



International Atomic Energy Agency

**An EXFOR Compilation Web Tool
(<http://www.jcprg.org/exfor/tool/>)**

Naohiko Otsuka

IAEA Nuclear Data Section

1. Upload EXFOR → ORDER/ZCHEX/JANIS etc.

JCPRG 北海道大学大学院理学研究院附属
原子核反応データ研究開発センター
Hokkaido University Nuclear Reaction Data Centre

| NRDF | EXFOR | CINDA | ENDF | English | Japanese | Int

Hokkaido University Nuclear Reaction Data Centre (JCPRG)
ORDER/ZCHEX/JANIS etc. **EXFOR Compilation Tool**

CHEX, ORDER and XTRACT have been developed by Victoria McLane (NNDC) and maintained by Viktor Zerkin (IAEA-NDS). XDOMINO has been developed by Shuji Yamaguchi (JCPRG). JANIS Trans Checks is maintained by Nicolas Soppera (NEA DB). EXFOR Converter System is maintained by Viktor Zerkin (IAEA-NDS).

Processing of an EXFOR entry or trans tape with ZCHEX, ZORDER, JANIS etc.

Choose File 21594.txt
submit reset

Extraction of bibliography from a doi (e.g., 10.1016/j.nds.2014.07.065) or EXFOR code (e.g., J,NDS,120,272,2014)

J,PR/C,103,045809,2021
submit reset



Sample Input (Old fashioned)

2-digit year

Extra characters

ENTRY	21594	810408	20050926	0000
SUBENT	21594001	20210507	20050926	0000
BIB	15	31		
INSTITUTE	(2FR ILL)			
REFERENCE	(J, PL/B, 53, 45, 1974)			
AUTHOR	(G. SIEGERT, H. WOLLNIK, J. GREIF, G. FIEDLER, M. ASGHAR, G. BAILLEUL, J. P. BOCQUET, J. P. GAUTHERON, H. SCHRADER, H. EWALD, P. ARMBRUSTER)			
TITLE	-DIRECT DETERMINATION OF THE NUCLEAR CHARGE DISTRIBUTI OF MASS SEPERATED FISSION PRODUCTS FROM U-235 (N,F) - .			
FACILITY	(SPECM) LOHENGRIN ON-LINE MASS SEPERATOR. (REAC) HIGH FLUX REACTOR.			
INC-SOURCE	(REAC) THERMAL NEUTRONS FROM REACTOR.			
INC-SPECT	.MAXWELLIAN THERMAL NEUTRON SPECTRUM.			
SAMPLE	.URANIUM DIOXIDE, ENRICHED TO 93 PERCENT U-235, THICKNESS OF 400 MICRO-GM/CM*2.			
METHOD	(ASEP) ON-LINE MASS SEPERATION, WITH RESOLVING POWER OF 1/400. CHARGE SEPERATION WITHIN EACH MASS CHAIN BY USING DELTA-E SILICON SURFACE BARRIER DETECTORS WITH A NUCLEAR CHARGE RESOLVING POWER OF 1/43 FOR FRAGMENT WITH KINETIC ENERGY OF 100 MEV.			
DETECTOR	(SOLST) SOLID STATE SILICON SURFACE BARRIER DETECTORS			

UPPER CASES



File Upload → Output List

NRDC | EXFOR | CINDA

Hokkaido University Nuclear Reaction Data Centre (JCPRG)
EXFOR Compilation Tool

Developed by Victoria McLane (NNDC) and maintained by Viktor Zerkin (IAEA-NDS). XDOMINO has been developed by SH
EXFOR Converter System is maintained by Viktor Zerkin (IAEA-NDS).

- input
- order output
- chex output
- janis output
- X4+ output
- xtract output
- flag output
(for altered entry only)
- lowercase output
(for processing of UPPER CASE entry only)



Output (“order”)

- input
- order output**
- chex output
- janis output
- X4+ output
- xtract output
- flag output
- (for altered entry only)
- lowercase output
- rocessing of UPPER CASE entry

Converted to 4-digit year

Extra characters removed

TRANS		20210507		2000000000000
ENTRY	21594	19810408		2159400000001
SUBENT	21594001	20210507		2159400100001
BIB	15	31		2159400100002
INSTITUTE	(2FR ILL)			2159400100003
REFERENCE	(J, PL/B, 53, 45, 1974)			2159400100004
AUTHOR	(G. SIEGERT, H. WOLLNIK, J. GREIF, G. FIEDLER, M. ASGHAR, G. BAILLEUL, J. P. BOCQUET, J. P. GAUTHERON, H. SCHRADER, H. EWALD, P. ARMBRUSTER)			2159400100005 2159400100006 2159400100007
TITLE	-DIRECT DETERMINATION OF THE NUCLEAR CHARGE DISTRIBUTI OF MASS SEPERATED FISSION PRODUCTS FROM U-235 (N, F) -.			2159400100008 2159400100009
FACILITY	(SPECM) LOHENGRIN ON-LINE MASS SEPERATOR. (REAC) HIGH FLUX REACTOR.			2159400100010 2159400100011
INC-SOURCE	(REAC) THERMAL NEUTRONS FROM REACTOR.			2159400100012
INC-SPECT	.MAXWELLIAN THERMAL NEUTRON SPECTRUM.			2159400100013
SAMPLE	.URANIUM DIOXIDE, ENRICHED TO 93 PERCENT U-235, THICKNESS OF 400 MICRO-GM/CM*2.			2159400100014 2159400100015
METHOD	(ASEP) ON-LINE MASS SEPERATION, WITH RESOLVING POWER OF 1/400. CHARGE SEPERATION WITHIN EACH MASS CHAIN BY USING DELTA-E SILICON SURFACE BARRIER DETECTORS WITH A NUCLEAR CHARGE RESOLVING POWER OF 1/43 FOR FRAGMENT			2159400100016 2159400100017 2159400100018 2159400100019



Output (“flag”)

input
 order output
 chex output
 janis output
 X4+ output
 xtract output
flag output
 (for altered entry only)
 lowercase output
 processing of UPPER CASE entry

Alteration flags added

N2 update forgotten (?)

TRANS		202105070000000
ENTRY	?	21594	<u>19810408</u>
SUBENT	C	21594001	20210507
BIB		15	31
INSTITUTE	(2FR ILL)		2159400100003
REFERENCE	(J, PL/B, 53, 45, 1974)		2159400100004C
AUTHOR	(G. SIEGERT, H. WOLLNIK, J. GREIF, G. FIEDLER, M. ASGHAR, G. BAILLEUL, J. P. BOCQUET, J. P. GAUTHERON, H. SCHRADER, H. EWALD, P. ARMBRUSTER)		2159400100005
TITLE	-DIRECT DETERMINATION OF THE NUCLEAR CHARGE DISTRIBUTI OF MASS SEPERATED FISSION PRODUCTS FROM U-235(N,F) -.		2159400100008
FACILITY	(SPECM) LOHENGRIN ON-LINE MASS SEPERATOR. (REAC) HIGH FLUX REACTOR.		2159400100010
INC-SOURCE	(REAC) THERMAL NEUTRONS FROM REACTOR.		2159400100012
INC-SPECT	.MAXWELLIAN THERMAL NEUTRON SPECTRUM.		2159400100013
SAMPLE	.URANIUM DIOXIDE, ENRICHED TO 93 PERCENT U-235, THICKNESS OF 400 MICRO-GM/CM*2.		2159400100014
METHOD	(ASEP) ON-LINE MASS SEPERATION, WITH RESOLVING POWER OF 1/400. CHARGE SEPERATION WITHIN EACH MASS CHAIN BY USING DELTA-E SILICON SURFACE BARRIER DETECTORS WITH A NUCLEAR CHARGE RESOLVING POWER OF 1/43 FOR FRAGMENT		2159400100016
			2159400100017
			2159400100018
			2159400100019



Output (“lowercase output”)

input
order output
chex output
janis output
X4+ output
xtract output
flag output
(for altered entry only)
lowercase output
processing of UPPER CASE entry

All known English words are converted to lowercases.

```
TRANS                20210507                2000000000000
ENTRY      ?      21594    19810408                2159400000001?
SUBENT     C      21594001    20210507                2159400100001C
BIB                15                31                2159400100002
INSTITUTE (2FR ILL)                2159400100003
REFERENCE (J, PL/B, 53, 45, 1974)                2159400100004C
AUTHOR (G.Siegert, H.Wollnik, J.Greif, G.Fiedler, M.Asghar,
        G.Bailleul, J.P.Bocquet, J.P.Gautheron, H.Schrader,
        H.Ewald, P.Armbruster)                2159400100005
        2159400100006
TITLE -direct determination of the nuclear charge DISTRIBUTI 2159400100008
        of mass SEPERATED fission products from U-235(N,F) . 2159400100009
FACILITY (SPECM) Lohengrin on-line mass SEPERATOR. 2159400100010
        (REAC ) High flux reactor. 2159400100011
INC-SOURCE (REAC ) Thermal neutrons from reactor. 2159400100012
INC-SPECT .Maxwellian thermal neutron spectrum. 2159400100013
SAMPLE .Uranium dioxide, enriched to 93 percent U-235, 2159400100014
        thickness of 400 micro-gm/cm2. 2159400100015
METHOD (ASEP ) On-line mass SEPERATION, with resolving power 2159400100016
        of 1/400. Charge SEPERATION within each mass chain by 2159400100017
        using delta-E silicon surface barrier detectors with 2159400100018
        a nuclear charge resolving power of 1/43 for fragment 2159400100019
```

(Abbreviations, *typos* etc. are left to uppercases.)



Output ("zchex")

input
order output
chex output
janis output
X4+ output
xtract output
flag output
(for altered entry only)
lowercase output
rocessing of UPPER CASE entry

```
ZCHEX (Ver-2020-12-04) run on 07-May-2021
-----
Input file: ../../exfor/tool/./work/trans-2033a.txt
File labeled: TRANS                20210507

ENTRY 21594 19810408
** Illegal ALTERATION CODE                21594000
   ENTRY      ?      21594   19810408      2159400000001?
                                           ^

** Illegal ALTERATION CODE                21594002
   SUBENT     ?      21594002   19800718      2159400200001?
                                           ^

** Obsolete BIB Keyword
** Obsolete BIB Keyword
** Illegal DATA HEADING or UNIT
   ELEMENT    MASS      RATIO      RATIO-ERR                2159400200012
                                           ^
                                           ^
                                           ^
                                           ^
                                           ^
** Illegal ALTERATION CODE                21594003
   SUBENT     ?      21594003   19810408      2159400300001?
                                           ^

First pass completed with no fatal errors
1
- Second pass checking -
```



Output (“janis”)

input
order output
chex output
janis output
X4+ output
xtract output
flag output
(for altered entry only)
lowercase output
rocessing of UPPER CASE entry

JANIS Import Log		
2021-05-07T17:31:06.496+0900		
0 Errors		
2 Warnings		
Subent	Message	Details line number
21594.002	Obsolete data heading	RATIO line 54
21594.002	Obsolete data heading	RATIO-ERR line 54

JANIS Import Log - 2021-05-07T17:31:06.496+0900



Output (“x4+”)

input
order output
chex output
janis output
X4+ output
xtract output
flag output
(for altered entry only)
lowercase output
processing of UPPER CASE entry

```
ENTRY      21594001   20210507
SUBENT     21594001   20210507
BIB        15        31
INSTITUTE  (2FR ILL)
            # (2FR ILL) Institut Laue-Langevin, Grenoble, France
REFERENCE  (J,PL/B,53,45,1974)
            # (J,PL/B,53,45,1974) Jour: Physics Letters,Section B, Vol.53, p.45 (1974), Netherlands
AUTHOR     (G.SIEGERT,H.WOLLNIK,J.GREIF,G.FIEDLER,M.ASGHAR,
            G.BAILLEUL,J.P.BOCQUET,J.P.GAUTHERON,H.SCHRADER,
            H.EWALD,P.ARMBRUSTER)
TITLE      -DIRECT DETERMINATION OF THE NUCLEAR CHARGE DISTRIBUTI
            OF MASS SEPERATED FISSION PRODUCTS FROM U-235(N,F) -.
FACILITY   (SPECM) LOHENGRIN ON-LINE MASS SEPERATOR.
            (REAC ) HIGH FLUX REACTOR.
            # (SPECM) Mass spectrometer
            # (REAC) Reactor
INC-SOURCE (REAC ) THERMAL NEUTRONS FROM REACTOR.
            # (REAC) Reactor
INC-SPECT  .MAXWELLIAN THERMAL NEUTRON SPECTRUM.
SAMPLE     .URANIUM DIOXIDE, ENRICHED TO 93 PERCENT U-235,
            THICKNESS OF 400 MICRO-GM/CM*2.
METHOD     (ASEP ) ON-LINE MASS SEPERATION, WITH RESOLVING POWER
            OF 1/400. CHARGE SEPERATION WITHIN EACH MASS CHAIN BY
            USING DELTA-E SILICON SURFACE BARRIER DETECTORS WITH
            A NUCLEAR CHARGE RESOLVING POWER OF 1/43 FOR FRAGMENT
            WITH KINETIC ENERGY OF 100 MEV
```



2. X4 REFERENCE code → TITLE/AUTHOR drafting

JCPREC 北海道大学大学院理学研究院附属
原子核反応データ研究
Hokkaido University Nuclear Reaction Data Center

Hokkaido Univ
E

CHEX, ORDER and XTRACT have been developed by Victoria McLane (NNDC) and is maintained by Nicolas Soppera (NEA DB). EXFOR Converter System is maintained by...

Processing of an EXFOR...

Choose File 21594.txt
submit reset

Extraction of bibliography from a doi (e.g., 10.1016/j.nds.2014.07.065) or EXFOR code (e.g., J,NDS,120,272,2014)
J,PR/C,103,045809,2021
submit reset

Measurement of the $^{72}\text{Ge}(n, \gamma)$ cross section over a wide neutron energy range at the CERN n_TOF facility

M. Dietz^{1,*}, C. Lederer-Woods,¹ A. Tattersall,¹ U. Battino,¹ F. Gunsing,^{2,3} S. Heinitz,⁴ M. Krtička,⁵ J. Lerendegui-Marco,⁶ R. Reifarth,⁷ S. Valenta,⁵ O. Aberle,³ S. Amaducci,^{8,9} J. Andrzejewski,¹⁰ L. Audouin,¹¹ M. Bacak,^{12,3,2} J. Balibrea,¹³ M. Barbagallo,¹⁴ F. Bečvář,⁵ E. Berthoumieux,² J. Billowes,¹⁵ D. Bosnar,¹⁶ A. Brown,¹⁷ M. Caamaño,¹⁸ F. Calviño,¹⁹ M. Calviani,³ D. Cano-Ott,¹³ R. Cardella,³ A. Casanovas,¹⁹ F. Cerutti,³ Y. H. Chen,¹¹ E. Chiaveri,^{3,15,6} N. Colonna,¹⁴ G. Cortés,¹⁹ M. A. Cortés-Giraldo,⁶ L. Cosentino,²⁰ L. A. Damone,^{14,21} M. Diakaki,² C. Domingo-Pardo,²² R. Dressler,⁴ E. Dupont,² I. Durán,¹⁸ B. Fernández-Domínguez,¹⁸ A. Ferrari,³ P. Ferreira,²³ P. Finocchiaro,²⁰ V. Furman,²⁴ K. Göbel,⁷ A. R. García,¹³ A. Gawlik,¹⁰ S. Gilardoni,³ T. Glodariu,^{25,7} I. F. Gonçalves,²³ E. González-Romero,¹³ E. Griesmayer,¹² C. Guerrero,⁶ H. Harada,²⁶ J. Heyse,²⁷ D. G. Jenkins,¹⁷ E. Jericha,¹² F. Käppeler,²⁸ Y. Kadi,³ D. Kahl,¹ A. Kalamara,²⁹ P. Kavrigin,¹² A. Kimura,²⁶ N. Kivel,⁴ M. Kokkoris,²⁹ D. Kurtulgil,⁷ E. Leal-Cidoncha,¹⁸ H. Leeb,¹² S. Lo Meo,^{30,8} S. J. Lonsdale,¹ D. Macina,³ A. Manna,^{8,9} J. Marganiec,^{10,31} T. Martínez,¹³ A. Masi,³ C. Massimi,^{8,9} P. Mastinu,³² M. Mastromarco,¹⁴ E. A. Maugeri,⁴ A. Mazzone,^{14,33} E. Mendoza,¹³ A. Mengoni,³⁰ P. M. Milazzo,³⁴ F. Mingrone,³ A. Musumarra,^{20,35} A. Negret,²⁵ R. Nolte,³¹ A. Oprea,²⁵ N. Patronis,³⁶ A. Pavlik,³⁷ J. Perkowski,¹⁰ I. Porras,³⁸ J. Praena,³⁸ J. M. Quesada,⁶ D. Radeck,³¹ T. Rauscher,^{39,40} C. Rubbia,³ J. A. Ryan,¹⁵ M. Sabaté-Gilarte,^{3,6} A. Saxena,⁴¹ P. Schillebeeckx,²⁷ D. Schumann,⁴ P. Sedyshev,²⁴ A. G. Smith,¹⁵ N. V. Sosnin,¹⁵ A. Stamatopoulos,²⁹ G. Tagliente,¹⁴ J. L. Tain,²² A. Tarifeño-Saldivia,¹⁹ L. Tassan-Got,¹¹ G. Vannini,^{8,9} V. Variale,¹⁴ P. Vaz,²³ A. Ventura,⁸ V. Vlachoudis,³ R. Vlastou,²⁹ A. Wallner,⁴² S. Warren,¹⁵ C. Weiss,¹² P. J. Woods,¹ T. Wright,¹⁵ and P. Žugec^{16,3}
(n_TOF Collaboration)[‡]

TITLE/AUTHOR creation

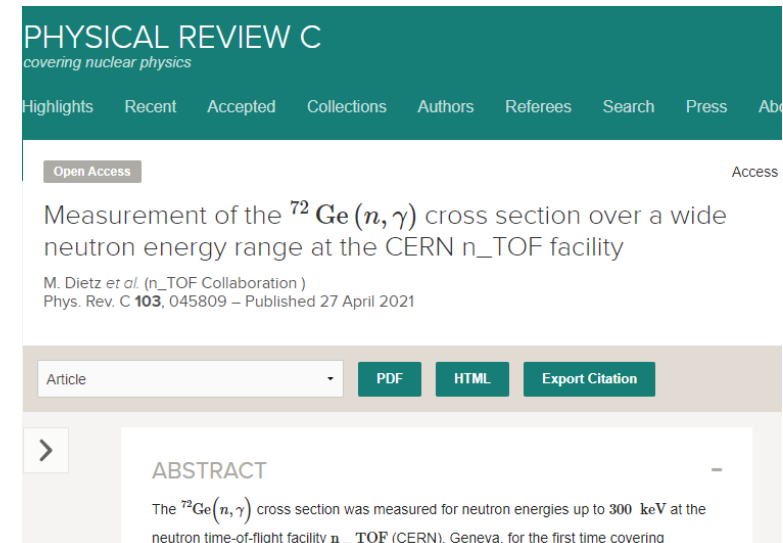


Output

```
}
EXFOR output =====
TITLE      Measurement of the  $^{72}\text{Ge}$  ( $n,\gamma$ ) cross section over
          a wide neutron energy range at the CERN n_TOF
          facility
AUTHOR     (M.Dietz, C.Lederer-Woods, A.Tattersall, U.Battino,
          F.Gunsing, S.Heinitz, M.Krticka, J.Lerendegui-Marco,
          R.Reifarh, S.Valenta, O.Aberle, S.Amaducci,
          J.Andrzejewski, L.Audouin, M.Bacak, J.Balibrea,
          M.Barbagallo, F.Becvar, E.Berthoumieux, J.Billowes,
          D.Bosnar, A.Brown, M.Caamano, F.Calvino, M.Calviani,
          D.Cano-Ott, R.Cardella, A.Casanovas, F.Cerutti,
          Y.H.Chen, E.Chiaveri, N.Colonna, G.Cortes,
          M.A.Cortes-Giraldo, L.Cosentino, L.A.Damone,
          M.Diakaki, C.Domingo-Pardo, R.Dressler, E.Dupont,
          I.Duran, B.Fernandez-Dominguez, A.Ferrari, P.Ferreira,
          P.Finocchiaro, V.Furman, K.Goebel, A.R.Garcia,
          A.Gawlik, S.Gilardoni, T.Glodariu, I.F.Goncalves,
          E.Gonzalez-Romero, E.Griesmayer, C.Guerrero, H.Harada,
          J.Heyse, D.G.Jenkins, E.Jericha, F.Kaepfeler, Y.Kadi,
          D.Kahl, A.Kalamara, P.Kavargin, A.Kimura, N.Kivel,
          M.Kokkoris, D.Kurtulgil, E.Leal-Cidoncha, H.Leeb,
          S.Lo Meo, S.J.Lonsdale, D.Macina, A.Manna,
          J.Marganec, T.Martinez, A.Masi, C.Massimi, P.Mastinu,
          M.Mastromarco, E.A.Maugeri, A.Mazzone, E.Mendoza,
          A.Mengoni, P.M.Milazzo, F.Mingrone, A.Musumarra,
          A.Negret, R.Nolte, A.Oprea, N.Patronis, A.Pavlik,
          J.Perkowski, I.Porras, J.Praena, J.M.Quesada,
          D.Radeck, T.Rauscher, C.Rubbia, J.A.Ryan,
          M.Sabate-Gilarte, A.Saxena, P.Schillebeeckx,
          D.Schumann, P.Sedyshev, A.G.Smith, N.V.Sosnin,
          A.Stamatopoulos, G.Tagliente, J.L.Tain,
          A.Tarifeno-Saldivia, L.Tassan-Got, G.Vannini,
          V.Variale, P.Vaz, A.Ventura, V.Vlachoudis, R.Vlastou,
          A.Wallner, S.Warren, C.Weiss, P.J.Woods, T.Wright,
          P.zugec)
REFERENCE  (J,PR/C,103,045809,2021)
END
```

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PHYSICAL REVIEW C
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Measurement of the $^{72}\text{Ge}(n,\gamma)$ cross section over a wide neutron energy range at the CERN n_TOF facility

M. Dietz et al. (n_TOF Collaboration)
Phys. Rev. C **103**, 045809 – Published 27 April 2021

Article PDF HTML Export Citation

ABSTRACT

The $^{72}\text{Ge}(n,\gamma)$ cross section was measured for neutron energies up to 300 keV at the neutron time-of-flight facility n_TOF (CERN), Geneva, for the first time covering

