

Coulomb excitation 1973Be44,1974Mc15

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 146, 387 (2017)	31-Aug-2017

1973Be44, 1974Mc15: $^{244}\text{Cm}(\alpha, \alpha')$, $E(\alpha)=17$ MeV.

^4He ions from the EN tandem Van de Graaf at Oak Ridge National Laboratory bombarded a 20-30 $\mu\text{g}/\text{cm}^2$ ^{244}Cm target. Elastic and inelastically scattered ions were observed at $\theta_{\text{lab}}=150^\circ$ using the Enge split-pole magnetic spectrometer equipped with a position-sensitive proportional detector at the focal plane with FWHM=15 keV. Determined E2 and E4 from the experimental excitation probabilities of the 0^+ , 2^+ , and 4^+ states in the g.s rotational band.

Deformation parameters were extracted by 1973Be44 from the E2 and M4 transition matrix elements. The authors calculated $\beta_2=0.284$ 11, $\beta_4=-0.048$ 45 for homogeneous distribution, $\beta_2=0.321$ 13, $\beta_4=-0.057$ 52 for a modified Fermi distribution.

 ^{244}Cm Levels

E(level) [†]	J^π	Comments
0.0	0^+	
42.957 [‡] 9	2^+	B(E2) \uparrow =14.58 19 (1973Be44) T _{1/2} (42.957 level)=126.1 ps 17 is calculated by the evaluator from B(E2)=14.58 19. The conversion coefficient of $\alpha(42.965\gamma)=1050$ is used in calculation. T _{1/2} =97 ps 5 was measured in 10.1-h ^{244}Am β decay by 1962Ch19.
142.340 [‡] 10	4^+	B(E4) \uparrow =0.00 +25-00 (1973Be44)
970 4	($2^+, 3^-$)	B(E3)=0.52 7, if $J^\pi=3^-$; B(E2)=0.082 14, if $J^\pi=2^+$ (1974Mc15).
1038 6	($2^+, 3^-$)	B(E3)=0.32 7, if $J^\pi=3^-$; B(E2)=0.054 14, if $J^\pi=2^+$ (1974Mc15).
1187 4	($2^+, 3^-$)	B(E2)=0.168 23, if $J^\pi=2^+$; B(E3)=0.96 12, if $J^\pi=3^-$ (1974Mc15).

[†] From 1974Mc15 except as noted.

[‡] From Adopted Levels.