## $^{169}$Tm(p,t) 1973Go14,1971GoYX

History

| Type | Author | Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | Balraj Singh and Jun Chen | NDS 191,1 (2023) | 22-Aug-2023 |

1973Go14, 1971GoYX (thesis): E(p)=30 MeV. Target=≈400 $\mu$g/cm$^2$ thick metallic $^{169}$Tm on 20 $\mu$g/cm$^2$ carbon backing. Analyzed scattered tritons at $\theta$(lab)=20° using Enge split-pole double-focusing magnetic spectrograph, with recording of analyzed tritons by Kodak nuclear emulsion plates at Michigan State University Sector-focused cyclotron facility. FWHM≈10 keV. Results were also reported earlier by R. Goles, Michigan State University, Nucl. Chem. Annual report p79 (1969). 1971GoYG is the same as 1971GoYX.

Additional information 1.

$J^\pi$($^{169}$Tm g.s.)=1/2$^+$.

### $^{167}$Tm Levels

| E(level)[†] | E(level)[†] | E(level)[†] | E(level)[†] |
|---|---|---|---|
| 0[‡#] | 624 | 1210 | 1526 |
| 10[‡#] | 663 | 1283 | 1574 |
| 117[#] | 682 | 1320 | 1598 |
| 142[#] | 706 | 1380[@] | 1625 |
| 329[#] | 1010 | 1404[@] | 1655 |
| 374[#] | 1092 | 1434[@] | |
| 470 | 1154 | 1457 | |
| 604 | 1192 | 1486 | |

[†] From 1971GoYX. Energies of levels with band structures are also listed in 1973Go14. Evaluators estimate uncertainty of 5 keV based on FWHM≈10 keV and triton spectra shown in Fig. 2 of 1973Go14.

[‡] Unresolved doublet composed of g.s. and 10.4-keV level.

[#] Interpreted (1971GoYX,1973Go14) as members of strongly populated $\pi$1/2[411] band in (p,t) reaction, with $J^\pi$=1/2$^+$, 3/2$^+$, 5/2$^+$, 7/2$^+$, 9/2$^+$ and 11/2$^+$ for 0-, 10-, 117-, 142-, 329- and 374-keV levels, respectively, based on data from literature.

[@] Interpreted (1971GoYX,1973Go14) as members of $K^\pi$=3/2$^+$, $\gamma$-vibrational band with $J^\pi$=5/2$^+$, 7/2$^+$, and 9/2$^+$ for 1380-, 1404-, and 1434-keV levels, respectively, based on data from literature.