## $^{169}$Re $\alpha$ decay (15.1 s) 1992Me10

History

| Type | Author | Citation | Literature Cutoff Date |
|---|---|---|---|
| Full Evaluation | Balraj Singh and Jun Chen | NDS 194,460 (2024) | 31-Oct-2022 |

Parent: $^{169}$Re: E=187 *17*; $J^\pi$=(1/2$^+$,3/2$^+$); $T_{1/2}$=15.1 s *15*; Q($\alpha$)=5014 *13*; %$\alpha$ decay≈0.2

$^{169}$Re-E: From mass and E$\alpha$ analysis starting with $^{177}$Au and $^{177m}$Au decays (2021Ha32). 0.0+x from Adopted Levels of $^{169}$Re in ENSDF database (2015 update).

$^{169}$Re-$J^\pi$,$T_{1/2}$: From $^{169}$Re Adopted Levels in the ENSDF database (March 2015 update). Adopted $T_{1/2}$ is weighted average of 16.3 s *8* (1992Me10) 12.9 s *11* (1984Sc06), but with a reduced $\chi^2$=6.2. The unweighted average is 14.6 s*17*.

$^{169}$Re-Q($\alpha$): From 2021Wa16.

$^{169}$Re-%$\alpha$ decay: %$\alpha$≈0.2 from $^{169}$Re Adopted Levels in the ENSDF database (March 2015 update).

1992Me10: $^{169}$Re ions were produced via $^{141}$Pr($^{32}$S,4n) with 235 MeV $^{32}$S beam from the VICKSI accelerator at the Hahn-Meitner-Institut in Berlin and collected with a helium-jet system and a fast transport-tape. $\alpha$ particles were detected with a 450 mm$^2$ SB $\alpha$-detector mounted between a $\gamma$/X detector and a $\gamma$ detector. Measured E$\alpha$, I$\alpha$, $\alpha$(t). Deduced levels, parent $T_{1/2}$.

Others: 2004GoZZ, 1984Sc06, 1982De11, 1978Ca11.

### $^{165}$Ta Levels

| E(level) | $J^\pi$ | Comments |
|---|---|---|
| 0 | (9/2$^-$) | E(level): 5061$\alpha$ is assumed to feed the g.s.<br>$J^\pi$: from Adopted Levels. |

### $\alpha$ radiations

| E$\alpha$ | E(level) | I$\alpha$[‡] | HF[†] | Comments |
|---|---|---|---|---|
| 5061 *10* | 0 | 100 | ≈9 | E$\alpha$: from 1992Me10. Others: 5083 (2004GoZZ), 5050 *10* (1984Sc06).<br>I$\alpha$: assuming no $\alpha$ branches. |

[†] The nuclear radius parameter $r_0$($^{165}$Ta)=1.571 *21* is deduced from interpolation of radius parameters of the adjacent even-even nuclides in 2020Si16.

[‡] For absolute intensity per 100 decays, multiply by ≈0.002.