.1580E+00 | 9-F-21(D,P)9-F-22,PAR,DA | Inverse kinematics |  |  |
| C2354.002 | 8-O-24 | 7.7400E-02 | 8-O-24(4-BE-9,X)8-O-23,,SIG | Inverse kinematics |  |  |
| C2354.003 | 8-O-24 | 7.7400E-02 | 8-O-24(4-BE-9,X)8-O-22,,SIG | Inverse kinematics |  |  |
| C2386.003 | 19-K-38 | 4.5906E+02 | 19-K-38(P,G),,WID/STR |  | Data | Delete? Property of 39Ca formed by 40Ca(h,a)39Ca. |
| C2396.004 | 50-SN-128 | 3.5442E+03 | 50-SN-128(D,P)50-SN-129,PAR,DA | Inverse kinematics |  |  |
| C2396.005 | 50-SN-128 | 3.5442E+03 | 50-SN-128(D,P)50-SN-129,PAR,DA | Inverse kinematics |  |  |
| C2454.002 | 19-K-38 | 4.5906E+02 | 19-K-38(P,G),,WID/STR |  | Data | Delete? Property of 39Ca formed by 40Ca(h,a)39Ca. |
| C2458.002 | 13-AL-23 | 4.4600E-01 | 13-AL-23(D,N)14-SI-24,PAR,SIG | Inverse kinematics |  |  |
| C2458.003 | 13-AL-23 | 4.4600E-01 | 13-AL-23(D,N)14-SI-24,,SIG | Inverse kinematics |  |  |
| C2458.004 | 13-AL-23 | 4.4600E-01 | 13-AL-23(D,N)14-SI-24,,DA | Inverse kinematics |  |  |
| C2584.002 | 12-MG-22 | 3.8745E+00 | 12-MG-22(A,P)13-AL-25,,SIG | Inverse kinematics |  |  |
| C2681.004 | 13-AL-26-G | (Illegal -G) | 13-AL-26-G(P,G)14-SI-27,PAR,SGV |  | Data | Delete? Property of 27Si formed by 12C(16O,n)27Si. |
| C2681.005 | 13-AL-26-G | (Illegal -G) | 13-AL-26-G(P,G)14-SI-27,PAR,SGV |  | Data | Delete? Property of 27Si formed by 12C(16O,n)27Si. |
| C2681.006 | 13-AL-26-G | (Illegal -G) | 13-AL-26-G(P,G)14-SI-27,PAR,SGV |  | Data | Delete? Property of 27Si formed by 12C(16O,n)27Si. |
| C2681.007 | 13-AL-26-G | (Illegal -G) | 13-AL-26-G(P,G)14-SI-27,PAR,SGV |  | Data | Delete? Property of 27Si formed by 12C(16O,n)27Si. |
| C2681.008 | 13-AL-26-G | (Illegal -G) | 13-AL-26-G(P,G)14-SI-27,PAR,SGV |  | Data | Delete? Property of 27Si formed by 12C(16O,n)27Si. |
| C2681.009 | 13-AL-26-G | (Illegal -G) | 13-AL-26-G(P,G)14-SI-27,PAR,SGV |  | Data | Delete? Property of 27Si formed by 12C(16O,n)27Si. |
| C2690.002 | 36-KR-96 | 8.0000E-02 | 36-KR-96(P,EL)36-KR-96,,DA |  | REACTION | SF1, SF4: 36-KR-96 -> 36-KR-86 |
| C2690.003.1 | 36-KR-96 | 8.0000E-02 | 36-KR-96(P,0),,EN |  | REACTION | SF1: 36-KR-96 -> 36-KR-86 |
| C2690.003.2 | 36-KR-96 | 8.0000E-02 | 36-KR-96(P,0),,L |  | REACTION | SF1: 36-KR-96 -> 36-KR-86 |
| C2690.003.3 | 36-KR-96 | 8.0000E-02 | 36-KR-96(P,0),,J |  | REACTION | SF1: 36-KR-96 -> 36-KR-86 |
| C2690.003.4 | 36-KR-96 | 8.0000E-02 | 36-KR-96(P,TOT),,WID |  | REACTION | SF1: 36-KR-96 -> 36-KR-86 |
| D0087.003.1 | 10-NE-19 | 1.7257E+01 | 10-NE-19(P,G),,WID/STR | Inverse kinematics |  |  |
| D0087.003.2 | 10-NE-19 | 1.7257E+01 | 10-NE-19(P,G),,WID/STR | Inverse kinematics |  |  |
| D0352.004 | 10-NE-18 | 1.6642E+00 | 10-NE-18(A,EL)10-NE-18,,DA | Inverse kinematics |  |  |
| D0354.003 | 2-HE-6 | 8.0692E-01 | 2-HE-6(P,T)2-HE-4,,DA | Inverse kinematics |  |  |
| D0466.002 | 16-S-28 | 1.2500E-01 | 16-S-28(A,EL)16-S-28,,DA |  | REACTION | SF1, SF4: 16-S-28 -> 14-SI-28 |
| D0477.002 | 7-N-13 | 5.9790E+02 | 7-N-13(P,EL)7-N-13,,DA | Inverse kinematics |  |  |
| E2057.004.1 | 7-N-13 | 5.9790E+02 | 7-N-13(P,0),,EN | Inverse kinematics |  |  |
| E2057.004.2 | 7-N-13 | 5.9790E+02 | 7-N-13(P,0),,J | Inverse kinematics |  |  |
| E2057.004.3 | 7-N-13 | 5.9790E+02 | 7-N-13(P,EL),,WID | Inverse kinematics |  |  |
| E2140.002 | 3-LI-8 | 8.3870E-01 | 3-LI-8(D,T)3-LI-7,,DA | Inverse kinematics |  |  |
| E2140.003 | 3-LI-8 | 8.3870E-01 | 3-LI-8(D,T)3-LI-7,,SIG | Inverse kinematics |  |  |
| E2146.002 | 5-B-12 | 2.0200E-02 | 5-B-12(A,N)7-N-15,,SIG | Inverse kinematics |  |  |
| E2488.002 | 3-LI-9 | 1.7820E-01 | 3-LI-9(D,HE3)2-HE-8,PAR,DA | Inverse kinematics |  |  |
| E2488.003 | 3-LI-11 | 8.7500E-03 | 3-LI-11(D,HE3)2-HE-10,PAR,DA | Inverse kinematics |  |  |
| E2488.004 | 3-LI-11 | 8.7500E-03 | 3-LI-11(D,HE3)2-HE-10,PAR,DA | Inverse kinematics |  |  |
| F0738.002 | 8-O-22 | 2.2500E+00 | 8-O-22(P,EL)8-O-22,,DA | Inverse kinematics |  |  |
| F0738.003 | 8-O-22 | 2.2500E+00 | 8-O-22(P,INL)8-O-22,PAR,DA | Inverse kinematics |  |  |
| F0746.002 | 2-HE-6 | 8.0692E-01 | 2-HE-6(P,G)3-LI-7,,DE | Inverse kinematics |  |  |
| F0746.003 | 2-HE-6 | 8.0692E-01 | 2-HE-6(P,G)3-LI-7,,DA | Inverse kinematics |  |  |
| F0776.002 | 47-AG-108 | 1.4292E+02 | 47-AG-108(7-N-14,X)1-H-1,,DA/DE |  | REACTION | SF1: 47-AG-108 -> 47-AG-0 |
| F0776.003 | 47-AG-108 | 1.4292E+02 | 47-AG-108(7-N-14,X)1-H-2,,DA/DE |  | REACTION | SF1: 47-AG-108 -> 47-AG-0 |
| F0776.004 | 47-AG-108 | 1.4292E+02 | 47-AG-108(7-N-14,X)1-H-3,,DA/DE |  | REACTION | SF1: 47-AG-108 -> 47-AG-0 |
| F0818.004 | 8-O-20 | 1.3510E+01 | 8-O-20(P,EL)8-O-20,,DA | Inverse kinematics |  |  |
| F0818.005 | 8-O-20 | 1.3510E+01 | 8-O-20(P,INL)8-O-20,PAR,DA | Inverse kinematics |  |  |
| O1326.003 | 3-LI-8 | 8.3870E-01 | 3-LI-8(P,EL)3-LI-8,,DT | Inverse kinematics |  |  |
| O1326.004 | 3-LI-9 | 1.7820E-01 | 3-LI-9(P,EL)3-LI-9,,DT | Inverse kinematics |  |  |
| O1326.005 | 3-LI-11 | 8.7500E-03 | 3-LI-11(P,EL)3-LI-11,,DT | Inverse kinematics |  |  |
| O2025.003 | 7-N-13 | 5.9790E+02 | 7-N-13(P,G),,WID | Inverse kinematics |  |  |
| O2025.004 | 7-N-13 | 5.9790E+02 | 7-N-13(P,TOT),,WID | Inverse kinematics |  |  |
| O2025.006.1 | 7-N-13 | 5.9790E+02 | 7-N-13(P,G)8-O-14,,SGV | Inverse kinematics |  |  |
| O2025.006.2 | 7-N-13 | 5.9790E+02 | 7-N-13(P,G)8-O-14,,SGV | Inverse kinematics |  |  |
| O2047.004 | 13-AL-23 | 4.4600E-01 | 13-AL-23(P,G)14-SI-24,,SGV | Asymptotic normalization constant | ANALYSIS | Add ANC. |
| O2069.002 | 6-C-16 | 7.5000E-01 | 6-C-16(P,EL)6-C-16,,DA,,RTH | Inverse kinematics |  |  |
| O2069.003 | 6-C-16 | 7.5000E-01 | 6-C-16(D,EL)6-C-16,,DA,,RTH | Inverse kinematics |  |  |
| O2232.005 | 8-O-15 | 1.2227E+02 | 8-O-15(P,EL)8-O-15,,DA | Inverse kinematics |  |  |
| O2232.006 | 8-O-14 | 7.0621E+01 | 8-O-14(P,EL)8-O-14,,DA | Inverse kinematics |  |  |
| O2249.002 | 17-CL-34 | 1.5267E+00 | 17-CL-34(P,0),,EN |  | Data | Delete? Property of 35Ar formed by 36Ar(d,t)35Ar. |
| O2323.002 | 8-O-14 | 7.0621E+01 | 8-O-14(P,EL)8-O-14,,DA | Inverse kinematics |  |  |
| O2340.002 | 10-NE-19 | 1.7257E+01 | 10-NE-19(P,G),PAR,WID/STR | Inverse kinematics |  |  |
| S0063.004 | 8-O-14 | 7.0621E+01 | 8-O-14(A,P)9-F-17,,SGV,,MXW/MSC |  | Data | Delete? Property of 18Ne formed by 1H(17F,17F)1H. |
| S0188.002 | 6-C-15 | 2.4490E+00 | 6-C-15(8-O-18,X)6-C-13,,SIG |  | REACTION | Must be 6-C-0(6-C-15,X)6-C-13,,SIG |
| S0188.003 | 6-C-16 | 7.5000E-01 | 6-C-16(8-O-18,X)6-C-14,,SIG |  | REACTION | Must be 6-C-0(6-C-16,X)6-C-14,,SIG |