^{196}Rn α decay 2001Uu01,1997Pu01,1995Mo14

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 113, 1871 (2012)	15-Jun-2012

Parent: ^{196}Rn: E=0; $J^\pi=0^+$; $T_{1/2}$=4.4 ms *+13−9*; Q(α)=7617 *9*; %α decay=99.8 *2*

^{196}Rn-$T_{1/2}$: From 2001Uu01 and 2001Ke06. others: 3 ms *+7−2* (1997Pu01); 5 ms (1995Mo01).

^{196}Rn-%α decay: %α(^{196}Rn)=99.8 *2*, based on the partial β half-life of 2.5 s calculated by 1997Mo25; the latter implies %(ε+β^+)≈0.18 *+5−4* if $T_{1/2}$(^{196}Rn)=4.4 ms *+13−9* (2001Ke06, 2001Uu01).

^{196}Rn-%α decay: Additional information 1.

Production of ^{196}Rn parent: ^{166}Er(^{36}Ar,6n), E=208 MeV (1997Pu01), E=200 MeV (1995Mo14); ^{142}Nd(^{56}Fe,^{6}n) (2001Uu01, 2001Ke06).

1995Mo14: production of ^{196}Rn is presumed by authors because they observe one α which is followed by another α whose E and time delay match those expected for ^{192}Po α decay. The observed time difference between evaporation residues in the ^{166}Er(^{36}Ar,xn) reaction and initial α detection was 5 ms.

^{192}Po Levels

E(level)	J^π
0	0^+

α radiations

Eα	E(level)	Iα[‡]	HF[†]	Comments
7462 *8*	0	100	1.0	Eα: weighted average of 7461 *9* (2001Ke06, 2001Uu01), 7492 *30* (1997Pu01) and 7428 *35* (1995Mo14). This Eα corresponds to Q(α)=7617 *8*; Q(α)=7617 *9* (2011AuZZ). Iα: only one α group has been observed. Iα to any excited states in ^{192}Po is assumed to be negligible.

[†] r_0(^{192}Po)=1.585 *16* from HF=1 for g.s. α group, assuming $T_{1/2}$(^{196}Rn)=4.4 ms *+13−9* (2001Uu01), Q(α)(^{196}Rn)=7617 *9* and %α(^{196}Rn)=99.8 *2*. (The value expected based on extrapolation from r_0 in 1998Ak04 for higher-mass Po isotopes is 1.565 *10*).

[‡] For absolute intensity per 100 decays, multiply by 0.998 *2*.