

$^{11}\text{B}(\gamma,\gamma)$ 1978Ku12,1980Mo23

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, C. G. Sheu		NP A880,88 (2012)	1-Jan-2011

- 1958Me79: $^{11}\text{B}(\gamma,\gamma)$.
 1958Ra14: $^{11}\text{B}(\gamma,\gamma)$.
 1959Co95: $^{11}\text{B}(\gamma,\gamma)$.
 1963Va10: ^{11}B ; measured not abstracted; deduced nuclear properties.
 1964Bo22: $^{11}\text{B}(\gamma,\gamma)$ $E_\gamma=0.5$ to 3.0 MeV, measured σ . ^{11}B deduced Γ -level.
 1965Ke05: $^{11}\text{B}(\gamma,\gamma)$ $E\leq 2.7$ MeV, measured $T_{1/2}(2.13$ MeV level). ^{11}B level deduced $T_{1/2}$.
 1965Sc04: ^{11}B ; measured not abstracted; deduced nuclear properties.
 1968Cr07: $^{11}\text{B}(\gamma,\gamma)$ $E\approx 1.8$ - 3.6 MeV, measured σ . ^{11}B levels deduced Γ -level.
 1973Sa21: $^{11}\text{B}(\gamma,\gamma')$ $E=5$ MeV; measured $\sigma(E_\gamma)$. ^{11}B levels deduced level-width.
 1978Ku12: $^{11}\text{B}(\gamma,\gamma)$ $E=15$ MeV bremsstrahlung, measured transmission coefficients. ^{11}B levels deduced Γ_γ .
 1980Mo23: $^{11}\text{B}(\gamma,\gamma')$ $E=10.3$ MeV bremsstrahlung; measured E_γ , I_γ , self-absorption. ^{11}B deduced effective temperature. ^{11}B levels deduced Γ , γ -multipolarity.
 2009Ru04: $^{11}\text{b}(\text{polarized } \gamma, \gamma')$, $E=1$ - 100 MeV; measured E_γ , I_γ , azimuthal asymmetries; deduced levels, mixing ratios.

 ^{11}B Levels

E(level)	J^π	$T_{1/2}$	Comments
0			
2124 3	$1/2^-$	0.117 eV 4	$\Gamma_{\gamma 0}=0.117$ eV 4 E(level): from 2124 keV 3 (1965Sc04). $\Gamma_{\gamma 0}$: from 0.140 eV 18 (1958Me79), 0.11 eV 4 (1964Bo22), 0.137 eV 20 (1965Ke05), 0.114 eV 5 (1965Sc04), 0.12 eV 2 (1968Cr07), 0.11 eV 2 (1978Ku12), 0.118 eV 13 (1980Mo23) also see 0.22 eV 6 (1963Va10) 0.23 eV 9 (1973Sa21). J^π : from (1958Me79).
4.44×10^3	$5/2^-$	0.56 eV 2	$\Gamma_{\gamma 0}=0.56$ eV 2 $\Gamma_{\gamma 0}$: from 0.56 eV 8 (1958Ra14), 0.430 eV 95 (1959Co95), 0.53 eV 21 (1973Sa21), 0.615 eV 37 (see 1975Aj02), 0.58 eV 4 (1978Ku12), 0.55 eV 2 (1980Mo23). Also see 0.615 eV 37 (In 1975Aj02). Γ : also see $\Gamma=0.55$ eV 20 from (1980Mo23).
5.02×10^3	$3/2^-$	1.97 eV 7	$\Gamma_{\gamma 0}=1.68$ eV 6 $\Gamma_{\gamma 0}$: from 1.80 eV 13 (1978Ku12), 1.64 eV 7 (1980Mo23); also see 1.1 eV 2 (1959Co95). Γ : from (1980Mo23).
6.74×10^3	$7/2^-$	0.030 eV 7	$\Gamma_{\gamma 0}=0.021$ eV 5 $\Gamma_{\gamma 0}$: from 0.021 eV 5 (1980Mo23). Γ : using $\Gamma_{\gamma 0}/\Gamma=0.70$ gives $\Gamma=0.030$ eV 7 (1980Mo23).
6.79×10^3	$1/2^+$	0.39 eV 5	$\Gamma_{\gamma 0}=0.26$ eV 3 $\Gamma_{\gamma 0}$: from 0.26 eV 3 (1980Mo23). Γ : using $\Gamma_{\gamma 0}/\Gamma=0.66$ gives $\Gamma=0.39$ eV 5 (1980Mo23).
7.29×10^3	$5/2^+$	1.14 eV 8	$\Gamma_{\gamma 0}=1.00$ eV 7 $\Gamma_{\gamma 0}$: from 1.17 eV 26 (1978Ku12), 0.99 eV 7 (1980Mo23). Γ : from (1980Mo23).
7.98×10^3	$3/2^+$	1.15 eV 15	$\Gamma_{\gamma 0}=0.53$ eV 7 $\Gamma_{\gamma 0}$: from 0.53 eV 7 (1980Mo23). Γ : from (1980Mo23).
8.56×10^3		1.00 eV 9	$\Gamma_{\gamma 0}=0.53$ eV 5 J^π : $< 5/2^-$. $\Gamma_{\gamma 0}$: from 0.53 eV 5 (1980Mo23). Γ : using $\Gamma_{\gamma 0}/\Gamma=0.53$ gives $\Gamma=1.00$ eV 9 (1980Mo23): from erratum.
8.92×10^3	$5/2^-$	4.31 eV 24	$\Gamma_{\gamma 0}=4.17$ eV 21

Continued on next page (footnotes at end of table)

$^{11}\text{B}(\gamma,\gamma)$ **1978Ku12,1980Mo23 (continued)** ^{11}B Levels (continued)

<u>E(level)</u>	<u>J^π</u>	<u>T_{1/2}</u>	<u>Comments</u>					
Γ _{γ0} : from 4.20 eV 52 (1978Ku12), 4.16 eV 23 (1980Mo23).								
Γ: from (1980Mo23).								
<u>γ(¹¹B)</u>								
<u>E_γ</u>	<u>I_γ[‡]</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.[†]</u>	<u>δ</u>	<u>Comments</u>
2.12×10 ³	100	2124	1/2 ⁻	0		M1		
2264.9	6.3 4	7.29×10 ³	5/2 ⁺	5.02×10 ³	3/2 ⁻	M1+E2	+0.028 +78-75	
2840.2	5.3 4	7.29×10 ³	5/2 ⁺	4.44×10 ³	5/2 ⁻	M1+E2	-0.08 +16-12	
2895	14.2 6	5.02×10 ³	3/2 ⁻	2124	1/2 ⁻	M1+E2	-0.19 +10-17	
4.44×10 ³	100	4.44×10 ³	5/2 ⁻	0		M1+E2	+0.158 +25-21	mixing ratio from (2009Ru04).
4474.3	2.7 1	8.92×10 ³	5/2 ⁻	4.44×10 ³	5/2 ⁻	M1+E2	-0.061 +25-21	
5.02×10 ³	85.8 26	5.02×10 ³	3/2 ⁻	0		M1+E2	-0.036 13	mixing ratio from (2009Ru04).
6.74×10 ³		6.74×10 ³	7/2 ⁻	0				
6.79×10 ³		6.79×10 ³	1/2 ⁺	0				
7282.9	88.4 27	7.29×10 ³	5/2 ⁺	0		M1+E2	+0.001 +22-21	mixing ratio from (2009Ru04).
7.98×10 ³		7.98×10 ³	3/2 ⁺	0				
8.56×10 ³		8.56×10 ³		0				
8916.3	97.3 29	8.92×10 ³	5/2 ⁻	0		M1+E2	0.000 14	mixing ratio from (2009Ru04).

† From (2009Ru04).

‡ From (2009Ru04).

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Level Scheme

Intensities: Type not specified

Legend

- ▶ $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- ▶ $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- ▶ $I_\gamma > 10\% \times I_\gamma^{\text{max}}$

