

$^{23}\text{Na}(\mu^-, \gamma)$ 1996Jo21

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	M. S. Basunia [#] , A. Chakraborty ^{##}		NDS 171, 1 (2021)	1-Jun-2020

Others: 1994Go07, 1993Go09, 1993Go27 – same research group of 1996Jo21.

1996Jo21, 1994Go07: ^{23}Na target was a 5.0 cm diameter and 0.5 cm thick disk of pure metallic sodium packed in a thin-walled polyethylene container under a N_2 atmosphere. The target was placed 45° with the beam direction. Three plastic scintillators, one mounted on the downstream facing the collimator, two mounted on the upstream and downstream facing the target. Two n-type HPGe detectors placed 90° with respect to the beam direction surrounded by Compton suppressed by BGO and NaI crystals. Measured E_γ , yield per muon stop, γ - γ coin. Studied hyperfine dependence of exclusive μ^- capture on ^{23}Na .

 ^{23}Ne Levels

E(level) [†]	J^π	Comments
0.0		
1017.1 8		
1702.1 10	7/2 ⁺	J^π : From 1996Jo21.
1823.1 8		
2315.1 8		
3432.2 8		
3458.2 10	1/2 ⁺	J^π : From 1996Jo21. (1/2,3/2,5/2 ⁺) in Adopted Levels.

[†] From least-squares fit to γ -ray energies, assuming $\Delta E=1$ keV.

 $\gamma(^{23}\text{Ne})$

E_γ [†]	I_γ [‡]	$E_i(\text{level})$	J_i^π	E_f
492	0.12 4	2315.1		1823.1
1017	1.24 28	1017.1		0.0
1635	0.79 17	3458.2	1/2 ⁺	1823.1
1702	0.17 4	1702.1	7/2 ⁺	0.0
1823	1.43 30	1823.1		0.0
2315	0.13 4	2315.1		0.0
2415	0.17 4	3432.2		1017.1
2441	0.46 10	3458.2	1/2 ⁺	1017.1
3432	0.26 5	3432.2		0.0

[†] From 1996Jo21.

[‡] from 1996Jo21. Yield per 100 μ^- stop (not capture).

