

$^{12}\text{C}(^{32}\text{Na}, ^{31}\text{Na}\gamma)$ 2010Do05

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh		NDS 184, 29 (2022)	24-Jun-2022

2010Do05: $E \approx 240$ MeV/nucleon ^{32}Na beam was produced by projectile fragmentation of 345 MeV/nucleon ^{48}Ca primary beam on a 20 mm thick rotating ^9Be target at the Radioactive Ion beam Factory (RIBF) at RIKEN. Fragmentation products were selected and separated using the $B\rho$ - ΔE - $B\rho$ method using BigRIPS separator and incident on a 2.54 g/cm^2 carbon target. γ rays were detected with a NaI(Tl) based array (DALI2) with an efficiency of 15% at $E_\gamma = 1332.5$ keV and reaction products were detected and identified with a spectrometer (ZeroDegree). Measured E_γ , particle- γ -coin. Deduced levels.

 ^{31}Na Levels

<u>$E(\text{level})^\dagger$</u>	<u>J^π^\ddagger</u>	Comments
0	$3/2^+$	J^π : from Adopted Levels.
376 4	$(5/2^+)$	
1163 9	$(7/2^+)$	

† From E_γ data.

‡ From comparisons with shell-model predictions (2010Do05), unless otherwise noted.

 $\gamma(^{31}\text{Na})$

<u>E_γ</u>	<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>
376 4	376	$(5/2^+)$	0	$3/2^+$
787 8	1163	$(7/2^+)$	376	$(5/2^+)$

 $^{12}\text{C}(^{32}\text{Na}, ^{31}\text{Na}\gamma)$ 2010Do05Level Scheme