^{209}Rn α decay 1971Go35

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 166, 1 (2020)	20-Apr-2020

Parent: ^{209}Rn: E=0.0; $J^\pi=5/2^-$; $T_{1/2}$=28.8 min *10*; Q(α)=6155.4 *20*; %α decay=17 *2*

^{209}Rn-1971Go35: Mass separated source was produced in bombardment of a metallic thorium target with 660 MeV proton beams. Detectors: magnetic spectrograph with energy resolution of 4-6 keV; Measured: Eα, Iα, $T_{1/2}$, and %α. Others: 1955Mo68, 1955Mo69, 1971Jo19 and 1993Wa04.

^{209}Rn-J^π, $T_{1/2}$, and %α from 2015Ch30. Q(α) from 2017Wa10. Note, that %α= 9% *2* in 2017Lo13, but the authors do not exclude a ^{209}Rn diffusion out of the detector material that could result in lower %α.

^{205}Po Levels

E(level)[†]	J^π[‡]	$T_{1/2}$[‡]	Comments
0.0[#]	$5/2^-$	1.74 h *8*	
144[@] *4*	$1/2^-$	310 ns *60*	$T_{1/2}$: From $\alpha\gamma$(t) in 1971Jo19.
155[&] *4*	$3/2^-$		
386 *4*	$(3/2)^-$		

† From the measured Eα.
‡ From Adopted Levels, unless otherwise stated.
# configuration=$\nu(f^{-1}_{5/2})$.
@ configuration=$\nu(p^{-1}_{1/2})$.
& configuration=$\nu(p^{-1}_{3/2})$.

α radiations

Eα[‡]	E(level)	Iα[‡#]	HF[†]	Comments
5660 *3*	386	0.0239 *20*	86 *14*	
5887 *3*	155	0.219 *20*	118 *19*	
5898 *3*	144	0.139 *20*	209 *41*	
6039 *3*	0.0	99.62 *3*	1.30 *17*	Eα: Others: 6037 keV *3* (1955Mo69) and 6036 keV *3* (1993Wa04).

† Using $r_0(^{205}Po)$=1.467 *10*, unweighted average value deduced from values for neighboring even-even ^{204}Po (r_0=1.476 *5*) and ^{206}Po (r_0=1.4569 *22*) nuclei and HF_α=1.
‡ From 1971Go35.
# For absolute intensity per 100 decays, multiply by 0.17 *2*.