

²⁴⁰Es α decay 2017Ko02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Shaofei Zhu	NDS 182, 2 (2022).	1-Apr-2022

Parent: ²⁴⁰Es: E=0; J ^{π} =(1⁺); T_{1/2}=6 s 2; Q(α)=8.26×10³ 6; % α decay=70 10

²⁴⁰Es-T_{1/2}: From 2017Ko02; other: 8 s +6-2 (2020Kh08) and 4.7 s +38-14 (2020Po07).

²⁴⁰Es-E,J ^{π} : From Adopted Levels of ²⁴⁰Es in the ENSDF database.

²⁴⁰Es-Q(α): From 2021Wa16.

²⁴⁰Es-% α decay: From 2017Ko02.

2017Ko02: ²⁴⁰Es was produced in the ²⁰⁹Bi(³⁴S,3n) reaction with a beam at 186 MeV; evaporation residues (ER) were separated in-flight by the RITU gas-filled separator and implanted into two DSSD silicon detectors at the focal plane, surrounded by three Clover-type HPGe detectors and a planer HPGe detector. Measured E α , E γ , ER- α - α , ER-fission, ER- α -fission and ER- α - γ time and position correlations.

²³⁶Bk Levels

E(level)	J ^{π}	T _{1/2}	Comments
0.0	(4 ⁺ ,6 ⁻)	22 s +13-6	T _{1/2} : from ER-8090 α -fission(t) in 2017Ko02.
102 43	(1)		

† From Adopted Levels.

α radiations

E α	E(level)	I α ^{†#}	HF [‡]	Comments
8090 30	102	≈69	≈2	E α : from 2017Ko02;
8190 30	0.0	≈31	≈9.5	E α : from 2017Ko02; others: 8120 77, possible doublets (2020Po07); 8050 30, final state not determined with only one decay event observed (2020Kh08);

† From the reported 60 ER-8090 α events and 27 ER-8190 α events correlated within a 30 s ER- α correlation time window in 2017Ko02.

‡ r₀(²³⁶Bk)=1.5027 17, from r₀(²³⁶Cm) in 2020Si16.

For absolute intensity per 100 decays, multiply by 0.70 10.

γ (²³⁶Bk)

E γ [†]	E _i (level)	Comments
^x 67 3		
^x 89 3		
^x 112 [‡] 3		
^x 125 [‡] 3		E γ : relative intensities between the 125 γ and 112 γ suggesting the 125 γ is not a pure K x-ray line (2017Ko02).

† From 2017Ko02.

‡ Energy close to the Bk K x-ray line.

^x γ ray not placed in level scheme.