^{76}Ge(d,^{3}He),(pol d,^{3}He) 1978Ro14,2009Ka06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Alexandru Negret, Balraj Singh	NDS 114, 841 (2013)	30-Jun-2013

The (pol d, ^{3}He) data are from 2009Ka06.

1978Ro14: E=26 MeV, 1μA deuterium beam accelerated by the Orsay MP tandem accelerator, a GeO_2 target (enrichment 95.5% in ^{76}Ge, thickness 67 μg/cm^2). A split pole magnetic spectrometer was used with four solid state position sensitive detectors in the focal plane. FWHM=15 keV for the ^{3}He spectra. Measured $\sigma(\theta)$ with an absolute uncertainty of the order of 20%. DWBA calculations performed with the DWUCK code.

2009Ka06, 2008KaZT: E=80 MeV beam provided by the AVF cyclotron at RCNP, Osaka. Enriched target. Vector-polarized 80 MeV deuteron beam with A_y=0.520 *10*, ^{3}He outgoing particles detected and analyzed with the Grand Raiden magnetic spectrometer, with an angular aperture of ±1.1°. FWHM=50 keV. Measured precise absolute cross sections and relative cross sections where these are maximum for the relevant L transfer, angular distributions and polarization asymmetries. Vector analyzing powers were deduced from the measured polarization asymmetries by dividing by a factor of 1.04 (2*[beam vector polarization=0.520 *10*]). Spectroscopic factors were deduced from analysis of cross section data by DWBA calculations using PTOLEMY code and six different sets of optical-model potential parameters and two bound-state potential parameters. The polarized deuteron beam is also used to obtain asymmetries and subsequent information about parities of levels.

Other: 1984Ha31: E=21-24 MeV; measured mass excess.

Measured cross sections and polarization asymmetries (2008KaZT)

Level keV	dσ/dΩ(4.5°) mb/sr	dσ/dΩ(8°) mb/sr	dσ/dΩ(12°) mb/sr	V.A.P (10°)
0	4.44 a	1.16	0.79	-0.063 *9*
178	0.10 *1* a	0.026	0.020	
229	1.19	1.25 *13* a	0.67	-0.055 *6*
432			0.040	
606	0.025		0.015	
882	0.16	0.16	0.17	+0.029 *15*
1167	0.054	0.049 a	0.029	-0.075 *28*
1256	1.55 a	0.34	0.30	-0.027 *16*
1508	0.065	0.047	0.090 *16*	a
1545	0.069	0.017	0.034	+0.009 *20*
1622	0.26	0.085	0.14	+0.013 *16*
1865	0.10	0.028	0.031	
1935	0.31 a	0.082	0.058	+0.005 *40*
2015	0.98	0.39	0.92	+0.024 *7*
2265	0.070	0.021	0.020	

a: cross section used to deduce the spectroscopic factors.
V.A.P.: vector analyzing power from measured polarization asymmetry.

^{75}Ga Levels

E(level)[†]	J$^\pi$[@]	L[&]	C^{2}S[a]	Comments
0	3/2$^-$	1	1.21[b]	C^{2}S: 1.10 (1978Ro14).
178[‡] *7*	3/2$^-$	1	0.027[b]	C^{2}S: 0.06 (1978Ro14).
229[‡] *7*	5/2$^-$	3	2.04[b]	C^{2}S: 2.44 (1978Ro14).
432		(1,3)	<0.03,0.1	
606		(1,3)	<0.03,0.2	
882 *7*	7/2$^-$	3	0.39	
1167 *7*	5/2$^-$	3	0.18	
1256 *7*	3/2$^-$	1	0.43[b]	C^{2}S: 0.32 (1978Ro14).
1508[#] *7*		(4)	0.23[b]	C^{2}S: for L+1/2. Other: 0.25 (1978Ro14).

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^{76}Ge(d,^{3}He),(pol d,^{3}He) 1978Ro14,2009Ka06 (continued)

^{75}Ga Levels (continued)

E(level)[†]	Jπ[@]	L[&]	C^{2}S[a]	Comments
1545[#] *7*	7/2$^-$	3	0.10	
1622 *7*	7/2$^-$	3	0.43	
1854 *10*				E(level): from 2008KaZT. Other: 1865 (1978Ro14).
1935 *7*	1/2$^-$	1	0.087[b]	C^{2}S: 0.09 (1978Ro14).
1976 *7*				
2015 *7*	7/2$^-$	3	2.7	
2090 *7*				
2265? *10*				E(level): assumed to be unresolved group corresponding to 2257.7 and 2272.8 levels in Adopted Levels.

[†] From 1978Ro14.
[‡] 178 and 229 groups are unresolved in 2008KaZT, angle-to-angle ratios of cross sections used to assign separate cross sections.
[#] 1508 and 1545 groups are unresolved in 2008KaZT; line-shape fitting was used to assign separate cross sections.
[@] From measured polarization asymmetry in 2008KaZT, unless specified otherwise.
[&] 2008KaZT relied on the assignment of L transfers in previous studies. These assignments were confirmed in 2008KaZT from their measured angle-to-angle ratios.
[a] From 1978Ro14, unless otherwise stated.
[b] From 2008KaZT.