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Memo CP-D/717 (Revised)

Date: 24 October 2011
To: Distribution
From: N. Otsuka

Subject: **Proton-induced reaction cross sections missing in EXFOR**
Reference: Memo CP-D/521

Proton-induced reaction cross sections are useful for optical potential analysis, and should be compiled in the EXFOR library.

Following two previous compilations of directly measured proton-nucleus reaction and total cross sections by W. Bauhoff [1] and R.F Carlson [2], M. Lantz (Uppsala Univ.) is preparing a new publication for compilation of proton-, light-ion and heavy-ion induced reaction cross section. Motivated by his recent report [3], I checked Refs. [1-2], and found some reaction cross sections missing in the EXFOR library. Numerical data are given in Refs.[1-2]. But please also check the original articles.

Table: Proton-induced reaction cross section missing in EXFOR
(Remark: Reference symbols used in [2] are given. T denotes Total cross section.)

Author	Reference	Lab.	E_{min} eV	E_{max} eV	Remark
C.Hojvat+	J,NIM,66,13,1968	1CANUBC	1.6e+7	1.6e+7	Ho68
E.J.Burge	J,NP,13,511,1959	2UK KCL	2.5e+7	5.4e+7	Bu59
R.Goloskie+	J,NP,29,474,1962	1USAHRV	7.7e+7	1.3e+8	Go62
J.N.Palmieri+	J,NP,59,253,1964	1USAHRV	1.4e+8	1.5e+8	Pa64,T
D.G.Montague+	J,NP/A,199,457,1973	1USAUSC	1.6e+7	2.8e+7	Mo73
N.E.Davison+	J,NP/A,290,45,1977	1CANMNA	1.8e+7	4.8e+7	Da77
J.Marshall+	J,PR,91,767,1953	1USACHI	4.1e+8	4.1e+8	Ma53,T
H.G. de Carvalho	J,PR,96,398,1954	1USACHI	2.1e+8	3.2e+8	Ca54,T
I.Slaus+	J,PR/C,12,1093,1975	1USACLA	2.0e+7	4.4e+7	Sl75
B.D.Anderson+	J,PR/C,19,905,1979	1USALAS	7.0e+8	7.0e+8	An79
R.D.Albert+	J,PRL,6,13,1961	1USALRL	9.9e+6	9.9e+6	Al61
G.W.Greenlees+	J,PRS/A,78,1275,1961	2UK BIR	9.3e+6	9.3e+6	Gr61
J.M.Cassels+	J,PRS/A,67,125,1954	2UK HAR	1.3e+8	1.3e+8	Ca54a

For your information, proton-induced total cross sections missing in EXFOR are also listed. When the total cross section is obtained after subtraction of the Coulomb interaction part, we cannot treat it as a normal total cross section. During corrections of entries listed in Memo CP-D/521, SF3=TOT with SF8=MSC were applied to them. In this case, the REACTION code must be explained in free text.

Note that more additional articles missing in EXFOR will be published by Dr. Lantz. His objective is to publish his compilation as soon as possible, and at the same time make the data available for inclusion in the EXFOR database [3].

References

[1] W. Bauhoff, At. Data Nucl. Data Tables **35** (1986) 429
[2] R.F. Carlson, At. Data Nucl. Data Tables **63** (1996) 93
[3] M. Lantz and L. Sihver, Proceedings of the NEMEA-6 workshop, Krakow, Poland, 25-28 October, Report 2010NEA/NSC/DOC(2011)4, p37.

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