

$^{30}\text{Si}(t,d),(\text{pol } t,d)$ 1987Pe09,1986Ha24

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh		NDS 184, 29 (2022)	24-Jun-2022

1987Pe09: (t,d) E=36 MeV tritons from Van de Graaff at Daresbury Laboratory. Measured E(d) and angular distributions using scattering chamber with ΔE -E semiconductor telescopes. Resolution (FWHM) estimated by the evaluators to be 10 keV from figures in 1987Pe09. DWBA analysis, both zero range and local energy approximation.

1986Ha24: (pol t,d) E=17 MeV tritons from Los Alamos tandem using a polarized triton source. Target was 95% ^{30}Si , measured E(d) and angular distributions and analyzing powers ($\theta_{\text{lab}}=16^\circ-14^\circ$) using silicon surface barrier detectors in a 'supercube' scattering chamber. Resolution (FWHM) estimated by the evaluators to be 10 keV. DWBA analysis, both zero range and local energy approximation.

 ^{31}Si Levels

E(level)	J^π @	L&	C^2S^a	Comments
0 [#]	3/2 ⁺	2	0.411 21	
750 [#]	1/2 ⁺	0	0.14 5	
1690 [†]	(5/2 ⁺)			J^π : from 1987Pe09, unambiguous L value was not established.
2320 [#]	3/2 ⁺	2	0.027 5	
2790 [#]	5/2 ⁺	2	0.048 16	
3130 [‡]	7/2 ⁻	3	0.258 18	
3530 [‡]	3/2 ⁻	1	0.27 4	

[†] From 1987Pe09.

[‡] From 1986Ha24.

[#] From 1987Pe09 and 1986Ha24.

@ From L-transfers and analyzing powers $A_y(\theta)$ (1986Ha24), unless otherwise noted.

& From DWBA fit to measured $\sigma(\theta)$ (1987Pe09,1986Ha24).

^a From 1986Ha24. C^2S values from DWBA analysis with different approximations (exact finite range, zero range and local-energy) are reported by 1987Pe09 also.