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CP-C/165

DATE: October 30, 1986

TO: Distribution

FROM: V. McLane VM

SUBJECT: Multiplicity Factors (REACTION Subfield 3)

We have found some reactions which have been coded using multiplicity factors greater than 100 (A0177, subentries 5, 9, 13). We store the reaction fields for retrieval purposes as integers of the form MZZZAAAI, where M is the multiplicity factor. Multiplicity factors greater than 99 cause an integer overflow.

We propose limiting the multiplicity factor to 99. For those few cases where it exceeds this value, the Variable Number of Product Nucleons formulation could be used (see attached).

Charles L. Dunford

Charles L. Dunford

Distribution:

F. E. Chukreev	J. J. Schmidt
B. S. Ishkhanov	H. Tanaka
V. Manokhin	N. Tubbs
S. Pearlstein	NNDC (5)

cc. Arcilla
Cullen
Gandarias
Goulo
Lammer
Lemmel
Okamoto
Oshomenwe
Schmidt
Schwerer
Seito
Wang Dahai

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÷TRANS                  Ø      861Ø3Ø
ENTRY                A0177     85Ø8Ø8
SUBENT            A0177ØØ1     85Ø8Ø8
BIB                     14         32
TITLE          FORMATION OF TRITIUM IN NUCLEAR REACTIONS INDUCED
               BY DEUTERONS AND ALPHA-PARTICLES.
AUTHOR         (M.MERKEL,M.MUNZEL)
REFERENCE      (J,NP/A,33,173,8Ø)
               (T,MERKEL,821Ø). THE SOME ADDITIONAL MEASUREMENT.
INSTITUTE      (2GERTHS)
FACILITY       (ISOCY,2GERKFK)
METHOD         (STTA,BCINT,EXTB,REC)
DETECTOR       (PROPC)
PART-DET       (B-)
COMMENT        /BY AUTHOR/.AFTER THE IRRADIATION FOILS WERE HEATED
               IN HIDROGEN ATMOSPHERE AT 95Ø-1ØØØ DEGREE AND THE
               ACTIVITY OF THE EXTRACTED TRITIUM WAS DETERMINED IN
               A PROPORTIONAL COUNTER USING METHANE AS A COUNTING
               GAS. THE TRITIUM ACTIVITY WAS MEASURED SEVERAL DAYS
               AFTER IRRADIATIONS, SO SHORT-LIVED ACTIVITIES WERE
               NO LONGER PRESENT.
SAMPLE         STACK OF AL, V, NB AND AU FOILS (PURITY BETTER THAN
               99.99 PER CENT)
ADD-RES        (COMP)
               (RANGE)
               (THEO)
ERR-ANALYS     (ERR-S).STATISTICAL ERROR.
               (DATA-ERR).THE STANDARD DEVIATIONS OF CURRENT
               INTEGRATION MEASUREMENTS.
HISTORY        (83Ø325C)
               (83Ø6Ø6U)
               (83Ø528A)
               (83Ø6Ø2U)
               (84Ø9Ø2A). SEE MEMO CP-D/13Ø.
               (84Ø9Ø4U)
ANALYSIS       (DECAY)
ENDBIB                  32          Ø
COMMON                   1          3
DATA-ERR
PER-CENT
 8.ØØØØE+ØØ
ENDCOMMON                3          Ø
ENDSUBENT               39          Ø
SUBENT            A0177ØØ5     82Ø1Ø4
BIB                      2          2
REACTION       (79-AU-197(D,XN+YP)1-H-3,IND/UND,TTY,,,EXP)
FLAG           (1.) THESE DATA FROM MERKEL'S THESIS (P.21).
ENDBIB                   2          Ø
COMMON                   3          3
ERR-S          N-OUT      P-OUT
PER-CENT       NO-DIM     NO-DIM
 1.5ØØØE+Ø1    117.         79.
ENDCOMMON                3          Ø
DATA                     3          8
EN             DATA       FLAG
MEV            NUC/PART   NO-DIM
 8.98ØØE+Ø1  1.12ØØE-Ø3  1.ØØØØE+ØØ
 7.ØØØØE+Ø1  5.84ØØE-Ø4  1.ØØØØE+ØØ
 6.ØØØØE+Ø1  4.79ØØE-Ø4  1.ØØØØE+ØØ
 5.Ø8ØØE+Ø1  2.69ØØE-Ø4
 3.8ØØØE+Ø1  1.46ØØE-Ø4
 2.4ØØØE+Ø1  5.Ø8ØØE-Ø4
 1.8ØØØE+Ø1  1.97ØØE-Ø5
 1.2ØØØE+Ø1  6.8ØØØE-Ø7
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 1ØØØØ  Ø     Ø
A0177ØØØ     1
A0177ØØ1     1
A0177ØØ1     2
A0177ØØ1     3
A0177ØØ1     4
A0177ØØ1     5
A0177ØØ1     6
A0177ØØ1     7
A0177ØØ1     8
A0177ØØ1     9
A0177ØØ1    1Ø
A0177ØØ1    11
A0177ØØ1    12
A0177ØØ1    13
A0177ØØ1    14
A0177ØØ1    15
A0177ØØ1    16
A0177ØØ1    17
A0177ØØ1    18
A0177ØØ1    19
A0177ØØ1    2Ø
A0177ØØ1    21
A0177ØØ1    22
A0177ØØ1    23
A0177ØØ1    24
A0177ØØ1    25
A0177ØØ1    26
A0177ØØ1    27
A0177ØØ1    28
A0177ØØ1    29
A0177ØØ1    3Ø
A0177ØØ1    31
A0177ØØ1    32
A0177ØØ1    33
A0177ØØ1    34
A0177ØØ1    35
A0177ØØ1    36
A0177ØØ1    37
A0177ØØ1    38
A0177ØØ1    39
A0177ØØ1    4Ø
A0177ØØ199999
A0177Ø05     1
A0177Ø05     2
A0177Ø05     3
A0177Ø05     4
A0177Ø05     5
A0177Ø05     6
A0177Ø05     7
A0177Ø05     8
A0177Ø05     9
A0177Ø05    1Ø
A0177Ø05    11
A0177Ø05    12
A0177Ø05    13
A0177Ø05    14
A0177Ø05    15
A0177Ø05    16
A0177Ø05    17
A0177Ø05    18
A0177Ø05    19
A0177Ø05    2Ø
A0177Ø05    21
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ENDDATA                10          Ø                    A0177005   22
ENDSUBENT              21          Ø                    A017700599999
SUBENT          A0177009      82Ø1Ø4                    A0177009    1
BIB                    2           2                    A0177009    2
REACTION    (79-AU-197(A,XN+YP)1-H-3,IND/UND,TTY,,,EXP) A0177009    3
FLAG        (1.) THESE DATA FROM MERKEL'S THESIS (P.23). A0177009    4
ENDBIB                 2          Ø                     A0177009    5
COMMON                 3           3                    A0177009    6
ERR-S       N-OUT       P-OUT                           A0177009    7
PER-CENT    NO-DIM      NO-DIM                          A0177009    8
 1.5ØØØE+Ø1 118.         8Ø.                            A0177009    9
ENDCOMMON              3          Ø                     A0177009   1Ø
DATA                   3           9                    A0177009   11
EN          DATA        FLAG                            A0177009   12
MEV         NUC/PART    NO-DIM                          A0177009   13
 1.Ø2ØØE+Ø2 3.11ØØE-Ø4 1.ØØØØE+ØØ                       A0177009   14
 9.ØØØØE+Ø1 2.Ø9ØØE-Ø4 1.ØØØØE+ØØ                       A0177009   15
 8.ØØØØE+Ø1 1.43ØØE-Ø4 1.ØØØØE+ØØ                       A0177009   16
 7.ØØØØE+Ø1 7.45ØØE-Ø5 1.ØØØØE+ØØ                       A0177009   17
 6.ØØØØE+Ø1 3.54ØØE-Ø5 1.ØØØØE+ØØ                       A0177009   18
 5.ØØØØE+Ø1 1.49ØØE-Ø5                                  A0177009   19
 4.ØØØØE+Ø1 4.79ØØE-Ø6                                  A0177009   2Ø
 3.ØØØØE+Ø1 4.5ØØØE-Ø7                                  A0177009   21
 2.5ØØØE+Ø1 7.55ØØE-Ø8                                  A0177009   22
ENDDATA               11          Ø                    A0177009   23
ENDSUBENT             22          Ø                    A017700999999
SUBENT          A0177Ø13      82Ø1Ø4                    A0177Ø13    1
BIB                    1           1                    A0177Ø13    2
REACTION    (79-AU-197(D,XN+YP)1-H-3,IND/UND,SIG,,,EXP) A0177Ø13    3
ENDBIB                 1          Ø                     A0177Ø13    4
COMMON                 3           3                    A0177Ø13    5
ERR-S       N-OUT       P-OUT                           A0177Ø13    6
PER-CENT    NO-DIM      NO-DIM                          A0177Ø13    7
 2.ØØØØE+Ø1117.          79.                            A0177Ø13    8
ENDCOMMON              3          Ø                     A0177Ø13    9
DATA                   3           5                    A0177Ø13   1Ø
EN-MAX      EN-MIN      DATA                            A0177Ø13   11
MEV         MEV         MB                              A0177Ø13   12
 5.Ø8ØØE+Ø1 3.8ØØØE+Ø1 3.29ØØE+Ø1                       A0177Ø13   13
 3.8ØØØE+Ø1 2.4ØØØE+Ø1 3.ØØØØE+Ø1                       A0177Ø13   14
 2.4ØØØE+Ø1 1.8ØØØE+Ø1 2.97ØØE+Ø1                       A0177Ø13   15
 1.8ØØØE+Ø1 1.2ØØØE+Ø1 2.26ØØE+Ø1                       A0177Ø13   16
 1.2ØØØE+Ø1 9.8ØØØE+ØØ 2.69ØØE+ØØ                       A0177Ø13   17
ENDDATA                7          Ø                     A0177Ø13   18
ENDSUBENT             17          Ø                     A017701399999
ENDENTRY               4          Ø                     A017799999999
ENDTRANS               1          Ø                     A999999999999
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