^{256}**Rf** α **decay** **1985He06,1997He29,2010St14**

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	A. M. Mattera, S. Zhu, A. B. Hayes, E. A. Mccutchan	NDS 172, 543 (2021)	1-Jan-2021

Parent: ^{256}Rf: E=0.0; J$^{\pi}$=0^{+}; $T_{1/2}$=6.67 ms *10*; Q(α)=8926 *15*; %α decay=0.32 *17*

^{256}Rf-Q(α): from 2017Wa10 (calculated based on the values in 1985He06,1997He29, 2010St14).

^{256}Rf-$T_{1/2}$: from 2017Si08, where value is the weighted average of 6.9 ms *2* (2013Ri07, 2012Gr12 from time difference between recoil and fission events), 6.9 ms *4* (2011Ro20, from time distribution of fission events in SF decay of 783 events), 6.70 ms *9* (2008Dr05), 6.2 ms *2* (1997He29), 6.7 ms *2* (1984Og02). Other measurements: 5 ms (from SF activity, 1975Og01); 7.4 ms *+9−7* (from SF activity, 1985He06); 10 ms *+47−4* (from α activity, 1985He06); 6.3 ms *+27−14* (from SF activity following ^{260}Sg α decay, 1985Mu11); 9 ms *2* (from SF activity, 1985So03).

^{256}Rf-%α decay: from 2017Si08 where value is derived from 1997He29. Authors′ earlier measurement: 2.2 % *+7.3−1.8* (1985He06).

^{252}No Levels

E(level)	J$^{\pi}$
0.0	0^{+}

α radiations

Eα	E(level)	HF†	Comments
8790 *8*	0.0	1.0	Eα: weighted average of 8812 keV *23* (1985He06), 8790 keV *20* (1997He29) and 8786 keV *10* (2010St14). Iα: only one α group has been observed. Expected α transitions to excited states can be estimated from systematics of hindrance factors (see 1998Ak04). α decays of the neighboring nuclei suggest that HF(to 2^{+} state in ^{252}No)=4.0 *10* and the 2^{+} state energy is 40±5 keV. By using these estimates, relative intensities are calculated as Iα(to g.s.)/Iα(2^{+} state)=84 *4*/16 *4*. If any α transitions to higher energy levels can be neglected, these relative Iα′s correspond to Iα′s per 100 α decays.

† Calculations by requiring HF=1.0 and using Iα(8790α)=84 *4* per 100 α decays yield r_0(^{252}No)=1.460 *7*.