^{134}Ba(d,p) 1970Vo04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Alexander A. Rodionov And Yuri L. Khazov	NDS 109, 517 (2008)	22-Jan-2008

1970Vo04: E=12 MeV; FWHM=13-15 MeV. Measured $\sigma(\theta)$, DWBA analysis, magnetic spectrograph.

^{135}Ba Levels

E(level)‡	Jπ#	L	(2J+1)S†	Comments
0.0	3/2+	2	1.38	dσ/dΩ=0.80 mb/sr.
221 *5*	1/2+	0	0.41	dσ/dΩ=1.56 mb/sr (5°).
269 *5*				dσ/dΩ≈0.08 mb/sr.
487? *5*				dσ/dΩ≈0.02 mb/sr.
594? *10*				dσ/dΩ?0.01 mb/sr.
717 *10*				dσ/dΩ≈0.05 mb/sr.
855? *10*				dσ/dΩ≈0.02 mb/sr.
909 *10*	1/2+	0	0.047	dσ/dΩ=0.19 mb/sr (5°).
979 *10*		2	0.35	dσ/dΩ=0.27 mb/sr.
1215 *10*				dσ/dΩ≈0.02 mb/sr.
1445 *10*	7/2−	3	3.6	dσ/dΩ=2.0 mb/sr.
1581 *10*	3/2−	1	1.12	dσ/dΩ=3.1 mb/sr. Jπ: (3/2)− in 'Adopted Levels'.
1876 *10*				dσ/dΩ≈0.04 mb/sr.
1972 *10*				dσ/dΩ≈0.03 mb/sr.
1997 *10*	1/2−	1	0.28	dσ/dΩ=0.78 mb/sr. Jπ: (1/2)− in 'Adopted Levels'.
2076 *15*		(1)	(0.021)	dσ/dΩ=0.06 mb/sr.
2118 *15*				dσ/dΩ≈0.03 mb/sr.
2152 *15*		(3)	(0.32)	dσ/dΩ=0.2 mb/sr.
2447 *15*		1	0.094	dσ/dΩ=0.28 mb/sr.
2478 *15*		(3)	(0.21)	dσ/dΩ=0.14 mb/sr.
2568? *15*				dσ/dΩ≈0.19 mb/sr.
2603? *15*				dσ/dΩ≈0.11 mb/sr.
2663? *15*				dσ/dΩ≈0.06 mb/sr.
2686? *15*				dσ/dΩ≈0.02 mb/sr.
2709? *15*		(1)	(0.07)	dσ/dΩ≈0.22 mb/sr.
2728? *15*		1	0.22	dσ/dΩ=0.66 mb/sr.
2784? *15*		(1)	(0.045)	dσ/dΩ≈0.14 mb/sr.
2850? *15*		3	0.48	dσ/dΩ=0.37 mb/sr.
2874? *15*				dσ/dΩ≈0.15 mb/sr.
2899? *15*				dσ/dΩ=0.23 mb/sr.
2949? *15*		3	0.64	dσ/dΩ=0.51 mb/sr.
3085? *20*		1	0.36	dσ/dΩ=1.09 mb/sr.
3327? *20*				dσ/dΩ≈0.08 mb/sr.
3630? *20*				dσ/dΩ≈0.15 mb/sr.
3670? *20*				dσ/dΩ≈0.2 mb/sr.
3787? *20*				dσ/dΩ≈0.3 mb/sr.
3936? *20*				dσ/dΩ≈0.2 mb/sr.
4074? *20*				dσ/dΩ≈0.1 mb/sr.
4269? *20*				dσ/dΩ≈0.2 mb/sr.
4729? *20*				dσ/dΩ≈0.1 mb/sr.
4890? *20*				dσ/dΩ≈0.2 mb/sr.
4940? *20*				dσ/dΩ≈0.1 mb/sr.

† From DWBA calculations 'with radial cutoff'. 1970Vo04 also list these factors 'without cutoff'. The authors state that experimental $\sigma(\theta)$ patterns fit better 'with the radial cutoff' calculations.

‡ The origin of all levels above 2478 is unclear. Some or all of these may be due to unknown high-lying (>3900) states in ^{136}Ba,

Continued on next page (footnotes at end of table)

^{134}Ba(d,p) 1970Vo04 (continued)

^{135}Ba Levels (continued)

^{137}Ba and ^{138}Ba contributed by impurities of ^{135}Ba, ^{136}Ba and ^{137}Ba in the target material, respectively. The existence of these levels is marked as uncertain by the evaluators.

Proposed (1970Vo04) on the basis of measured L-values and shell-model considerations.