

1982-03-11

To: Distribution

From: K. Okamoto *KO*

Subject: Evaluation of the Al-27(n,  $\alpha$ ), Fe-56(n,p), Cu-63(n,2n),  
Cu-65(n,2n), Au-197(n,2n), Nb-93(n,2n), S-32(n,p) and  
H-1(n,n) cross sections

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Recently we have compiled "A simultaneous evaluation of some important cross sections at 14.70 MeV" by J.G. Hayes and T.B. Ryves (NPL, UK), Annals of Nuclear Energy 8 (1981) 469 into VIEN-V0029, and we have noticed some incomplete coverages of these data in CINDA and EXFOR. This is related to a continuing action (Nr.51 of the 1977 Kiev Meeting), asking NDS to propose a priority list of important data to be compiled fast and at 100% completeness, though this is not systematic survey on this matter.

There are 123 cited references (excluding H-1(n,n)), and 114 of them have been compiled in EXFOR (93%!) at the publication date of this evaluation work.

Clearance: J.J. Schmidt *J.J. Schmidt*

Distribution

1. S. Pearlstein, NNDC
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Completeness Check of EXFOR/CINDA

Reaction	Author(s) and Reference	Lab	Comment
S-32(n,p)P-32	J.D. Hemmingway; Report AERE/X/PR/2491/6 (1963)	2UKDUR	CINDA Yes EXFOR No
"	W. Shantl (1970); Thesis U. of Vienna	2AUSIRK	CINDA No EXFOR No The author is deceased, NDS tries to get information.
"	V.N. Levkovskii (1964); JETP 18 (1964) 213	4CCPKAZ	CINDA No EXFOR 80250.002 To be checked and compiled in EXFOR 40000-series. Data seem to be superseded by 40223.011, but CINDA information is required.
Nb-93(n,2n)Nb-92m	D. Basu+; Proc. Symp. on Nucl. Phys and Solid State Phys. Bombay (1966) 209	3INDSAH	CINDA Yes "+"(data) EXFOR No
"	H.G. Carter; Conf. on Neutron Cross Section Technology, Washington 2 (1966) 682 (AFWL-TR-65-216 (1966))	1USAGDT	CINDA Yes "+"(data) EXFOR No
"	V.L. Glagolev+; JETP 13 (1961) 520	4CCP	EXFOR 80238003 To be checked and compiled in EXFOR 40000-series
"	T.B. Ryves+; J. Phys.G; Nucl. Phys. 7 (1981) 529	2UKNPL	CINDA not yet EXFOR not yet

## Reaction

## Author(s) and Reference

## Lab

## Comment

Fe-56(n,p)Mn-25

Z.A. Ramendik+; Atomn. Energ. 42 (1977) 136  
SJA 42 (1977) 152

4CCP

CINDA Yes  
EXFOR No

"

K.C. Garg+; Ind. J. Pure and Appl. Phys. 71  
(1979) 385

3INDPAT

CINDA Yes  
EXFOR No

"

V.T. Shchebolev+; Metrologiya 8 (1974) 61

4CCP

CINDA No  
EXFOR No

"

V.D. Huynh; Int. Rep. BIPM-76/2

2FRBIP

CINDA No  
EXFOR No

Hayes might give wrong  
reference. BIPM-76/2 does not  
refer to Fe-56(n,p)Mn-25.

Al-27(n, $\alpha$ )Na-24

G. Winkler, V.D. Huynh; Priv. Comm. (1981)

2FRBIP(?)

CINDA No  
EXFOR No

"

P.M. Aront, Atomn. Energ. 16 (1964) 370

4CCP

EXFOR 80078002

To be checked and compiled  
in EXFOR-40000 series.

Cu-63(n,2n)Cu-62

A. Pasquarelli; Nuc. Phys. A93 (1967) 218

2ITYTUR

CINDA Yes<sup>#</sup>  
EXFOR No

The reaction is mentioned in  
reference (511+15mb), and  
this should be compiled in  
EXFOR 20889.

Au-197(n,2n)Au-196

T.B. Ryves+; J.Phys.G, Nucl.Phys. 7 (1981) 115

2UKNPL

CINDA not yet  
EXFOR not yet

Slightly different values  
from the ones in NEANDC(E)212  
(EXFOR 21627).

H-1(n,n)H-1

Explicit cross section values are not given in the cited references.  
However, all works in the references are of the National Physical Laboratory.

Items to be clarified by Hayes & Ryves themselves;

\* Irrelevant and wrong references cited in Table 1

	<u>Remarks</u>
Borman et al (1961). J. Phys. Radium <u>22</u> (1961) 602	Irrelevant (n, $\alpha$ ) reactions only
Santry and Butler (1963). Can.J. Chem. <u>41</u> (1963) 123	S-32(n,p) standard for other reactions
Han-lin et al. should be Lu Han-Lin et al.	Lu is the family name
Huynh (1976). Int. Report BIPM-76/2	Irrelevant? N-flux determination not Fe-56(n,p)
Prestwood and Bayhurst (1960) should be (19 <u>61</u> )	(1960) --> (1961)
Thomas and Lewis (1980) should be (19 <u>81</u> )	(1980) --> (1981)
Bayhurst and Prestwood (1961). J. Inorg.Nucl. Chem. <u>23</u> (1961) 173	To be added in the reference.
Anderson et al. (1978). LUNFD6- <u>NEFR-3021</u>	Correction of report's name

\* Irrelevant and wrong references and others in Table 2

	<u>Remarks</u>
Dyer and Hamilton (1972). J.Inorg. Nucl. Chem. <u>34</u> (1972) 1119 cross sections measured 1 should be <u>2</u>	Wrong code no.
Singh J.J. (1970) should be Singh (19 <u>72</u> )	(1970) --> (1972)
Vonach and Munzer (1959). Reference should read Anz. Oesterr. Akad. Wiss., Math-Naturwiss. <u>96</u> (1959) 120 cross section measured 7 should be <u>6</u>	correction of reference and wrong code
Molla and Qaim (1977). Reference should read Nucl. Phys. <u>A283</u> (1977) 269	"
Strain and Ross (1965). Reference should read ORNL- <u>3672</u>	"