

^{40}K β^- decay (1.248×10^9 y) [1999BeZQ,1999BeZS](#)

Type	Author	History Citation	Literature Cutoff Date
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Parent: ^{40}K : $E=0$; $J^\pi=4^-$; $T_{1/2}=1.248 \times 10^9$ y 3; $Q(\beta^-)=1310.89$ 6; $\% \beta^-$ decay=89.28 11

^{40}K - $J^\pi, T_{1/2}$: From Adopted Levels of ^{40}K .

^{40}K - $Q(\beta^-)$: From [2012Wa38](#).

^{40}K - $\% \beta^-$ decay: deduced by the present evaluator based on $I_\gamma(1460\gamma)/I\beta^-=0.1195$ 14, which is equal to $I(\varepsilon \text{ to } 1461 \text{ level})/I\beta^-$, and $I(\beta^+)/I(\beta^-)=1.12 \times 10^{-5}$ 14 from evaluation of [1973EnVA](#), and $\varepsilon/\beta^+ (^{40}\text{K} \text{ to } ^{40}\text{Ar g.s.})=45.2$ 14 (3U theory), with all β^+ decay proceeding to ^{40}Ar ground state. Previously evaluated value by [1999BeZQ,1999BeZS](#) is 0.8914 13 based on the estimation of $\varepsilon/\beta^+=200$ 100 for the unique 3rd forbidden branch to the ^{40}Ar ground state.

Additional information 1.

Measurements: [2004Ko09](#), [2002Gr01](#), [2001No10](#), [1977Ce04](#), [1972Go21](#), [1967Mc10](#), [1966Fe09](#), [1965Le15](#), [1965Br25](#), [1962Fl05](#), [1962En01](#), [1960Sa31](#), [1960Eg01](#), [1959Ke26](#), [1957We43](#), [1956Mc20](#), [1955Ba25](#), [1955Ko21](#), [1955Su38](#), [1953Bu58](#), [1952Fe16](#), [1951Go29](#), [1951De34](#), [1950Sa52](#), [1949Ov01](#), [1948Ev09](#), [1947Gl07](#). This list is not complete, see [1978LeZA](#) for several other references that are not present in NSR database.

The decay scheme, which includes the β^- decay to the ground state of ^{40}Ca and two levels in ^{40}Ar , is complete since these are the only levels in the daughter nuclides below the respective decay energies.

 ^{40}Ca Levels

<u>E(level)</u>	<u>J^π</u>	<u>$T_{1/2}$</u>
0	0^+	stable

 β^- radiations

<u>E(decay)</u>	<u>E(level)</u>	<u>$I\beta^{-\dagger}$</u>	<u>Log ft</u>	<u>Comments</u>
(1310.89 6)	0	89.28 13	20.75 ^{3u}	av $E\beta=560.18$ 5 Log ft : $\log f^{\beta u} t$ from private communication from R. B. Firestone; see also 1970Wa11 . Additional information 2.

[†] For absolute intensity per 100 decays, multiply by 0.9999 12.