

$^{34}\text{S}(\gamma,\gamma'),(\text{pol } \gamma,\gamma')$  **1984Be26,1978Be46**

Type	Author	History	Literature Cutoff Date
Full Evaluation	Ninel Nica, Balraj Singh	NDS 113, 1563 (2012)	28-May-2012

**1984Be26:**  $^{34}\text{S}(\text{pol } \gamma,\gamma')$  E=18 MeV electron bremsstrahlung, nuclear resonance fluorescence. Used four Ge(Li) detectors At  $0^\circ$ ,  $90^\circ$ ,  $180^\circ$ , and  $270^\circ$  (azimuthal angles relative to the polarization plane of the linearly polarized beam) to measure parallel and perpendicular asymmetries to determine parity.

**1978Be46:**  $^{34}\text{S}(\gamma,\gamma')$  E=18 MeV electron bremsstrahlung, nuclear resonance fluorescence. Used 77.9%-enriched  $^{34}\text{S}$  target and Ge(Li) detector At  $125^\circ$  relative to the bremsstrahlung beam.

Other: **1977BeYD**.

 $^{34}\text{S}$  Levels

E(level)	$J^\pi$ <sup>†</sup>	$\Gamma_{\gamma 0}$ <sup>‡</sup>	Comments
0.0	$0^+$		
7220@ 2	$(1,2^+)@$	0.92@ eV 28	$\Gamma_{\gamma 0}$ : 1.09 33 (1978Be46, if $J^\pi=2^+$ ).
7781@ 2	$(1)@$	0.57@ eV 9	
8185#@ 3	$(1)^+#@$	0.78 eV 20	$\Gamma_{\gamma 0}$ : weighted average of 0.7 3 (1984Be26) and 0.86 28 (1978Be46).
8385@ 3	$(1)@$	0.49@ eV 15	
8511@ 3	$(1)@$	0.52@ eV 9	
8657#@ 7	$(1)^+#@$	0.41 eV 19	$\Gamma_{\gamma 0}$ : weighted average of 0.4 3 (1984Be26) and 0.41 25 (1978Be46). According to 1984Be26 this peak could be contaminated with inelastically scattered photons from 10790 level to $2^+$ , 2127 In which case $\Gamma_0=1.39$ eV, and $\Gamma_{\text{inelastic}}=1.18$ eV.
9478#@ 4	$(1)^+#@$	1.1 eV 3	$\Gamma_{\gamma 0}$ : weighted average of 1.0 5 (1984Be26) and 1.13 49 (1978Be46).
9640@ 4	$(1,2^+)@$	3.6@ eV 7	
9711@ 5	$(1,2^+)@$	0.50@ eV 14	
9860#@ 7	$(1)^+#@$	0.60 eV 12	$\Gamma_{\gamma 0}$ : weighted average of 0.54 19 (1984Be26) and 0.63 15 (1978Be46).
10170#@ 5	$(1)^+#@$	1.06 eV 20	$\Gamma_{\gamma 0}$ : weighted average of 1.0 3 (1984Be26) and 1.11 28 (1978Be46).
10786@ 13	$(1,2^+)@$	0.75@ eV 14	
10803# 6	$(1,2^+)#$	0.60# eV 11	

<sup>†</sup> Based on the general statement that nuclear resonance fluorescence populates mostly J=1 states and to a lesser extent J=2<sup>+</sup> states, whence the tentative spin assignments (by evaluators). Parity determined by the (pol  $\gamma,\gamma'$ ) experiment (1984Be26) is firmly ADOPTED.

<sup>‡</sup> Assuming J=1 and 100% decay to g.s..

# From 1984Be26.

@ From 1978Be46.

 $\gamma(^{34}\text{S})$ 

$E_\gamma$ <sup>†</sup>	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	$E_\gamma$ <sup>†</sup>	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$
7219 2	7220	$(1,2^+)$	0.0	$0^+$	9639 4	9640	$(1,2^+)$	0.0	$0^+$
7780 2	7781	(1)	0.0	$0^+$	9710 5	9711	$(1,2^+)$	0.0	$0^+$
8184 3	8185	$(1)^+$	0.0	$0^+$	9858 7	9860	$(1)^+$	0.0	$0^+$
8384 3	8385	(1)	0.0	$0^+$	10168 5	10170	$(1)^+$	0.0	$0^+$
8510 3	8511	(1)	0.0	$0^+$	10784 13	10786	$(1,2^+)$	0.0	$0^+$
8656 7	8657	$(1)^+$	0.0	$0^+$	10801 6	10803	$(1,2^+)$	0.0	$0^+$
9477 4	9478	$(1)^+$	0.0	$0^+$					

<sup>†</sup> From level energy differences (deduced by evaluators).

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## Level Scheme

