

^{234}Bk α decay **2016Ka13**

<u>Type</u>	<u>Author</u>	<u>History Citation</u>	<u>Literature Cutoff Date</u>
Full Evaluation	C. Morse	NDS 197,259 (2024).	26-Sep-2023

Parent: ^{234}Bk : $E=0.0$; $T_{1/2}=19$ s $+6-4$; $Q(\alpha)=8.10\times 10^3$ 5; $\% \alpha$ decay=50 15

^{234}Bk - $T_{1/2}$: From **2016Ka13**.

^{234}Bk - $Q(\alpha)$: From **2021Wa16**.

^{234}Bk - $\% \alpha$ decay: Calculated based on 17 α decays observed out of 34 total decays of ^{234}Bk in **2016Ka13**.

2016Ka13: ^{230}Am obtained from ^{234}Bk α decay. ^{234}Bk was produced from $^{197}\text{Au}(^{40}\text{Ar},3n)$ reaction. ^{40}Ar beam, $E=189.5$ MeV, was delivered by the RIKEN heavy ion linear accelerator. Recoil products were separated by RIKEN's gas-filled recoil ion separator (GARIS), guided to a gas-jet chamber, stopped in helium gas and attached to KCL aerosols, transported to a rotating wheel system for α /SF spectroscopy using seven pairs of Si PIN-diode detectors. Identified six fission events from saturated pulse height of $E \sim 20$ MeV and deduce ^{230}Am half-life.

The authors of **2016Ka13** do not place the observed α decays in a level scheme. The Q-value of 8.1 MeV from the Atomic Mass Evaluation would suggest that the 7960 keV α goes to the ground state of ^{230}Am , but given the sparse nature of the data, the evaluator has chosen not to make this assignment.

 ^{230}Am Levels

<u>E(level)</u>	<u>$T_{1/2}$</u>	<u>Comments</u>
0.0	35 s $+12-7$	$T_{1/2}$: From Adopted Levels.

 α radiations

<u>$E\alpha$</u>	<u>E(level)</u>
7620 20	
7760 20	
7860 20	
7960 20	