

^{173}Os α decay [1995Hi02,1971Bo06](#)

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109, 2033 (2008)	1-Jun-2022

Parent: ^{173}Os : $E=0.0$; $J^\pi=(5/2^-)$; $T_{1/2}=22.4$ s 9; $Q(\alpha)=5055$ 6; $\% \alpha$ decay=0.021 9

^{173}Os - $\% \alpha$ decay: $\% \alpha=0.021$ +13-5 ([1971Bo06](#)). Other: 0.4 2 ([1995Hi02](#)); datum rejected by evaluator because $HF>1$ requires $\% \alpha < 0.1$.

[1995Hi02](#): sources from $^{140}\text{Ce}(^{36}\text{Ar},3n)$, $E=178, 185$ MeV; measured $E\alpha$, $I\alpha$, $E\gamma$, $\alpha(t)$, $\gamma(t)$, $\% \alpha(^{173}\text{Os})$.

[1971Bo06](#): Sources from $^{164}\text{Er}(^{16}\text{O},7n)$ ($E(^{16}\text{O})=110$ -160 MeV, helium-jet transport); erbium oxide targets enriched to 62.7% in ^{164}Er ; measured $E\alpha$, $I\alpha$ (silicon detectors), excitation functions.

Parent $T_{1/2}=22.4$ s 9 ([1995Hi02](#)); other: 16 s 5 ([1971Bo06](#)).

 ^{169}W Levels

<u>E(level)</u>	<u>$J^\pi^\dagger$</u>	<u>$T_{1/2}^\dagger$</u>
0.0	(5/2 ⁻)	74 s 6

[†] From Adopted Levels.

 α radiations

<u>$E\alpha$</u>	<u>E(level)</u>	<u>$I\alpha^\ddagger$</u>	<u>$HF^\dagger$</u>	<u>Comments</u>
4939 6	0.0	100	5.1 22	$E\alpha$: weighted average of 4940 10 (1971Bo06) and 4938 7 (1995Hi02). $E\alpha=4939$ 6 implies $Q(\alpha)=5056$ 6, assuming a g.s. to g.s. transition, cf. 5055 6 from 2003Au03 .

[†] If $r_0=1.545$ 15 (based on r_0 for ^{170}W and ^{168}W in [1998Ak04](#)), $Q(\alpha)=5056$ 6 (from adopted $E\alpha$) and $\% \alpha(^{173}\text{Os})=0.021$ 9 ([1971Bo06](#)).

[‡] For absolute intensity per 100 decays, multiply by 0.00021 9.