

^{240}Am α decay 1970Go42

| Type | Author | History Citation | Literature Cutoff Date |
|-----------------|-------------|--------------------|------------------------|
| Full Evaluation | Shaofei Zhu | NDS 182, 2 (2022). | 1-Apr-2022 |

Parent: ^{240}Am : $E=0$; $J^\pi=(3^-)$; $T_{1/2}=50.8$ h 3; $Q(\alpha)=5.71\times 10^3$ 5; $\% \alpha$ decay $\approx 1.9\times 10^{-4}$

^{240}Am - $J^\pi, T_{1/2}$: From the Adopted Levels of ^{240}Am (2008Si25).

^{240}Am - $Q(\alpha)$: From 2021Wa16.

^{240}Am - $\% \alpha$ decay: From the Adopted Levels of ^{240}Am (2008Si25).

1970Go42: ^{240}Am produced by reaction $^{239}\text{Pu}(d,n)$ and chemically separated. Measured $E\alpha$ and $I\alpha$ and $T_{1/2}$ by Si surface barrier detector with FWHM=20 keV.

 ^{236}Np Levels

| E(level) [†] | J^π | $T_{1/2}$ | Comments |
|-----------------------|-----------|-----------------------|---|
| 0 | $6^{(-)}$ | 1.55×10^5 y 1 | E(level), $J^\pi, T_{1/2}$: from Adopted Levels. |
| 57 51 | $1^{(-)}$ | 22.5 h 4 | E(level), $J^\pi, T_{1/2}$: from Adopted Levels. |
| 241 50 | (3^-) ‡ | | |
| 283 50 | (4^-) ‡ | | |
| 334 50 | (5^-) ‡ | | |

[†] Deduced by evaluator using $E\alpha$ and $Q\alpha$, except where noted.

‡ Favored α decay from $((\pi 5/2[523])-(\nu 1/2[631]))3^-$ with $I\alpha$ and $E\alpha$ in agreement with the rotational band built on this configuration.

 α radiations

| $E\alpha$ | E(level) | $I\alpha$ ^{†#} | HF [‡] |
|-----------|----------|-------------------------|-----------------|
| 5286 3 | 334 | 1.23 10 | ≈ 34 |
| 5337 2 | 283 | 12.0 4 | ≈ 7.1 |
| 5378 1 | 241 | 86.8 10 | ≈ 1.7 |

[†] From 1970Go42.

‡ $r_0(^{236}\text{Np})=1.5049$ 46, unweighted average of $r_0(^{238}\text{Pu})=1.501258$ 57, $r_0(^{236}\text{Pu})=1.4947$ 17, $r_0(^{234}\text{U})=1.50745$ 13, $r_0(^{236}\text{U})=1.51631$ 11 from 2020Si16.

For absolute intensity per 100 decays, multiply by $\approx 1.9\times 10^{-6}$.