

^{87}As β^- n decay (484 ms) 2015Ko19

| Type | Author | History Citation | Literature Cutoff Date |
|-----------------|--------------|---------------------|------------------------|
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Parent: ^{87}As : $E=0$; $J^\pi=(3/2^-, 5/2^-)$; $T_{1/2}=484$ ms 35; $Q(\beta^-n)=6814$ 4; $\% \beta^-n$ decay=17.5 25

^{87}As - J^π : Proposed by 2015Ko19.

^{87}As - $T_{1/2}$: from 2013Ma22 (β -gated time distribution of γ rays in ^{87}Se and ^{86}Se . Weighted average of 478 ms 44 and 495 ms 60 for 92 γ and 704 γ , respectively). Others: 1.5 s +39-12 (2012Qu01), 0.48 s 4 (1993Ru01), 0.73 s 6 (1978Cr03), 0.6 s 3 (1970Kr05). Values in evaluations: 0.56 s 11 (2002Pf04), 0.56 s 8 (in ^{87}As Adopted Levels).

^{87}As - $Q(\beta^-n)$: From 2012Wa38.

^{87}As - $\% \beta^-n$ decay: $\% \beta^-n=17.5$ 25 (2002Pf04 compilation). Others: 15.4 22 (1993Ru01) and in Adopted Levels of ^{87}As , 44 14 (1978Cr03).

2015Ko19, 2013Ma22: ^{87}As produced in U(p,F),E(p)=54 MeV at HRIBF-ORNL using $^{238}\text{UC}_x$ target. Fission products were mass separated, and beam of ^{87}As was deposited on a moving tape collector (MTC) at the Low-Energy Radioactive Ion Beam Spectroscopy Station (LeRIBSS). Measured $E\gamma$, $I\gamma$, $\beta\gamma$ -coin, $\beta\gamma\gamma$ -coin, half-life of ^{87}As decay using HPGe clover detectors for γ rays and two plastic scintillation counters for β -particles.

1993Ru01: measured $\% \beta^-n$, $T_{1/2}$.

2002Pf04: compilation of $\% \beta^-n$ and $T_{1/2}$ data.

Theoretical calculations of $T_{1/2}$ and $\% \beta^-n$: 2005Bo19.

 ^{86}Se Levels

| E(level) [†] | J^π | Comments |
|-----------------------|-------------------|---|
| 0.0 | 0 ⁺ | |
| 704.1 3 | 2 ⁺ | |
| 1398.7 5 | (2 ⁺) | J^π : tentatively assigned level in 2015Ko19. |
| 1567.4 6 | 4 ⁺ | |

[†] From least-squares fit to $E\gamma$ data.

 $\gamma(^{86}\text{Se})$

| E_γ | I_γ | $E_i(\text{level})$ | J_i^π | E_f | J_f^π | Mult. [†] |
|------------|------------|---------------------|-------------------|-------|----------------|--------------------|
| 694.5 5 | 18 8 | 1398.7 | (2 ⁺) | 704.1 | 2 ⁺ | |
| 704.1 3 | 100 9 | 704.1 | 2 ⁺ | 0.0 | 0 ⁺ | E2 |
| 863.3 5 | 12 1 | 1567.4 | 4 ⁺ | 704.1 | 2 ⁺ | E2 |
| 1399 1 | 14.9 12 | 1398.7 | (2 ⁺) | 0.0 | 0 ⁺ | |

[†] From Adopted Gammas.

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Legend

- $I_\gamma < 2\% \times I_\gamma^{\text{max}}$
- $I_\gamma < 10\% \times I_\gamma^{\text{max}}$
- $I_\gamma > 10\% \times I_\gamma^{\text{max}}$
- Coincidence

Decay Scheme

Intensities: Relative I_γ 