

^{247}Md α decay (0.25 s) 2010An08

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja, E. A. Mccutchan		NDS 121, 695 (2014)	30-Sep-2013

Parent: ^{247}Md : $E=0.0+x$; $J^\pi=(1/2^-)$; $T_{1/2}=0.25$ s 4; $Q(\alpha)=8764$ 10; $\% \alpha$ decay=79 5

^{247}Md - $\% \alpha$: from 2010An08.

^{247}Md - $T_{1/2}$: from evaporation residue (ER)- $\alpha(t)$ in 2010An08. Other: 0.27 s 7 from ER-SF(t) in 2010An08.

^{247}Md activity produced in the $^{209}\text{Bi}(^{40}\text{Ar},2n)$ reaction with $E(^{40}\text{Ar})=187$ MeV. Evaporation residues (ER) separated with the velocity filter SHIP and implanted into a position sensitive Si strip detector. Measured $E\alpha$, $I\alpha$, ce , ER- α , ER- $\alpha\gamma$, $\alpha\gamma$ coincidences, ER- $\alpha(t)$, ER-SF(t), $E\gamma$, $I\gamma$ using an array of position sensitive Si detectors and an HPGe detector. Subset of results given in 2006An13.

 ^{243}Es Levels

E(level)	J^π	Comments
0.0+y	(3/2 ⁻)	J^π : proposed configuration = 3/2[521].
0.0+z	(1/2 ⁻)	J^π : proposed configuration = 1/2[521], HF=2.5 from (1/2 ⁻) parent. E(level): z-y<150 keV as non-observation of coincidences between K x-rays and the 8783 α suggests that energy difference between (1/2 ⁻) and (3/2 ⁻) states is lower than K shell binding energy of 146.5 keV.

 α radiations

$E\alpha$	E(level)	$I\alpha^\ddagger$	HF [†]	Comments
8660 20		17 5		$E\alpha$: tentative assignment based on measured $T_{1/2}\approx 0.28$ s, in agreement with ^{247}Md isomeric state $T_{1/2}$.
8783 20	0.0+z	83 5	2.5 5	

[†] $r_0(^{243}\text{Es})=1.487$ 20 is used to calculate the hindrance factor. This r_0 is the same value used for the 1.2-second ^{247}Md α decay.

[‡] For absolute intensity per 100 decays, multiply by 0.79 5.