^{142}Nd(α,^{3}He) 2008Ka01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 113, 715 (2012)	31-May-2011

E=51 MeV beam from the Yale tandem accelerator. The reaction products were analyzed with an Enge magnetic split-pole spectrometer. The ^{3}He ions were isolated by a gas-filled ionization chamber and a plastic scintillator at the focal plane of the Enge spectrometer and using E-ΔE technique. Angular distributions were measured at 6°, 11° and 20°. Energy resolution (FWHM)=70 keV. DWBA analysis.

Absolute cross sections have a typical uncertainty of ≈7%, whereas relative values are accurate to 5%.

Additional information 1.

^{143}Nd Levels

Σ[C^{2}S]: 1.12 *16* for $h_{9/2}$, 0.87 *12* for $i_{13/2}$.

Centroid energy (keV): 1493 *5* for $h_{9/2}$, 1627 *31* for $i_{13/2}$.

E(level)†	Jπ†	L	C^{2}S‡	Comments
1228.04 *8*	13/2$^+$	6	0.65	dσ/dΩ (mb/sr)=2.68 at 6°, 2.06 at 11°, 1.19 at 20°.
1407.08 *6*	9/2$^-$	5	0.83	dσ/dΩ (mb/sr)=1.11 at 6°, 0.76 at 11°, 0.54 at 20°.
1739.21 *8*	9/2$^-$	5	0.29	dσ/dΩ (mb/sr)=0.34 at 6°, 0.22 at 11°, 0.16 at 20°.
2805.3 *3*	13/2$^+$	6	0.22	dσ/dΩ (mb/sr)=0.26 at 20°.

† From Adopted Levels.

‡ Typical uncertainties are 10% based on relative cross sections and analysis using a variety of optical parameters listed in 2008Ka01.