^{206}Ac α decay (22 ms) 2014Zh03,1998Es02,1998LuZV

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 196,342 (2024)	1-Sep-2023

Parent: ^{206}Ac: E=0.0; J^π=(3$^+$); $T_{1/2}$=22 ms *+9−5*; Q(α)=7960 *60*; %α decay≈100

^{206}Ac-$T_{1/2}$: From 1998Es02. Other: 41 ms *+56−15* in 2014Zh03.

2014Zh03: ^{169}Tm(^{40}Ca,3n) reaction; Target=400 μg/cm^2 thick covered with a layer of 10 μg/cm^2 carbon; Beam: 196 MeV; Detectors: SHANS recoil separator (HIRFL,Lanzhou), position sensitive silicon detector; Measured: recoil-α_1-α_2-α_3 coin, Eα, $T_{1/2}$. The assignment to the J^π=(3$^+$) state in ^{206}Ac is based on Eα_1 (^{206}Ac) − Eα_2 (^{202}Fr,3$^+$) − Eα_3 (^{198}At,3$^+$) correlations.

1998Es02: ^{175}Lu(^{36}Ar,5n) reaction; Target: 320 μg/cm^2; Beam: 199 MeV; Detectors: Gas-filled recoil separator (RITU, Jyvaskyla), position sensitive PIPS detector; Measured: recoil-α_1-α_2-α_3 coin, Eα, $T_{1/2}$. The assignment to the J^π=(3$^+$) state in ^{206}Ac is based on Eα_1 (^{206}Ac) − Eα_2 (^{202}Fr,3$^+$) − Eα_3 (^{198}At,3$^+$) correlations.

1998LuZV: Beam: 186-MeV ^{35}Cl; Target: 307 μg/cm^2 hafnium (64.6% ^{176}Hf, 21.7% ^{177}Hf, 6.8% ^{178}Hf, 2.2% ^{179}Hf and 4.7% ^{180}Hf); Detectors: recoil mass separator at JAERI, position sensitive silicon detector. Measured: recoil-α_1-α_2-α_3 coin, Eα, $T_{1/2}$. The assignment to the J^π=(3$^+$) state in ^{206}Ac is based on Eα_1 (^{206}Ac) − Eα_2 (^{202}Fr,3$^+$) − Eα_3 (^{198}At,3$^+$) correlations.

^{202}Fr Levels

E(level)†	J^π†	$T_{1/2}$†
0.0	(3$^+$)	372 ms *12*

† From Adopted Levels.

α radiations

Eα	E(level)	Iα‡	HF†	Comments
7804 *21*	0.0	100	≈2.2	Eα: Average 7817 keV *30* (2014Zh03) and 7790 keV *30* (1998Es02). Other: 7894 keV *50* (1998LuZV).

† Using r_0(^{202}Fr)=1.532 *4*, weighted average of 1.525 *14* (^{200}Rn) and 1.529 *4* (^{202}Rn) from 2020Si16. No information on r_0(^{202}Ra) and r_0(^{204}Ra) is available in 2020Si16.

‡ For absolute intensity per 100 decays, multiply by ≈1.0.