

**$^{114}\text{Ba}$   $\alpha$  decay (0.43 s)    2002Ma19,1997Ja12**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	G. Gürdal and F. G. Kondev	NDS 113, 1315 (2012)		1-Aug-2011

Parent:  $^{114}\text{Ba}$ :  $E=0$ ;  $J^\pi=0^+$ ;  $T_{1/2}=0.43\text{ s} +30-15$ ;  $Q(\alpha)=3534\text{ 42}$ ;  $\% \alpha$  decay= $0.9\text{ 3}$

$^{114}\text{Ba}$ - $Q(\alpha)$ : From 2011AuZZ and 2003Au03 based on  $E\alpha=3410\text{ 40}$  (2002Ma19).

$^{114}\text{Ba}$ - $T_{1/2}$ : From the measured grow-in and decay patterns in 1997Ja12.

$^{114}\text{Ba}$ - $\% \alpha$  decay:  $\% \alpha=0.9\text{ 3}$  in 2002Ma19, deduced by comparing the observed 39  $\alpha$  events with the 980  $\beta\text{p}$  events, detected simultaneously in  $\Delta\text{E}$ - $\text{E}$  coincidence, and  $\% \beta\text{p}=17\text{ 2}$  from 1997Gu22.

2002Ma19: Parent  $^{114}\text{Ba}$  was produced through the  $^{58}\text{Ni}(^{58}\text{Ni},2\text{n})$  reaction at the GSI online mass separator.  $^{58}\text{Ni}$  beam energy was varied between 222 MeV and 248 MeV. Highly enriched  $^{58}\text{Ni}$  target thicknesses ranged from 2.0  $\text{mg}/\text{cm}^2$  to 3.8  $\text{mg}/\text{cm}^2$ .  $\alpha$  particles were detected using  $\text{E}$ - $\Delta\text{E}$  telescopes consisting of two silicon surface-barrier detectors. Measured:  $E\alpha$ ,  $\% \alpha$ ,  $T_{1/2}$ .

Others: 2005Ja03, 2003Mb01, 2003Ro08, 2001Ro35, 1995Gu10, 1995Gu01, 1981Sc17.

 $^{110}\text{Xe}$  Levels

<u>E(level)</u>	<u><math>J^\pi</math></u>	<u><math>T_{1/2}</math></u>	<u>Comments</u>
0	$0^+$	93 ms 3	$\% \alpha=64\text{ 35}$ (2002Ma19), deduced by assuming $\% \alpha(^{114}\text{Ba})=0.9\text{ 3}$ and $\% \alpha(^{106}\text{Te})=100$ . $E\alpha=3737\text{ 30}$ (1981Sc17) and $3730\text{ 30}$ (2002Ma19). $T_{1/2}$ : From Adopted Levels.

 $\alpha$  radiations

<u><math>E\alpha</math></u>	<u>E(level)</u>	<u><math>I\alpha^\ddagger</math></u>	<u>HF<math>^\dagger</math></u>	<u>Comments</u>
3410 40	0	100	1	$E\alpha$ : From 2002Ma19, deduced using anti-coincidences between $\Delta\text{E}$ and $\text{E}$ detectors.

$^\dagger$   $r_0(^{110}\text{Xe})=1.756\text{ 84}$  was deduced when  $\text{HF}(3410\alpha)=1$ .

$^\ddagger$  For absolute intensity per 100 decays, multiply by 0.009 3.