
 $^{209}\text{Bi}(^{40}\text{Ar},3\text{n})$ (4.4 s) [2010An08](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 198,449 (2024)	31-Jul-2022

[2010An08](#): ^{246}Md was produced via $^{209}\text{Bi}(^{40}\text{Ar},3\text{n})$ at the velocity filter SHIP at GSI. $E(^{40}\text{Ar})=187$ and 198 MeV from the UNILAC bombarded a $0.450\text{ }\mu\text{g}/\text{cm}^2$ metallic ^{209}Bi target. Measurements were performed with an array of position-sensitive Si detectors and a Ge clover detector consisting of four Ge crystals.

Measured: $E\gamma$, $I\gamma$, ce , $E\alpha$, $\alpha\gamma$ coin, $\alpha(\text{ce})$ coin, $(\text{recoil})\alpha$, $(\text{recoil})\alpha\gamma$ coin, half-lives, α decay branching ratios.

A ^{246}Md isomer with 4.4 s half-life was identified in this work.

 ^{246}Md Levels

E(level)	$T_{1/2}$	Comments
0+x	0.9 s 2	$\%\alpha=100$; $\%\text{SF}=?$; $\%\epsilon+\%\beta^+=?$ $T_{1/2}$: From 2010An08 . Others: 0.75 s 18 (2006An13), 1.0 s 4 (1996Ni09), 1.0 s 4 (1994HoZW). Spontaneous fission (SF) was observed decaying with $T_{1/2}=1.0\text{ s}+10-3$. Part of this decay has been assigned to electron-capture delayed spontaneous fission ($\epsilon\text{-SF}$) (2010An08).
0+y	4.4 s 8	$\%\epsilon+\%\beta^+>77$; $\%\alpha<23$ (2010An08) $T_{1/2}$: From 2010An08 . $E\alpha=8178\text{ keV }10$, $E\gamma=252.0\text{-}$ and 279.0-keV were observed following α decay of $^{246}\text{Md}(4.4\text{ s})$ to ^{242}Es . Possible ϵ delayed SF decay ($\%\epsilon\text{SF}>10$) from $^{246}\text{Md}(4.4\text{ s})$ (2010An08). Other: 1996Ni09 .