^{213}Th α decay 1968Va18,1980Ve01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. Chen # and F. G. Kondev	NDS 126, 373 (2015)	30-Sep-2013

Parent: ^{213}Th: E=0.0; J^π=(5/2$^-$); $T_{1/2}$=144 ms *21*; Q(α)=7837 *7*; %α decay≈100.0

^{213}Th-Q(α): From 2012Wa38.

1968Va18: ^{213}Th activities were produced by bombarding 166 MeV ^{16}O beam from the hilac accelerator on a ^{206}Pb target. α particles were detected by a surface barrier detector. Measured Eα, Iα, α(t). Deduced $T_{1/2}$ of ^{213}Th.

1980Ve01: ^{213}Th activities were produced by the ^{40}Ar+^{177}Hf reaction with E(^{40}Ar)=170-200 MeV reaction products were separated by the velocity filter SHIP at the GSI heavy ion accelerator UNILAC. α particles were detected by a surface-barrier silicon detector (FWHM=20 keV). Measured Eα, α(t). Deduced $T_{1/2}$ of ^{213}Th.

^{209}Ra Levels

E(level)	J^π	$T_{1/2}$	Comments
0.0	5/2$^-$	4.8 s *2*	J^π,$T_{1/2}$: from Adopted Levels.

α radiations

Eα	E(level)	Iα‡	HF†	Comments
7690 *7*	0.0	100	≈1.6	Eα: weighted average of 7690 *10* (1968Va18) and 7689 *10* (1980Ve01). Note, that 1991Ry01 reduced the reported Eα′s in 1968Va18 by −0.5 keV, but such a correction was not applied in the present work, given the large ΔEα. HF: 1.62 *25*, if %α=100.

† $r_0(^{209}Ra)$=1.497 *14*, weighted average of $r_0(^{208}Ra)$=1.510 *27* and $r_0(^{210}Ra)$=1.492 *16*, both deduced from HF=1.

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