

$^{24}\text{Mg}(^{23}\text{Na},2\text{np}\gamma)$  2017Ar09

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh		NDS 190,1 (2023)	20-Jun-2023

Also  $^{25}\text{Mg}(^{23}\text{Na},3\text{np}\gamma)$  and  $^{26}\text{Mg}(^{23}\text{Na},4\text{np}\gamma)$ , since natural Mg target was used.

2017Ar09: E=62 MeV  $^{23}\text{Na}$  beam was produced from the FN tandem accelerator at the Institute for Nuclear Physics, University of Cologne. Target was 1 mg/cm<sup>2</sup> self-supporting natural magnesium.  $\gamma$  rays were detected with 12 HPGe detectors. Measured  $E_\gamma$ ,  $\gamma\gamma$ -coin, lifetime of the first  $2^+$  state by recoil-distance Doppler-shift (RDDS) method using the Cologne coincidence-plunger device. Recoiling nuclei came out of the target at 2.7% of the speed of light, and were stopped in 9.6 mg/cm<sup>2</sup> thick gold foil. Data were recorded at six target-to-stopper distances. Comparison of deduced B(E2) values with shell-model calculations with four interactions.

$^{44}\text{Ti}$  Levels

E(level) <sup>†</sup>	J <sup>π</sup> <sup>†</sup>	T <sub>1/2</sub> <sup>‡</sup>	Comments
0.0	0 <sup>+</sup>		
1083.1	2 <sup>+</sup>	1.86 ps 17	T <sub>1/2</sub> : measured $\tau=2.68$ ps 21(stat) 12(syst) (from text in 2017Ar09, rounded to 2.7 ps 2 in authors' table 2).
2454.3	4 <sup>+</sup>		

<sup>†</sup> From the Adopted Levels, with rounded-off values for energies.

<sup>‡</sup> From RDDS in 2017Ar09.

$\gamma(^{44}\text{Ti})$

E <sub><math>\gamma</math></sub> <sup>†</sup>	E <sub>i</sub> (level)	J <sub>i</sub> <sup>π</sup>	E <sub>f</sub>	J <sub>f</sub> <sup>π</sup>	Mult. <sup>†</sup>	Comments
1083.1	1083.1	2 <sup>+</sup>	0.0	0 <sup>+</sup>	E2	B(E2) <sub>↓</sub> =0.0205 +20-17 (2017Ar09)
1371.2	2454.3	4 <sup>+</sup>	1083.1	2 <sup>+</sup>	[E2]	

<sup>†</sup> From the Adopted Gammas, with rounded-off values for energies.

---

${}^{24}\text{Mg}({}^{23}\text{Na}, 2\text{np}\gamma)$  2017Ar09

Level Scheme

