

¹⁷²Os α decay 2004GoZZ,1995Hi02,1971Bo06

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 111, 1807 (2010)	15-Jun-2010

Parent: ¹⁷²Os: E=0.0; J π =0⁺; T_{1/2}=19.2 s 9; Q(α)=5227 7; % α decay=1.4 3

¹⁷²Os-% α decay: from 2004GoZZ. 1995Hi02 deduce % α =1.1 2, but several assumptions are made for the level scheme (considered incomplete, as yet) of ¹⁷²Re from ¹⁷²Os ϵ decay. Other data: % α =0.2 (1971Bo06) is inconsistent with both values and implies r₀=1.48 4 In disagreement with r₀ systematics; datum is rejected by the evaluator.

Other: 2009Og03 (¹⁷²Os produced In ²⁰Ne + ¹⁵⁶Dy fusion reaction; used for detector calibration).

2004GoZZ: ¹⁷²Os source from ¹⁷⁶Pt α decay; measured E α , branching, T_{1/2}(¹⁷²OS).

T_{1/2}(¹⁷²Os)=19.2 s 9 (1995Hi02). others: 20 s 2 (2004GoZZ) and 20 s 2 (1971Bo06), both from α (t).

Q(α)(¹⁷²Os)=5227 7 is listed in 2003Au03 and 2009AuZZ.

¹⁶⁸W Levels

E(level)	J π
0.0	0 ⁺

α radiations

E α	E(level)	Hf \dagger	Comments
5106 4	0.0	1.0	E α : reported α energies are 5105 10 (1971Bo06), 5100 7 (1995Hi02), 5106 10 (1996Pa01), 5109 5 (2004GoZZ); their weighted average is 5106 4, which implies Q(α)=5228 4. I α : only one α group was observed. Upper limit for I α of an unobserved 4905-keV α to the 2 ⁺ state at 199.3 keV is calculated to be 9.4% of all α decay by requiring that its hindrance factor be greater than 1. I α (5105 α)=95 5 per 100 α decays is recommended here, and this I α is used in the calculation of the r ₀ parameter.

\dagger r₀(¹⁶⁸W)=1.56 2 is calculated from Hf(5106 α)=1.0.