

$^{206}\text{Pb}(d,\alpha)$ 1977Fr11

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	C. J. Chiara and F. G. Kondev		NDS 111,141 (2010)	1-Oct-2009

1977Fr11: ^{206}Pb target, $\approx 1 \text{ mg/cm}^2$; $E(d)=80 \text{ MeV}$; telescope with $500\text{-}\mu\text{m}$ Si surface barrier ΔE and $3000\text{-}\mu\text{m}$ Si(Li) E detectors for measuring α particles, followed by $1000\text{-}\mu\text{m}$ Si surface barrier detector to veto elastic scattering events; $\text{FWHM}=100 \text{ keV}$; measured $E(\alpha)$, $\sigma(\theta)$. Comparison with zero-range and exact-finite-range DWBA calculations.

 ^{204}Tl Levels

E(level) [†]	$J\pi^{\ddagger}$	L	Comments
0 [#]	2 ⁻	1	
420 [#]	4 ⁻	5	
1120	7 ⁺	6	L: a discrepancy in the DWBA fit near 13° may be explained by an L=8 contribution.
1830		6	
2310	12 ⁻	11	
2650	9 ⁺	8	
2880	9 ⁺	8	
3530		(5,6)	L: In 1977Fr11, Fig.4 suggests L=5 is the better fit, yet in Fig.8 the level is assigned L=6.

[†] From 1977Fr11, uncertainties not given.

[‡] From 1977Fr11, based on measured L values. The (d,α) reaction preferentially populates levels with $J=L+1$.

[#] Weakly populated, due to preferential population of high-spin states in (d,α) reactions.