⁹Be(⁴⁸Ca,x'γ) 2023Gr04

Туре	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 201,1 (2025)	31-Oct-2024

Adapted from the XUNDL dataset for 2023Gr04, compiled E. A. McCutchan (NNDC,BNL) on June 20, 2023.

2023Gr04: isotopes of interest were produced by projectile fragmentation of 172.3 MeV/nucleon ⁴⁸Ca primary beam on a Be target. Fragments were separated with the Advanced Rare Isotope Separator (ARIS) and implanted into an implantation detector made of yttrium orthosilicate at the focal point of the FRIB Decay Station initiator. γ rays were detected with the DEGAi array consisting of 11 HPGe detectors and 15 fast-timing LaBr₃ detectors. Measured E γ , I γ , $\gamma\gamma$ -coin, γ (t). Deduced isomer T_{1/2}. Comparisons with theoretical calculations.

³²Na Levels

E(level) [†]	$J^{\pi \ddagger}$	T _{1/2}	Comments		
0	(0 ⁻ ,3 ⁻)		J^{π} : (3 ⁻) proposed if 625 level is a spherical shape isomer, (0 ⁻ ,3 ⁻) if a deformed spin isomer (2023Gr04).		
			Configuration= $\pi 3/2^{+}[211] \otimes v 3/2^{-}[321]$ (2023Gr04).		
401	$(2^{-}, 4^{-})$		J^{π} : (4 ⁻) if 625 level is a spherical shape isomer, (2 ⁻) if a deformed spin isomer (2023Gr04).		
625	(0+,6-)	24 µs 2	? J ^π : (6 ⁻) proposed if 625 level is a spherical shape isomer, (0 ⁺) if a deformed spin isomer (2023Gr04).		
			$T_{1/2}$: from implant-(sum of 224 γ and 401 γ)(t) with exponential maximum likelihood fit (2023Gr04).		
			Configuration= $\pi d_{5/2} \otimes v f_{7/2}$ if spherical isomer, $\pi 3/2^+[211] \otimes v 3/2^+[202]$ if deformed spin isomer (2023Gr04).		

[†] From E γ data.

[‡] Proposed in 2023Gr04 based on theoretical calculations.

 $\gamma(^{32}Na)$

E_{γ}^{\dagger}	E_i (level)	\mathbf{J}_i^{π}	\mathbf{E}_{f}	\mathbf{J}_f^π
224	625	$(0^+, 6^-)$	401	$(2^-, 4^-)$
401	401	$(2^-, 4^-)$	0	$(0^-, 3^-)$

[†] From 2023Gr04.

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Level Scheme

