

**NEA Data Bank
Le Seine St-Germain
12, boulevard des Iles
92130 Issy-les-Moulineaux
FRANCE**

Email: exfor@nea.fr
or cinda@nea.fr

Tel: +33 (0) 1 45 24 10 84
Fax: +33 (0) 1 45 24 11 28

MEMO CP-N/64

DATE: 6 November 2007
TO: See distribution list below
FROM: H. Henriksson
SUBJECT: List of MLT usage and UNIT addition (Dictionary 25)

Dear colleagues,

Below follows a list of how MLT is used in EXFOR. This is to give some background to the discussion on EXFOR 22960 in batch PRELIM.2187, and from the working paper WP2007-19. A new unit code is also proposed according to the conclusion C15 from the last NRDC meeting: PT/RCT/MEV (particle per reaction per MeV)

Best wishes,
/ Hans Henriksson

Distribution:

HUNGARY

s.takacs@atomki.hu
tarkanyi@atomki.hu

INDIA

ganesan@magnum.barc.ernet.in

JAPAN

chiba@earth.sgu.ac.jp
katakura.junichi@jaea.go.jp
kato@nucl.sci.hokudai.ac.jp
ohnishi@nucl.sci.hokudai.ac.jp
ohtsuka@nucl.sci.hokudai.ac.jp

KOREA (REPUBLIC OF)

yolee@kaeri.re.kr

P.R. OF CHINA

gezg@ciae.ac.cn
hongwei@ciae.ac.cn
zhuangyx@ciae.ac.cn

RUSSIAN FEDERATION

chukreev@polyn.kiae.su
blokhin@ippe.obninsk.ru
samaev@obninsk.ru
manokhin@ippe.obninsk.ru
mmarina@ippe.obninsk.ru
taova@expd.vniief.ru
varlamov@depni.sinp.msu.ru

UNITED STATES OF AMERICA

mwherman@bnl.gov
oblozinsky@bnl.gov

International Organisations

s.dunaeva@iaea.org
a.mengoni@iaea.org
a.l.nichols@iaea.org
schwerer@iaeand.iaea.or.at
v.zerkin@iaea.org
hasegawa@nea.fr
henriksson@nea.fr
claes.nordborg@oecd.org
nicolas.soppera@oecd.org

Reference of MLT to SF3 or to SF4. SF3 = Fission and X

1) 3-LI-0(A,X)0-NN-1,,MLT,,TT,DERIV				18) 7-N-0(P,X)6-C-11,PAR,MLT,G,TT			
1 C0595004 1979 J.K.Bair+	3.50e+6	1	J,NSE,71,18,1979	18 O1234004 1985 V.A.Kuz`menko+	9.10e+6	1	J,JRN,89,447,1985
2) 3-LI-0(P,X)0-NN-1,,MLT,,TT				19) 8-O-0(P,X)7-N-13,PAR,MLT,G,TT			
2 O0116016 1970 V.K.Daruga+	2.35e+7	1	J,AE,29,456,70	19 O1234005 1985 V.A.Kuz`menko+	9.10e+6	1	J,JRN,89,447,1985
3) 3-LI-6(A,X)0-NN-1,,MLT,,TT				20) 8-O-CMP(A,X)0-NN-1,,MLT,,TT			
3 C0595002 1979 J.K.Bair+	7.00e+6	1	J,NSE,71,18,1979	20 F0341007 1983 G.J.H.Jacobs+	4.00e+6	5.50e+6	4 J,ANE,10,541,1983
4) 3-LI-7(A,X)0-NN-1,,MLT,,TT				21) 9-F-19(A,X)0-NN-1,,MLT,,TT			
4 C0595003 1979 J.K.Bair+	3.50e+6	1	J,NSE,71,18,1979	21 C0595009 1979 J.K.Bair+	3.50e+6	1	J,NSE,71,18,1979
5) 4-BE-9(A,X)0-NN-1,,MLT,,TT				22) 9-F-CMP(A,X)0-NN-1,,MLT,,TT			
5 C0595005 1979 J.K.Bair+	3.00e+6	1	J,NSE,71,18,1979	22 F0341009 1983 G.J.H.Jacobs+	4.00e+6	5.50e+6	4 J,ANE,10,541,1983
6) 4-BE-9(P,X)0-NN-1,,MLT,,TT				23) 12-MG-0(A,X)0-NN-1,,MLT,,TT			
6 O0116002 1970 V.K.Daruga+	1.15e+7	2.35e+7	2 J,AE,29,456,70	23 F0341011 1983 G.J.H.Jacobs+	4.00e+6	5.50e+6	4 J,ANE,10,541,1983
7) 5-B-0(A,X)0-NN-1,,MLT,,TT				24) 12-MG-0(P,X)0-NN-1,,MLT,,TT			
7 C0595008 1979 J.K.Bair+	3.50e+6	1	J,NSE,71,18,1979	24 C0595010 1979 J.K.Bair+	4.00e+6	1	J,NSE,71,18,1979
8) 5-B-0(P,X)6-C-11,PAR,MLT,G,TT				25) 13-AL-27(A,X)0-NN-1,,MLT,,TT			
8 O1234002 1985 V.A.Kuz`menko+	9.10e+6	1	J,JRN,89,447,1985	25 F0341013 1983 G.J.H.Jacobs+	4.00e+6	5.50e+6	4 J,ANE,10,541,1983
9) 5-B-10(A,X)0-NN-1,,MLT,,TT				26) 13-AL-27(P,X)0-NN-1,,MLT,,TT			
9 C0595006 1979 J.K.Bair+	3.50e+6	1	J,NSE,71,18,1979	26 O0116004 1970 V.K.Daruga+	1.15e+7	2.35e+7	2 J,AE,29,456,70
10) 5-B-11(A,X)0-NN-1,,MLT,,TT				27) 14-SI-0(A,X)0-NN-1,,MLT,,TT			
10 C0595007 1979 J.K.Bair+	3.50e+6	1	J,NSE,71,18,1979	27 F0341015 1983 G.J.H.Jacobs+	4.00e+6	5.50e+6	4 J,ANE,10,541,1983
11) 5-B-CMP(A,X)0-NN-1,,MLT,,TT				28) 16-S-0(P,X)17-CL-34-M,PAR,MLT,G,TT			
11 F0341003 1983 G.J.H.Jacobs+	4.00e+6	5.50e+6	4 J,ANE,10,541,1983	28 O1234006 1985 V.A.Kuz`menko+	9.10e+6	1	J,JRN,89,447,1985
12) 6-C-0(A,X)0-NN-1,,MLT,,TT				29) 20-CA-0(P,X)21-SC-44-G,PAR,MLT,G,TT			
12 F0341005 1983 G.J.H.Jacobs+	4.00e+6	5.50e+6	4 J,ANE,10,541,1983	29 O1234007 1985 V.A.Kuz`menko+	9.10e+6	1	J,JRN,89,447,1985
13) 6-C-0(P,X)7-N-13,PAR,MLT,G,TT				30) 22-TI-0(P,X)0-NN-1,,MLT,,TT			
13 O1234003 1985 V.A.Kuz`menko+	9.10e+6	1	J,JRN,89,447,1985	30 O0116006 1970 V.K.Daruga+	1.15e+7	2.35e+7	2 J,AE,29,456,70
14) 6-C-12(P,X)0-NN-1,,MLT,,TT				31) 24-CR-0(P,X)25-MN-52-M,PAR,MLT,G,TT			
14 O0116003 1970 V.K.Daruga+	1.15e+7	2.35e+7	2 J,AE,29,456,70				
15) 6-C-12(P,X)1-H-1,,MLT,P							
15 O0837008 1991 M.Trzaska+	8.00e+8	1.60e+9	2 J,ZP/A,340,325,1991				
16) 6-C-12(P,X)1-PN-0,,MLT,PIN							
16 O0837008 1991 M.Trzaska+	8.00e+8	1.60e+9	2 J,ZP/A,340,325,1991				
17) 6-C-12(P,X)1-PP-0,,MLT,PIP							
17 O0837008 1991 M.Trzaska+	8.00e+8	1.60e+9	2 J,ZP/A,340,325,1991				

34 O1234008 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 2			48) 37-RB-0(P,X)38-SR-85-M,PAR,MLT,G,TT	
32) 26-FE-0(N,X)0-G-0,,MLT,G,AV				52 O1234017 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 2
35 30801004 1983 S.Hlavac+ 5,8311	1.46e+7 3	R,INDC(CSR)-		49) 37-RB-0(P,X)38-SR-87-M,PAR,MLT,G,TT	
36 30571005 1979 R.Antalik+ C,79SMOLENIC,6,277,7906	1.46e+7 1			53 O1234018 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 1
33) 26-FE-0(N,X)0-NN-1,,MLT,G				50) 38-SR-0(P,X)39-Y-86-M,PAR,MLT,G,TT	
37 30801005 1983 S.Hlavac+ 5,8311	1.46e+7 9	R,INDC(CSR)-		54 O1234019 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 1
34) 26-FE-0(P,X)0-NN-1,,MLT,,TT				51) 38-SR-0(P,X)39-Y-87-M,PAR,MLT,G,TT	
38 O0116017 1970 V.K.Daruga+	2.35e+7 1	J,AE,29,456,70		55 O1234020 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 1
35) 28-NI-0(N,X)0-G-0,,MLT,G,AV				52) 40-ZR-0(P,X)41-NB-90-G,PAR,MLT,G,TT	
39 30801007 1983 S.Hlavac+ 5,8311	1.46e+7 7	R,INDC(CSR)-		56 O1234022 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 3
36) 28-NI-0(P,X)0-NN-1,,MLT,,TT				53) 41-NB-93(P,X)0-NN-1,,MLT,,TT	
40 O0116008 1970 V.K.Daruga+	1.15e+7 2.35e+7 2	J,AE,29,456,70		57 O0116010 1970 V.K.Daruga+ J,AE,29,456,70	1.15e+7 2.35e+7 2
37) 28-NI-0(P,X)29-CU-60,PAR,MLT,G,TT				54) 41-NB-93(P,X)1-H-1,,MLT,P	
41 O1234009 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 3			58 O0837009 1991 M.Trzaska+ J,ZP/A,340,325,1991	8.00e+8 1.60e+9 2
38) 28-NI-58(N,X)0-NN-1,,MLT,G				55) 41-NB-93(P,X)1-PN-0,,MLT,PIN	
42 30801008 1983 S.Hlavac+ 5,8311	1.46e+7 8	R,INDC(CSR)-		59 O0837009 1991 M.Trzaska+ J,ZP/A,340,325,1991	8.00e+8 1.60e+9 2
39) 29-CU-0(P,X)0-NN-1,,MLT,,TT				56) 41-NB-93(P,X)1-PP-0,,MLT,PIP	
43 O0116018 1970 V.K.Daruga+	2.35e+7 1	J,AE,29,456,70		60 O0837009 1991 M.Trzaska+ J,ZP/A,340,325,1991	8.00e+8 1.60e+9 2
40) 29-CU-0(P,X)30-ZN-63,PAR,MLT,G,TT				57) 42-MO-0(P,X)43-TC-95-G,PAR,MLT,G,TT	
44 O1234010 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 2			61 O1234024 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 1
41) 30-ZN-0(P,X)0-NN-1,,MLT,,TT				58) 44-RU-0(P,X)45-RH-99-M,PAR,MLT,G,TT	
45 O0116009 1970 V.K.Daruga+	1.15e+7 2.35e+7 2	J,AE,29,456,70		62 O1234025 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 1
42) 30-ZN-0(P,X)31-GA-66,PAR,MLT,G,TT				59) 47-AG-0(P,X)48-CD-107,PAR,MLT,G,TT	
46 O1234011 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 1			63 O1234026 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 1
43) 30-ZN-0(P,X)31-GA-68,PAR,MLT,G,TT				60) 48-CD-0(P,X)0-NN-1,,MLT,,TT	
47 O1234012 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 1			64 O0116011 1970 V.K.Daruga+ J,AE,29,456,70	1.15e+7 2.35e+7 2
44) 31-GA-0(P,X)32-GE-69,PAR,MLT,G,TT				61) 48-CD-0(P,X)49-IN-110-G,PAR,MLT,G,TT	
48 O1234013 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 2			65 O1234027 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 1
45) 32-GE-0(P,X)33-AS-70,PAR,MLT,G,TT				62) 48-CD-0(P,X)49-IN-111-M,PAR,MLT,G,TT	
49 O1234014 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 8			66 O1234028 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 1
46) 32-GE-0(P,X)33-AS-72,PAR,MLT,G,TT				63) 48-CD-0(P,X)49-IN-112-M,PAR,MLT,G,TT	
50 O1234015 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 1			67 O1234029 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 1
47) 32-GE-0(P,X)33-AS-76,PAR,MLT,G,TT				64) 48-CD-0(P,X)49-IN-113-M,PAR,MLT,G,TT	
51 O1234016 1985 V.A.Kuz`menko+ J,JRN,89,447,1985	9.10e+6 1				

68 O1234030 1985 V.A.Kuz`menko+ 9.10e+6 1
J,JRN,89,447,1985

65) 50-SN-0(P,X)51-SB-116-G,PAR,MLT,G,TT

69 O1234032 1985 V.A.Kuz`menko+ 9.10e+6 1
J,JRN,89,447,1985

66) 50-SN-0(P,X)51-SB-117,PAR,MLT,G,TT

70 O1234033 1985 V.A.Kuz`menko+ 9.10e+6 1
J,JRN,89,447,1985

67) 52-TE-0(P,X)53-I-128,PAR,MLT,G,TT

71 O1234034 1985 V.A.Kuz`menko+ 9.10e+6 1
J,JRN,89,447,1985

68) 60-ND-0(P,X)61-PM-150,PAR,MLT,G,TT

72 O1234036 1985 V.A.Kuz`menko+ 9.10e+6 1
J,JRN,89,447,1985

69) 73-TA-181(P,X)0-NN-1,,MLT,,TT

73 O0116012 1970 V.K.Daruga+ 1.15e+7 2.35e+7 2 J,AE,29,456,70

70) 74-W-0(P,X)0-NN-1,,MLT

74 C0554003 1998 M.S.Zucker+ 8.00e+8 1.40e+9 3
J,NSE,129,180,1998

71) 74-W-0(P,X)0-NN-1,,MLT,,TT

75 O0116013 1970 V.K.Daruga+ 1.15e+7 1 J,AE,29,456,70

72) 82-PB-0(P,X)0-NN-1,,MLT

76 C0554002 1998 M.S.Zucker+ 8.00e+8 1.40e+9 4
J,NSE,129,180,1998

73) 82-PB-0(P,X)0-NN-1,,MLT,,TT

77 O0116019 1970 V.K.Daruga+ 2.35e+7 1 J,AE,29,456,70

74) 82-PB-0(P,X)1-H-1,,MLT,P

78 O0837010 1991 M.Trzaska+ 8.00e+8 1.60e+9 2
J,ZP/A,340,325,1991

75) 82-PB-0(P,X)1-PN-0,,MLT,PIN

79 O0837010 1991 M.Trzaska+ 8.00e+8 1.60e+9 2
J,ZP/A,340,325,1991

76) 82-PB-0(P,X)1-PP-0,,MLT,PIP

80 O0837010 1991 M.Trzaska+ 8.00e+8 1.60e+9 2
J,ZP/A,340,325,1991

77) 82-PB-208(AP,X)0-NN-1,,MLT,N,TT

81 O0953022 1998 D.Hilscher+ 3.29e+9 5.88e+9 3
J,NIM/A,414,100,1998

78) 82-PB-208(D,X)0-NN-1,,MLT,N,TT

82 O0953021 1998 D.Hilscher+ 8.92e+8 3.44e+9 4
J,NIM/A,414,100,1998

79) 82-PB-208(KP,X)0-NN-1,,MLT,N,TT

83 O0953020 1998 D.Hilscher+ 2.51e+9 1
J,NIM/A,414,100,1998

80) 82-PB-208(P,X)0-NN-1,,MLT,N

84 O0953016 1998 D.Hilscher+ 4.15e+9 10
J,NIM/A,414,100,1998

81) 82-PB-208(P,X)0-NN-1,,MLT,N,TT

85 O0953018 1998 D.Hilscher+ 1.16e+9 4.11e+9 5
J,NIM/A,414,100,1998

82) 82-PB-208(PIN,X)0-NN-1,,MLT,N,TT

86 O0953023 1998 D.Hilscher+ 3.88e+9 4.87e+9 2
J,NIM/A,414,100,1998

83) 82-PB-208(PIP,X)0-NN-1,,MLT,N,TT

87 O0953019 1998 D.Hilscher+ 1.84e+9 4.80e+9 4
J,NIM/A,414,100,1998

84) 83-BI-209(P,X)0-NN-1,,MLT,,TT

88 O0116014 1970 V.K.Daruga+ 1.15e+7 1 J,AE,29,456,70

85) 92-U-0(P,X)0-NN-1,,MLT,,TT

89 O0116015 1970 V.K.Daruga+ 1.15e+7 2.35e+7 2
J,AE,29,456,70

86) 92-U-238(P,F),,MLT,N

90 O0941004 2001 V.A.Rubchenya+ 2.00e+7 6.00e+7 4
J,NIM/A,463,653,2001

87) 92-U-238(P,F)MASS,,MLT,N/FF

91 O0941003 2001 V.A.Rubchenya+ 2.00e+7 6.00e+7 76
J,NIM/A,463,653,2001

88) 92-U-238(P,X)0-NN-1,,MLT,N,TT

92 O0953024 1998 D.Hilscher+ 1.23e+9 4.17e+9 3
J,NIM/A,414,100,1998

89) 92-U-238(PIP,X)0-NN-1,,MLT,N,TT

93 O0953025 1998 D.Hilscher+ 3.90e+9 4.88e+9 2
J,NIM/A,414,100,1998

90) 98-CF-252(0,F)ELEM,,MLT,G,AV

94 30968002 1991 Raghav Varma+ 9
J,PR/C,43,(4),1850,9104