

^{76}As ε decay (26.254 h) 2014Do08,1957Sc23

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Jun Chen and Ameenah R. Farhan		NDS 194,3 (2024)	8-Jan-2024

Parent: ^{76}As : $E=0.0$; $J^\pi=2^-$; $T_{1/2}=26.254$ h *11*; $Q(\varepsilon)=921.5$ 9; $\% \varepsilon$ decay ≈ 0.027

^{76}As - $J^\pi, T_{1/2}$: From ^{76}As Adopted Levels.

^{76}As - $Q(\varepsilon)$: From 2021Wa16.

^{76}As - $\% \varepsilon$ decay: $\% \varepsilon \approx 0.027$ (2014Do08, preliminary value).

2014Do08: measured $K\alpha$ -x rays of Ge and γ rays from the β^- decay of ^{76}As , and (x ray) γ -coincidences. Preliminary result gives 0.027% decay through ε branch to the first excited state. No evidence was found for ε decay to the g.s. of ^{76}Ge .

Other searches for ε decay: $\% \varepsilon(\text{K}) < 0.02$ from K x-ray spectra (1957Sc23). 1963Ba30, 1954Mu22, 1951Mi16, 1949Ma03, 1948Wu02, and 1947Ba08 searched for positron decays from ^{76}As , but none detected and upper limits were suggested. From $Q(\varepsilon)=921.5$ keV (2021Wa16), positron emission is forbidden.

 ^{76}Ge Levels

E(level)	J^π
0	0^+
563	2^+

 ε radiations

E(decay)	E(level)	I_ε^\dagger	Log <i>ft</i>	Comments
(358.5 17)	563	≈ 0.027	≈ 10.9	$\varepsilon\text{K}=0.8772$; $\varepsilon\text{L}=0.10331$ 2; $\varepsilon\text{M}+=0.019476$ 3

† Absolute intensity per 100 decays.

 $\gamma(^{76}\text{Ge})$

E_γ	I_γ^\dagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π
563	≈ 0.027	563	2^+	0	0^+

† Absolute intensity per 100 decays.

 ^{76}As ε decay (26.254 h) 2014Do08,1957Sc23Decay SchemeIntensities: I_γ per 100 parent decays