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**DATE:** January 23, 1989

005203

**TO:** Distribution

**FROM:** V. McLane

**SUBJECT:** Thick target yields

I cannot find in EXFOR or LEXFOR any explanation of the use of the quantity code TTY (thick target yield).

On looking at the compiled data, it is clear that the use of the code is inconsistant and some guidance is needed.

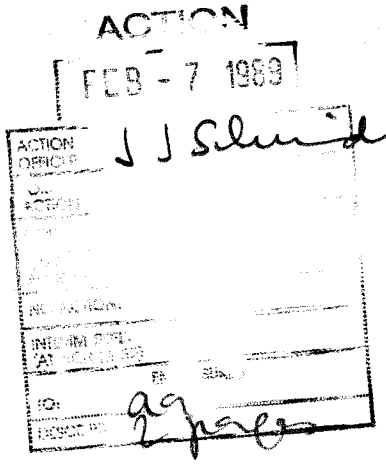
The data presently compiled in EXFOR under the quantity code TTY may be divided into three categories.

1. Cross sections measured on thick targets.

2. Yields as a measurement of:
   a. $\frac{\text{product disintegration rate}}{\text{incident beam current}}$
   b. product yield/incident particle

3. Yields as a measurement of:
   $\frac{\text{product disintegration rate}}{\text{incident beam current-hours}}$

Most data are presented in this form.




cc. De Moraes
Gentile
Lammer
Lemmel
Okamoto
Osorio
Schmidt
Schwerer
Seitz
Wang Dabao

# Thick Targets

A thick target is defined as one thick enough to degrade the primary projectile energy well below the threshold of the reaction under consideration. Data are not very sensitive to changes slight changes in target thickness or beam properties.

## Thick target cross sections

REACTION coding: SIG in SF6, TT in SF8

***Example***: (....(P,X)1-H-3,,SIG,,TT)

## Thick target yields

Thick target yields are measurements of the product disintegration rate relative to the incident beam current.

Thick target yields are presented in two basic forms:

1.) $\frac{\text{product disintegrations/sec}}{\text{incident beam current} - \text{hours}}$

REACTION coding: TTY in SF6

Unit type: TTY (*e.g.*, MUCI/MUAHR)

***Example***: (....(A,3N)54-XE-123,,TTY)

2.) $\frac{\text{product disintegrations/sec}}{\text{incident beam current}}$ or $\frac{\text{product yield}}{\text{incident particle}}$

REACTION coding: TTY in SF6, ?? in SF8.

Unit type: TTT (*e.g.*, MUCI/MUA)

***Example***: (....(P,N)48-CD-107,,TTY,,??)

Data presently coded for thick target yields:

Case 1:

A0061 B*EV: should be coded (....SIG,,RTE)
B0080 MISC-COL has tritons/inc.proton
B0118
C0070

Case 2a:

| | | |
|---|---|---|
| A0085 | A0286 | A0313 |
| A0316 | B0151 | C0006 (PART/MUAHR) |

Case 2b:

| | | |
|---|---|---|
| A0144 | A0170 | A0174 |
| A0188 | A0195 | A0323 |
| D0047 | D0048 | |

Case 3:

| | | |
|---|---|---|
| A0002 | A0004 | A0006 |
| A0008 | A0009 | A0011 |
| A0012 | A0017 | A0021 |
| A0022 | A0044 | A0049 |
| A0053 | A0070 | A0078 |
| A0083 | A0092 | A0094 |
| A0122 | A0128 | A0140 |
| A0168 | A0194 | A0199 |
| A0211 | A0212 | A0226 |
| A0234 | A0236 | A0256 |
| A0257 | A0259 | A0260 |
| A0269 | A0287 | A0299 |
| A0322 | A0326 | A0331 |
| A0346 | B0084 | B0097 |
| B0098 | B0103 | B0109 |
| B0111 | B0128 | B0135 |
| B0145 | B0160 | B0161 |
| B0163 | B0164 | B0165 |
| B0168 | B0169 | B0171 |
| B0172 | B0174 | B0175 |
| B0176 | B0178 | C0202 |
| D0042 | D0043 | D0044 |
| D0045 | D0046 | |

The following are relative data sets:

| | | |
|---|---|---|
| A0028 | A0343 | C0021 |