

$^{248}\text{Md}$   $\alpha$  decay **1973Es01**

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

Parent:  $^{248}\text{Md}$ :  $E=0.0$ ;  $T_{1/2}=7\text{ s }3$ ;  $Q(\alpha)=8700\text{ SY}$ ;  $\% \alpha$  decay= $20\text{ }10$

$^{248}\text{Md}$ - $Q(\alpha)$ : From systematics in [2017Wa10](#) with  $\Delta Q(\alpha)=150$ .

$^{248}\text{Md}$ - $J^\pi, T_{1/2}$ : From Adopted Levels of  $^{248}\text{Md}$  ([2014Ma86](#)).

$^{248}\text{Md}$ - $\% \alpha$  decay: From Adopted Levels of  $^{248}\text{Md}$  ([2014Ma86](#)).

**2008Ne01**:  $^{248}\text{Md}$ , the alpha decay great-granddaughter of  $^{260}\text{Bh}$  produced in  $^{209}\text{Bi}(^{52}\text{Cr}, n)$  reaction with  $E(^{52}\text{Cr}^{12+})=257.0$  MeV beam provided by 88-Inch Cyclotron at LBNL. The nuclei were analyzed using Berkeley Gas-Filled Separator. A focal plane Si strip detector and a Si-strip detector array, with a resolution of FWHM=55 keV was used to detect the  $\alpha$  particles. No level scheme was suggested by the authors due to the absence of gamma rays. The branching for alpha decay=  $58\%20$  is in contrast to the currently adopted value of  $20\%10$  ([2014Ma86](#)), authors ([2008Ne01](#)) speculate that the discrepancy may be due to their low counting statistics.

**1973Es01**:  $^{243}\text{Md}$  produced from bombarding  $^{12}\text{C}$  beam from the Berkeley heavy ion accelerator onto a  $^{241}\text{Am}$  target.  $\alpha$ -particle were observed using  $\alpha$ -particle spectroscopy consisting of a series of seven Si-Au surface barrier detectors. Measured  $T_{1/2}$ ,  $E\alpha$   $I\alpha$ , and branching ratio.

 $^{244}\text{Es}$  Levels

$E(\text{level})^\dagger$	Comments
200 SY	$E(\text{level})$ : $\Delta E=150$ (sys).
240 SY	$E(\text{level})$ : $\Delta E=150$ (sys).

$^\dagger$  Level energies are calculated from  $Q\alpha(^{248}\text{Md})=8700\text{ }150$  (syst, [2017Wa10](#)) and the measured  $E\alpha$ 's.

 $\alpha$  radiations

$E\alpha^\dagger$	$E(\text{level})$	$I\alpha^\ddagger\&$	$\text{HF}^\@$	Comments
8130 <sup>#</sup>				
8260 <sup>#</sup>				
8460 <sup>#</sup>				$E\alpha$ : the 8460 $\alpha$ group from $^{248}\text{Md}$ decay was correlated with 9610 $\alpha$ group from $^{252}\text{Lr}$ decay. It is possible that this can be due to an isomer in $^{252}\text{Lr}$ .
8320 20	240	$\approx 75$	$\approx 16$	
8360 30	200	$\approx 25$	$\approx 65$	

$^\dagger$  Measured by [1973Es01](#), except where noted.

$^\ddagger$  Measured by [1973Es01](#).

<sup>#</sup> Alpha measured by [2008Ne01](#) that have not been placed in the level scheme.

$^\@$   $r_0(^{244}\text{Es})\approx 1.5\text{ AP}$ , estimated by the evaluator from the  $r_0$  systematics given in [1998Ak04](#).

$\&$  For absolute intensity per 100 decays, multiply by 0.20  $10$ .