

^{152}Dy α decay

<u>Type</u>	<u>Author</u>	<u>History Citation</u>	<u>Literature Cutoff Date</u>
Full Evaluation	N. Nica	NDS 117, 1 (2014)	1-Oct-2013

Parent: ^{152}Dy : $E=0.0$; $J^\pi=0^+$; $T_{1/2}=2.38$ h 2; $Q(\alpha)=3726$ 4; $\% \alpha$ decay= 0.100 7
 $T_{1/2}(^{152}\text{Dy})=2.38$ h 2 is adopted in [1996Ar09](#) as the weighted average of $T_{1/2}=2.41$ h 5 and 2.37 h 2, measured by [1962Si14](#) and [1965Ma51](#), respectively. The adopted half-life of 2.38 h 2 is used in calculations here.

$\% \alpha=0.100$ 7 is adopted by [1996Ar09](#), obtained from the α branching determined by [1974To07](#) as 0.108% 11 and 0.094% 9 from $I(256.9\gamma \text{ in } \varepsilon \text{ decay})/I\alpha$ and $I(\text{K x ray})/I\alpha$, respectively.

$Q(\alpha)(^{152}\text{Dy})=3726$ 4 is recommended by [2012Wa38](#).

 ^{148}Gd Levels

<u>E(level)</u>	<u>J^π</u>
0.0	0^+

 α radiations

<u>$E\alpha$</u>	<u>E(level)</u>	<u>$I\alpha^\dagger\#$</u>	<u>HF^\ddagger</u>	<u>Comments</u>
3628 4	0.0	100	1.000	$E\alpha$: recommended by 1991Ry01 . $I\alpha$: only one α group was observed. An upper limit of 1.6×10^{-5} per 100 α decays is calculated for intensity of an unobserved 2864-keV α to the 2^+ state at 784.43 keV in ^{148}Gd by requiring $\text{Hf}(2864\alpha) > 1$.

† α intensity per 100 α decays.

‡ $r_0(^{148}\text{Gd})=1.581$ 5 is calculated from $\text{Hf}(3628\alpha)=1.0$.

$\#$ For absolute intensity per 100 decays, multiply by 0.00100 7.