^{2}H(^{24}Na,p) 2021Ge09

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia, Anagha Chakraborty	NDS 205,1 (2025)	31-May-2025

$J^{\pi}(^{24m}Na)=1^{+}$.

Adapted/Edited the XUNDL dataset compiled by E.A. McCutchan (NNDC,BNL) January 4, 2022.

Beam=radioactive ion beam of ^{25m}Na from RESOLUT facility at FSU. E(^{25m}Na)=85.5 MeV. Target=Deuterated polyethylene, 517 μg/cm^2 thickness. Measured Ep, $\sigma(\theta)$ using a double-sided 300 μm thick Si detector in the angular range of θ_{lab}=161.6°−173.7°. Heavy reactants were measured with a downstream ionization chamber. DWBA and USDB shell model calculations.

First measurement of (d,p) reaction from the isomeric 1^{+} state in ^{24}Na.

^{25}Na Levels

E(level)[†]	J^{π}[‡]	L[#]	C^2S	Comments
1069	$1/2^{+}$	0	0.19 *10*	E(level): mirror level of 870 (^{25}Si).
3687	$3/2^{+}$	0	0.31 *15*	
3955	$(3/2^{+})$			J^{π}: from shell model calculations.
4289	$1/2^{+}$	0	0.44 *22*	E(level): mirror level of 3802 (^{25}Si).

† From 2021Ge09.
‡ As listed in 2021Ge09.
# Based on measured dσ/dΩ (≈3° to ≈8°) and DWBA.