

${}^{208}\text{Pb}({}^{36}\text{S}, {}^{39}\text{S}\gamma)$ 2016Ch33

Type	Author	History Citation	Literature Cutoff Date
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2016Ch33: E=215 MeV ${}^{36}\text{S}$ beam was produced from the Tandem-ALPI accelerator complex at the INFN Legnaro National Laboratory, Italy. Target was $300 \mu\text{g}/\text{cm}^2$ ${}^{208}\text{Pb}$ enriched to 99.7% on a $20 \mu\text{g}/\text{cm}^2$ carbon backing. Fragments were separated with the PRISMA spectrometer. γ rays were detected with the CLARA array consisting of 25 Compton-suppressed HPGe Clover detectors. Measured E_γ , I_γ , recoil- γ coincidences. Comparison with shell model calculations using the SDPF-U effective interaction and systematics of odd-A sulfur and argon isotopes.

 ${}^{39}\text{S}$ Levels

E(level) [†]	J^π [#]
0.0	(7/2 ⁻)
59.0 <i>14</i>	(5/2 ⁻)
398.0 <i>10</i>	(3/2 ⁻)
864.0 <i>14</i>	(3/2 ⁺)
1517.0 <i>10</i>	(11/2 ⁻)
1656.0? [‡] <i>10</i>	(9/2 ⁻)

[†] From a least-squares fit to γ -ray energies.

[‡] From a very tentative placement of the 1656 γ to ground state based on comparison with ${}^{41}\text{Ar}$ level scheme and shell-model predictions.

[#] Based on intensity considerations and comparison to shell model calculations (2016Ch33).

 $\gamma({}^{39}\text{S})$

E_γ	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π
339 <i>1</i>	17.3 <i>24</i>	398.0	(3/2 ⁻)	59.0	(5/2 ⁻)
398 <i>1</i>	18.1 <i>27</i>	398.0	(3/2 ⁻)	0.0	(7/2 ⁻)
466 <i>1</i>	24.1 <i>32</i>	864.0	(3/2 ⁺)	398.0	(3/2 ⁻)
1517 <i>1</i>	100.0 <i>65</i>	1517.0	(11/2 ⁻)	0.0	(7/2 ⁻)
1656 [‡] <i>1</i>	34.3 <i>49</i>	1656.0?	(9/2 ⁻)	0.0	(7/2 ⁻)

[†] Relative intensities normalized to 100 for 1517 γ (2016Ch33).

[‡] Placement of transition in the level scheme is uncertain.

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Legend

Level SchemeIntensities: Relative I_γ

- ▶ $I_\gamma < 2\% \times I_\gamma^{max}$
- ▶ $I_\gamma < 10\% \times I_\gamma^{max}$
- ▶ $I_\gamma > 10\% \times I_\gamma^{max}$
- - - -▶ γ Decay (Uncertain)

