

⁷⁹Br(α ,n γ) **1991Do05**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. K. Tuli, E. Browne		NDS 157, 260 (2019)	1-Mar-2019

E=13, 16, 19, and 27 MeV. Measured γ excitation functions, linear polarization, $\gamma(\theta)$, $\gamma\gamma$, and lifetimes, low-energy photon spect. For assignment of γ rays to ⁸²Br, singles γ -ray spectra recorded in cross reaction ⁷⁸Se(⁷Li,3n γ) at E=35 MeV.

⁸²Rb Levels

E(level) [†]	J ^{π} ^b	T _{1/2} ^{&}	Comments
0.0	1 ⁺	1.2575 min 2	T _{1/2} : From Adopted Levels.
68.9 15	5 ⁻		
88.9 9	(2 ⁻)	1.66 ns 14	J ^{π} : from systematics.
189.5 12	3 ⁽⁻⁾	0.21 ns 14	
191.9 [‡] 18	6 ⁺	13.9 ns 21	
225.6 12	(2)	0.28 ns 14	
244.5 12	(3 ⁻) ^a	0.35 ns 14	
256.0 [‡] 19	7 ⁽⁺⁾		
266.9 9	(2 ⁺)		
301.5 [‡] 20	8 ⁽⁺⁾		
310.1 13	(4 ⁻) ^a		
340.3 12	(3)		
394.2 18	(6 ⁻)		J ^{π} : adopted value. Assignment of 5 ⁺ by 1991Do05 is disputed by later work using (HI,xn γ) by 1999Do02 (some of the same authors As 1991Do05). This assignment, however, is not In agreement with linear polaization measurement.
439.9 15	(5 ⁻) ^a		
484.7 [#] 18	6 ⁻		
533.9 18	(4)		
609.0 15	(5)		
617.7 16			
661.3 15	(5,6)		
691.3 [@] 18	(7 ⁻)		
734.6 20			
864.2 [‡] 22	(9 ⁺)		
1281.5 [‡] 22	(10 ⁺)		

[†] From a least-squares fit to the E γ data assuming $\Delta E\gamma$ is 1 keV.

[‡] Possible Configuration=((π g_{9/2})(ν g_{9/2}))+collective excitation.

[#] Possible Configuration=((π p_{3/2})(ν g_{9/2})).

[@] Possible Configuration=((π f_{5/2})(ν g_{9/2})).

[&] From centroid-shift method, except where noted.

^a From $\gamma(\theta)$, excit.

^b From this study, except as noted.

γ (⁸²Rb)

E γ	E _i (level)	J _i ^{π}	E _f	J _f ^{π}	Mult. [‡]	α [#]	Comments
45.4	301.5	8 ⁽⁺⁾	256.0	7 ⁽⁺⁾	D		
64.2	256.0	7 ⁽⁺⁾	191.9	6 ⁺	D		
65.5	310.1	(4 ⁻)	244.5	(3 ⁻)			
88.9	88.9	(2 ⁻)	0.0	1 ⁺	(E1)	0.1356	$\alpha(K)=0.1200$ 17; $\alpha(L)=0.01318$ 19; $\alpha(M)=0.00216$ 3

Continued on next page (footnotes at end of table)

$^{79}\text{Br}(\alpha, n\gamma)$ **1991Do05 (continued)** $\gamma(^{82}\text{Rb})$ (continued)

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [‡]	$\alpha^\#$	Comments
							$\alpha(\text{N})=0.000238$ 4; $\alpha(\text{O})=9.39\times 10^{-6}$ 14 Mult.: RUL and neighboring systematics (1991Do05).
100.7	189.5	3 ⁽⁻⁾	88.9	2 ⁽⁻⁾			
114.8	340.3	(3)	225.6	(2)			
120.6	310.1	(4 ⁻)	189.5	3 ⁽⁻⁾			
123.0	191.9	6 ⁺	68.9	5 ⁻	E1	0.0520	$\alpha(\text{K})=0.0460$ 7; $\alpha(\text{L})=0.00501$ 7; $\alpha(\text{M})=0.000821$ 12 $\alpha(\text{N})=9.13\times 10^{-5}$ 13; $\alpha(\text{O})=3.70\times 10^{-6}$ 6 Mult.: from excit, $\gamma(\theta)$, linear pol=0.34 17.
130.2	439.9	(5 ⁻)	310.1	(4 ⁻)			
136.8	225.6	(2)	88.9	(2 ⁻)			
139.6	533.9	(4)	394.2	(6 ⁻)			
155.6	244.5	(3 ⁻)	88.9	(2 ⁻)			lin pol=-0.31 19.
168.9 [†]	609.0	(5)	439.9	(5 ⁻)			
178.0	266.9	(2 ⁺)	88.9	(2 ⁻)			
206.6	691.3	(7 ⁻)	484.7	6 ⁻			
221.3	661.3	(5,6)	439.9	(5 ⁻)			
242.0	310.1	(4 ⁻)	68.9	5 ⁻			
251.3	340.3	(3)	88.9	(2 ⁻)			
266.9	266.9	(2 ⁺)	0.0	1 ⁺			
277.4	617.7		340.3	(3)			
299.1	609.0	(5)	310.1	(4 ⁻)			
325.2	394.2	(6 ⁻)	68.9	5 ⁻			lin pol=-1.0 3.
351.3 [†]	661.3	(5,6)	310.1	(4 ⁻)			
370.2	439.9	(5 ⁻)	68.9	5 ⁻			
415.8	484.7	6 ⁻	68.9	5 ⁻			lin pol=-0.30 13.
433.1	734.6		301.5	8 ⁽⁺⁾			
435.4	691.3	(7 ⁻)	256.0	7 ⁽⁺⁾			
465.2 [†]	533.9	(4)	68.9	5 ⁻			
499.4 [†]	691.3	(7 ⁻)	191.9	6 ⁺			
542.8	734.6		191.9	6 ⁺			
562.7	864.2	(9 ⁺)	301.5	8 ⁽⁺⁾	D		
980	1281.5	(10 ⁺)	301.5	8 ⁽⁺⁾			

† Weak transition.

‡ From excitation functions, $\gamma(\theta)$, unless stated otherwise.

Additional information 1.

$^{79}\text{Br}(\alpha, n\gamma)$ 1991Do05

Level Scheme

