^{154}Er α decay

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, A. A. Sonzogni	NDS 114, 435 (2013)	1-Apr-2013

Parent: ^{154}Er: E=0.0; $J^\pi=0^+$; $T_{1/2}$=3.73 min *9*; Q(α)=4280 *3*; %α decay=0.47 *13*

$T_{1/2}(^{154}Er)$=3.73 min *9* is adopted in 1993He11 as a weighted average of the measured half-lives: 3.6 min *3* (1982Ba75), 3.6 min *2* (1982Bo04), 4.0 min *4* (1982To14) and 3.75 min *12* (1974PeZS). $T_{1/2}$=3.7 min *3* is used in calculations here (see a comment on the r_0 value).

%α=0.47 *13*, determined by 1974To07 and adopted in 1993He11, is used in calculations.

^{150}Dy Levels

E(level)	J^π
0.0	0^+

α radiations

Eα	E(level)	Iα[†#]	HF[‡]	Comments
4168 *3*	0.0	100	1.0	Eα: recommended by 1991Ry01. Iα: only one α group was observed. An upper limit of 2.0×10^{-4} per 100 α decays is calculated for an unobserved 3385-keV α to the 2^+ state at 803.5 keV in ^{150}Dy by requiring Hf(3385α)>1.

† α intensity per 100 α decays.

‡ $r_0(^{150}Dy)$=1.551 *24* is calculated from Hf(4168α)=1.0. From the analogy to $r_0(^{150}Er; N=82)$, $r_0(^{152}Er; N=84)$ and $r_0(^{146}Gd; N=82)$, $r_0(^{148}Gd; N=84)$ nuclei, $r_0(^{150}Dy; N=84)$ would be expected to be larger than $r_0(^{148}Dy; N=82)$. The calculated $r_0(^{150}Dy)$=1.551 *24* and $r_0(^{148}Dy)$=1.567 *4* may be considered consistent with the trend when their uncertainties are taken into account.

For absolute intensity per 100 decays, multiply by 0.0047 *13*.