

⁴⁶Ti(α ,pn γ) 1977Sa03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 179, 1 (2022)	30-Nov-2021

1977Sa03 (also 1974SaYX): E=24-42 MeV alpha beams were produced from the Michigan State University cyclotron. γ rays were detected with Ge(Li) detectors. Measured E_γ , I_γ , $\gamma\gamma$ -coin, excitation functions. Deduced levels, J, π , band structures. See also 1975SaZY, 1974SaZV, 1973SaYL.

⁴⁸V Levels

E(level) ^{†‡}	J π [#]	Comments
0.0	4 ⁺	Configuration= π 3/2[321] \otimes v5/2[312] (1977Sa03).
308.3	3 2 ⁺	
420.8	4 1 ⁺	
518.7 [@]	4 1 ⁻	Configuration= π 3/2[202] \otimes v5/2[312] (1977Sa03).
745.0 [@]	4 2 ⁻	
1055.7 [@]	4 3 ⁻	
1099.1 ^{&}	3 4 ⁻	Configuration= π 3/2[202] \otimes v5/2[312] (1977Sa03).
1557.4 [@]	5 4 ⁻	
1685.4 ^{&}	5 5 ⁻	
2062.4 [@]	5 (5 ⁻)	
2398.7 ^{&}	6 (6 ⁻)	
(2626.3 3)	9 ⁺	E(level),J π : from Adopted Levels.
2781.0 [@]	6 (6 ⁻)	
3175.6 ^{&}	6 (7 ⁻)	
3426.5 [@]	7 (7 ⁻)	
3982.8 ^{&}	7 (8 ⁻)	
4150.3?	5 (10 ⁺)	J π : from Adopted Levels.
4397.3 ^{&}	8 (9 ⁻)	

[†] If ΔE_γ not given, ± 0.30 keV assumed for least-squares fitting.

[‡] From a least-squares fit to γ -ray energies, assuming $\Delta E_\gamma = 0.3$ keV.

[#] From γ excitation function and band assignments in 1977Sa03 for levels at 2063 and above and from Adopted Levels for others, unless otherwise noted..

[@] Band(A): $K^\pi = 10$ band (1977Sa03).

[&] Band(B): $K^\pi = 4^-$ band (1977Sa03).

γ (⁴⁸V)

E_i (level)	J π_i	E_γ [†]	E_f	J π_f	E_i (level)	J π_i	E_γ [†]	I_γ [†]	E_f	J π_f
308.3	2 ⁺	308.3	0.0	4 ⁺	1557.4	4 ⁻	501.7		1055.7	3 ⁻
420.8	1 ⁺	112.4	308.3	2 ⁺			812.2		745.0	2 ⁻
518.7	1 ⁻	97.9	420.8	1 ⁺	1685.4	5 ⁻	586.3		1099.1	4 ⁻
		210.4	308.3	2 ⁺	2062.4	(5 ⁻)	504.7	69 7	1557.4	4 ⁻
745.0	2 ⁻	226.3	518.7	1 ⁻			1007.0	31 7	1055.7	3 ⁻
		324.2	420.8	1 ⁺	2398.7	(6 ⁻)	713.3		1685.4	5 ⁻
		436.7	308.3	2 ⁺	2781.0	(6 ⁻)	718.6		2062.4	(5 ⁻)
1055.7	3 ⁻	310.8	745.0	2 ⁻	3175.6	(7 ⁻)	776.9		2398.7	(6 ⁻)
		537.1	518.7	1 ⁻	3426.5	(7 ⁻)	645.5		2781.0	(6 ⁻)
1099.1	4 ⁻	1099.1	0.0	4 ⁺	3982.8	(8 ⁻)	807.2		3175.6	(7 ⁻)

Continued on next page (footnotes at end of table)

${}^{46}\text{Ti}(\alpha, \text{pn}\gamma)$ 1977Sa03 (continued) $\gamma({}^{48}\text{V})$ (continued)

<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ^\dagger</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Comments</u>
4150.3?	(10 ⁺)	1524.2 [‡]	2626.3?	9 ⁺	E_γ : 1977Sa03 suggest that this γ may be the same as the 1523.5 γ placed as deexciting the 3586 state by 1974Ha33 in ${}^{34}\text{S}({}^{16}\text{O}, \text{pn}\gamma)$.
4397.3	(9 ⁻)	414.5	3982.8	(8 ⁻)	

[†] From 1977Sa03.

[‡] Placement of transition in the level scheme is uncertain.

${}^{46}\text{Ti}(\alpha, \text{pn}\gamma)$ 1977Sa03