

$^{212}\text{Th}$   $\alpha$  decay

<u>Type</u>	<u>Author</u>	<u>History Citation</u>	<u>Literature Cutoff Date</u>
Full Evaluation	M. J. Martin	NDS 108,1583 (2007)	1-Jun-2007

Parent:  $^{212}\text{Th}$ :  $E=0.0$ ;  $J^\pi=0^+$ ;  $T_{1/2}=30$  ms  $+20-10$ ;  $Q(\alpha)=7952$  10;  $\% \alpha$  decay=99.7 3

$T_{1/2}(^{212}\text{Th})=30$  ms  $+20-10$ , measured by 1980Ve01, is adopted In 1992Ar05 and used In calculations here.

The  $\varepsilon+\beta^+$  branching was estimated by 1992Ar05 As  $\approx 0.3\%$  from gross  $\beta$  decay calculations of 1973Ta30. The partial half-life for  $^{212}\text{Th}$   $\beta^-$  decay was calculated by 1997Mo25 As 15.05 s, which gives  $\% \beta^+=0.20$ . The  $r_0$  parameter, calculated by using  $\% \alpha=99.7$  3, fits the local  $r_0$  systematics.

 $^{208}\text{Ra}$  Levels

<u>E(level)</u>	<u><math>J^\pi</math></u>
0.0	$0^+$

 $\alpha$  radiations

<u><math>E\alpha</math></u>	<u>E(level)</u>	<u>HF<math>^\dagger</math></u>	<u>Comments</u>
7802 10	0.0	1.0	$E\alpha$ : measured by 1980Ve01. $I\alpha$ : only one $\alpha$ group has been observed. The $2^+$ state has not been observed. Its energy is estimated to Be $\approx 500$ keV by extrapolation from $2^+$ level energies In heavier radium isotopes In accordance with the trend observed for radon isotopes. The intensity of the 7310-keV unobserved $\alpha$ is estimated As $<2.3$ per 100 $\alpha$ decays by assuming its hindrance factor to Be greater than 1. $I\alpha(7802\alpha)=98.8$ 12 is used In computation.

$^\dagger$   $r_0(^{208}\text{Ra})=1.510$  27 is calculated from  $\text{Hf}(7802\alpha)=1.0$ .