^{70}Ge(^{3}He,d),(^{3}He,dγ) 1974Be54,1968Br11,1976Ro01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 188,1 (2023)	17-Jan-2023

1974Be54 (also 1971Be30): E=17 MeV ^{3}He beam from the University of Pennsylvania tandem Van de Graaff accelerator. Enriched (92.6%) target. Measured deuteron spectra and $\sigma(\theta)$ using magnetic spectrometer (FWHM=18-24 keV) and Kodak emulsion plates from θ=3.75° to 86.25°. Deduced levels, J, π, L-transfers, spectroscopic factors from DWBA analysis.

1968Br11: E=15 MeV beam from the University of Pennsylvania tandem accelerator. Measured $\sigma(\theta)$ for θ=11°−40° with a broad-range magnetic spectrograph and Kodak emulsion plates. Deduced levels, J, π, L-transfers from DWBA analysis. Cross sections listed for 11 groups up to 2674 excitation energy.

1976Ro01: (^{3}He,dγ) E=15 MeV at University of Pittsburgh. Enriched (98.8%) target. Measured dγ coin to establish doublet structure of the first excited state,

^{71}As Levels

E(level)[†‡]	L[†]	(2J+1)C^{2}S[†]	Comments
0	3[a]	6.23	dσ/dΩ(max)=1.20 mb/sr (1974Be54). dσ/dΩ(max)=0.7 mb/sr (1968Br11).
143.2[#]	1[@a]	2.20[@]	
147.3[#]	1[@a]	2.20[@]	dσ/dΩ(max)=6.70 mb/sr for 146 doublet (1974Be54). dσ/dΩ(max)=3.28 mb/sr (1968Br11) for 145 15 doublet.
510 *7*	1[a]	0.18	dσ/dΩ(max)=0.60 mb/sr (1974Be54). dσ/dΩ(max)=0.25 mb/sr (1968Br11) for 505 15.
830 *7*	1	0.07	dσ/dΩ(max)=0.26 mb/sr (1974Be54). dσ/dΩ(max)=0.07 mb/sr (1968Br11) for 826 15.
873 *7*	3	0.86	dσ/dΩ(max)=0.21 mb/sr (1974Be54). dσ/dΩ(max)=0.09 mb/sr (1968Br11) for 869 15.
1004[&] *7*	1+4	0.16+4.71	dσ/dΩ(max)=0.58 mb/sr for L=1, 0.62 mb/sr for L=4 (1974Be54). dσ/dΩ(max)=0.50 mb/sr (1968Br11) for 992 15.
1138 *7*	2	0.32	dσ/dΩ(max)=0.72 mb/sr (1974Be54). dσ/dΩ(max)=0.31 mb/sr (1968Br11) for 1128 20.
1264 *7*	(3)	(0.46)	dσ/dΩ(max)=0.12 mb/sr (1974Be54).
1422 *7*	1[a]	0.23	dσ/dΩ(max)=0.90 mb/sr (1974Be54). dσ/dΩ(max)=0.39 mb/sr (1968Br11) for 1416 20.
1544 *7*	0	0.06	dσ/dΩ(max)=0.88 mb/sr (1974Be54). dσ/dΩ(max)=0.20 mb/sr (1968Br11) for 1536 20.
1609 *7*	1	0.02	dσ/dΩ(max)=0.06 mb/sr (1974Be54).
1972 *7*	4	2.78	dσ/dΩ(max)=0.64 mb/sr (1974Be54). dσ/dΩ(max)=0.33 mb/sr (1968Br11) for 1966 20.
2166 *10*	2	0.06	dσ/dΩ(max)=0.16 mb/sr (1974Be54).
2305 *10*	2	0.07	dσ/dΩ(max)=0.18 mb/sr (1974Be54). dσ/dΩ(max)=0.12 mb/sr (1968Br11) for 2305 20.
2441 *10*			dσ/dΩ(max)=0.12 mb/sr (1974Be54).
2526 *10*			dσ/dΩ(max)=0.16 mb/sr (1974Be54).
2674 *10*	2	0.31	dσ/dΩ(max)=0.97 mb/sr (1974Be54). dσ/dΩ(max)=0.56 mb/sr (1968Br11) for 2674 20.
2803 *10*	0	0.01	dσ/dΩ(max)=0.15 mb/sr (1974Be54).
2892 *10*	0	0.02	dσ/dΩ(max)=0.26 mb/sr (1974Be54).
2961 *10*			dσ/dΩ(max)=0.07 mb/sr (1974Be54).
3119 *10*			dσ/dΩ(max)=0.17 mb/sr (1974Be54).
3260 *10*			dσ/dΩ(max)=0.38 mb/sr (1974Be54).
3303 *10*	2	0.10	dσ/dΩ(max)=0.28 mb/sr (1974Be54).
3394 *10*			dσ/dΩ(max)=0.40 mb/sr (1974Be54).
3506 *10*	2	0.15	dσ/dΩ(max)=0.43 mb/sr (1974Be54).
3626 *10*	3	1.14	dσ/dΩ(max)=0.49 mb/sr (1974Be54).
3855 *10*			dσ/dΩ(max)=0.26 mb/sr (1974Be54).
3925 *10*	0	0.02	dσ/dΩ(max)=0.18 mb/sr (1974Be54).

Continued on next page (footnotes at end of table)

^{70}Ge(^{3}He,d),(^{3}He,dγ) 1974Be54,1968Br11,1976Ro01 (continued)

^{71}As Levels (continued)

† From 1974Be54 unless otherwise stated. The results from 1968Br11 agree well with those from 1974Be54.
‡ Uncertainty is given (1974Be54) as 7 keV for levels below 2 MeV and 10 keV for higher levels.
# From 1976Ro01. In 1974Be54, unresolved doublet at 146 *7*.
@ From 1974Be54 for unresolved doublet at 146 *7*.
& Doublet.
a Same L value obtained in 1968Br11.

$\gamma(^{71}As)$

E_γ †	E_i(level)	E_f	Comments
143.2	143.2	0	Intensity of 143.2γ is about 15% of the intensity of 147.3γ.
147.3	147.3	0	

† From 1976Ro01, seen in singles and dγ coin data.

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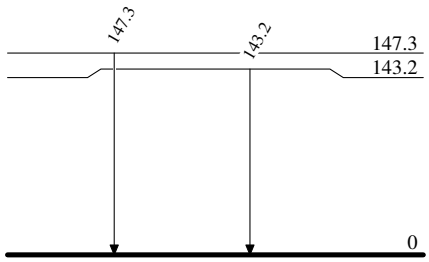
Level Scheme



$^{71}_{33}As_{38}$