

$^{151}\text{Eu}(t,p)$ 1976Bu03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 170, 1 (2020)	16-Aug-2020

$J^\pi(^{151}\text{Eu}, \text{g.s. target})=5/2^+$.

E=15 MeV; FWHM \approx 15 keV; magnetic spectrometer.

 ^{153}Eu Levels

E(level) [†]	J^π [‡]	L	S [#]	Comments
0	5/2 ⁺		≈ 0.5	$d\sigma/d\Omega \approx 2.5 \mu\text{b/sr}$ (30°).
173 2	5/2 ⁺	0	7.4	$d\sigma/d\Omega = 38 \mu\text{b/sr}$ (30°).
694 2	5/2 ⁺	0	16.4	$d\sigma/d\Omega = 80 \mu\text{b/sr}$ (30°).
706 2	5/2 ⁺	0	26.9	$d\sigma/d\Omega = 130 \mu\text{b/sr}$ (30°).
829 2		(2) [@]		$d\sigma/d\Omega = 8.5 \mu\text{b/sr}$ (40°).
880 2		(2) [@]		$d\sigma/d\Omega = 6.9 \mu\text{b/sr}$ (40°).
948 2				$d\sigma/d\Omega \approx 2.1 \mu\text{b/sr}$ (40°).
1020 2		(2) [@]		$d\sigma/d\Omega = 4.5 \mu\text{b/sr}$ (40°).
1150 2	5/2 ⁺	0	8.5	$d\sigma/d\Omega = 40 \mu\text{b/sr}$ (30°).
1226 2				$d\sigma/d\Omega = 4.0 \mu\text{b/sr}$ (40°).
1352 2				$d\sigma/d\Omega \leq 1.9 \mu\text{b/sr}$ (40°).
1395 2				$d\sigma/d\Omega \approx 2.5 \mu\text{b/sr}$ (40°).
1442 2	5/2 ⁺	0	5.4	$d\sigma/d\Omega = 25 \mu\text{b/sr}$ (30°).
1475 2	5/2 ⁺	0	34.9	$d\sigma/d\Omega = 160 \mu\text{b/sr}$ (30°).
1683 2		(2) [@]		$d\sigma/d\Omega = 4.6 \mu\text{b/sr}$ (40°).

[†] 1976Bu03 estimate uncertainties as 4 to 5 keV, but recalibration of spectrum and using updated and more precise value of S(2n), 2005Bu02 obtain $\Delta E(\text{level})=2$ keV.

[‡] From L value with $J^\pi=5/2^+$ for target. See ^{153}Eu Adopted Levels for band structure.

[#] Values are for L=0 states expressed as percentage of the total L=0 strength.

[@] Angular distributions are in reasonably good agreement with DWBA predictions for L=2, but 1976Bu03 indicated that, since multistep processes are likely involved in the reaction mechanism, they have not calculated spectroscopic factors.