

$^9\text{Be}(^{152}\text{Sm},\text{X}\gamma)$  2007Su07

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	J. Katakura	NDS 112, 495 (2011)	1-Jan-2010

**2007Su07:**  $E(^{152}\text{Sm})=615$  MeV/nucleon. The reaction fragments were fully ionized, and separated in-flight with the fragment separator FRS at GSI facility. Fully ionized  $^{125}\text{Ce}$  ions were stored in ESR storage-cooler ring and their revolution frequencies were measured with time-resolved Schottky mass spectrometry. Mass.

Measured energy and lifetime of the isomeric state.

XUNDL data set compiled by J. Roedigers and B. Singh (McMaster), April 25, 2007, is consulted.

 $^{125}\text{Ce}$  Levels

E(level)	$J^\pi$ <sup>†</sup>	Comments
0.0	(7/2 <sup>-</sup> )	$J^\pi$ : 2007Su07 adopt the assignment of 2002Pe15. The 5/2 <sup>+</sup> assignment proposed by 2004Sm02 is argued as problematic (2007Su07) in the light of their data.
103 12	(1/2 <sup>+</sup> )	%IT=100 $T_{1/2}$ : From Schottky frequency spectra over 2-s intervals gave $13E1\text{ s} +64-6$ for bare (fully-ionized) ions. This value corresponds to 3.4 s for the neutral ions using $\alpha=38$ for a 92-keV, E3 transition. $J^\pi$ : 2007Su07 suggest a 1/2 <sup>+</sup> spin-parity assignment to this isomeric state, based upon a comparison of the measured half-life with Weisskopf estimates which supports E3 multipolarity of decaying transition. E(level): The energy of the isomeric state was determined via difference in Schottky frequency of $^{125}\text{Ce}^{58+}$ ions stored in the ESR populating the ground and isomeric states. Energy calibration was performed with the frequency spectra of neighboring fully-ionized $^{41}\text{K}$ , $^{82}\text{Sr}$ , $^{69}\text{Ge}$ , and $^{56}\text{Fe}$ isotopes which have well-known masses. This isomer probably corresponds to the 92-keV, 1/2 <sup>+</sup> bandhead reported by 2002Pe15.

<sup>†</sup> From Adopted Levels.

 $\gamma(^{125}\text{Ce})$ 

$E_\gamma$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult.	Comments
(103 CA)	103	(1/2 <sup>+</sup> )	0.0	(7/2 <sup>-</sup> )	(E3)	$E_\gamma$ : 92 keV if the new isomer corresponds to 1/2 <sup>+</sup> bandhead proposed by 2002Pe15. Mult.: From comparison of measured half-life with Weisskopf estimates (2007Su07).

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Legend

Level Scheme

-----►  $\gamma$  Decay (Uncertain)

