

$^{26}\text{Mg}(t, ^3\text{He})$ 1974FI01,1987Pe06,2006Ze01

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia and A. M. Hurst		NDS 134, 1 (2016)	1-Feb-2016

1974FI01: Triton beam E=23.5 MeV provided by Los Alamos Van de Graff facility impinged upon ^{26}Mg target. Reaction products measured from 15 to 30° at 5° intervals using E-ΔE silicon surface-barrier-detector telescope with a 50 μm ΔE detector. Excited states in ^{26}Na were populated using charge-exchange (t, ^3He) reaction and relative $d\sigma/d\Omega$ measured.

1987Pe06: $^3\text{H}^-$ ions accelerated to 36 MeV by tandem Van de Graff accelerator with average beam intensity of 200 nA and incident upon self-supporting foils of ^{26}Mg with thicknesses of 0.20 mg/cm² and 1.50 mg/cm². Recoiling particles measured using Daresbury 1 min scattering chamber in conjunction with five ΔE-E semiconductor telescopes. ΔE detectors were between 118 and 155 μm thick and E detectors 5 mm thick. Particle-energy spectra and differential cross sections obtained over angular range 15 to 50°. Results compared to DWBA calculations.

2006Ze01,2007Ze04: E=115 MeV/nucleon. Triton beam produced from 140 MeV/nucleon α beam impinging on a Be target. Measured ^3He spectrum, $\sigma(\theta)$ using the S800 spectrometer of two two-dimensional cathode-readout drift detectors (CRDCs). FWHM=300 keV, DWBA analysis. Deduced Gamow-Teller transition strengths.

 ^{26}Na Levels

E(level) [†]	J ^π #	L [@]	B(GT) [@]	Comments
0	3 ⁺			
88 15	1 ⁺	0	0.41 5	
241 15	2 ⁺			
420 15	2 ⁺			
1.4×10 ³ @ 2	1 ⁺ @	0	0.09 2	E(level): A group of unresolved levels between 1450 and 1650 keV is also reported in 1987Pe06 .
1860 [‡] 60				
1996 30				
2048 15				
2186 15				
2290 15	(3 ⁺ ,4 ⁺)			J ^π : Best fit as 4 ⁺ in DWBA analysis although the 3 ⁺ prediction gives a good account of all data other than the most forward-angle measurement in 1987Pe06 .
2456 ^a 15				
2697 ^a 15				
2815 15				
2933 15	(1 ⁺ ,2 ⁺)			
3123 15				
3232 15	(2 ⁺)			
3310 15				
3400 15				
3618 15				
3814 15				
3966 15				
4083 15				
4190 15				E(level): Probably doublet (1974FI01).
4200 ^{&}	2 ⁻	1 ^{&}		J ^π : From Figure 4 of 2006Ze01 .
4440 15				
4702 ^b 15				E(level): Probably doublet (1974FI01).
4970 ^b 40	(4 ⁺)			
5080 ^b 60	(2 ⁺)			
7200 ^{&}		1 ^{&}		
9000 ^{&}		1 ^{&}		

[†] From measured particle-energy spectra in [1974FI01](#) except where noted.

$^{26}\text{Mg}(t, ^3\text{He})$ [1974FI01](#), [1987Pe06](#), [2006Ze01](#) (continued)

^{26}Na Levels (continued)

‡ From measured particle-energy spectra in [1987Pe06](#).

From DWBA analysis in [1987Pe06](#) except where noted.

@ Based on Gamow-Teller strengths in [2006Ze01](#).

& From spectrum in Figure 1 of [2006Ze01](#).

^a Level observed as part of multiplet centered on 2600 keV 200 in [2006Ze01](#) listing $J^\pi=1^+$, L=0, and B(GT)=0.13 2.

^b Level observed as part of multiplet centered on 5100 keV 400 in [2006Ze01](#) listing $J^\pi=1^+$, L=0, and B(GT)=0.22 4.