

^{170}Ir α decay (0.87 s) 2004GoZZ,2002Ro17,1996Pa01

| Type | Author | History Citation | Literature Cutoff Date |
|-----------------|-----------------|----------------------|------------------------|
| Full Evaluation | Coral M. Baglin | NDS 109, 1103 (2008) | 1-Mar-2008 |

Parent: ^{170}Ir : $E=0.0$; $J^\pi=(3^-)$; $T_{1/2}=0.87$ s $+18-12$; $Q(\alpha)=6110$ SY; $\% \alpha$ decay=5.2 17

^{170}Ir - $\% \alpha$ decay: From $\% \alpha=5.2$ 17 for 5815 α In 2002Ro17.

1996Pa01: ^{170}Ir produced in 354 MeV ^{70}Ge bombardment of ^{106}Cd ; measured $E\alpha$, $\alpha(t)$, parent-daughter α correlations.

2002Ro17: ^{170}Ir produced by α decay of ^{174}Au ; Si strip detector; measured $E\alpha$, parent-daughter α correlations, $T_{1/2}$ for ^{170}Ir .

2004GoZZ: ^{170}Ir from α decay of ^{174}Au produced by $^{92}\text{Mo}(^{84}\text{Sr,pn})$ At $E=390, 395$ MeV; fragment mass analyzer and double-sided Si strip detector (for recoils and decay α particles) surrounded by 4 Ge detectors and a low-energy photon spectrometer; recoil decay tagging technique; measured $E\alpha$, $I\alpha$, recoil- α - γ coin, $\alpha(t)$, parent-daughter α correlations.

^{170}Ir α decay: please see summary tabulation of data from the two known ^{170}Ir isomer decays At the beginning of the ^{170}Ir α decay (811 ms) data set.

ADOPTED low-spin parent $T_{1/2}$: 0.87 s $+18-12$ from 5815 $\alpha(t)$ (2002Ro17). IT is unclear whether any other observed α from ^{170}Ir also originates from the low-spin isomer. $E\alpha=6045$ 10 and $E\alpha=6030$ 10 (1978Sc26) each has a compatible $T_{1/2}$, but the 5815 α , the only α from low-spin ^{170}Ir reported by 2002Ro17 or 2004GoZZ, was absent In the study by 1978Sc26. $E\alpha=6027$ 5 (1982De11) May Be the same line that 1978Sc26 reported, but $T_{1/2}$ was not measured. the evaluator considers the 6045 α , 6030 α and 6027 α to Be of uncertain parentage.

 ^{166}Re Levels

| E(level) | J^π | Comments |
|----------|-----------|--|
| 0+x | (3 $^-$) | E(level): this May or May not Be the g.s.; comparison of $E\alpha$ with $Q(\alpha)$ from systematics (2003Au03) suggests that it is not. J^π : α decay possibly unhindered from low-spin (3 $^-$) ^{170}Ir . |

 α radiations

| $E\alpha$ | E(level) | $I\alpha^\ddagger$ | HF^\dagger | Comments |
|-----------|----------|--------------------|---------------------|---|
| 5815 4 | 0+x | 100 | 4.4 18 | $E\alpha$: weighted average of 5815 10 (2002Ro17) and 5815 5 (2004GoZZ). This $E\alpha$ would imply $Q(\alpha)=5955$ 4 were this a g.s. to g.s. transition; this is 150 keV lower than 6110 50 from systematics In 2003Au03. correlated with α from low-spin isomer of ^{174}Au (2002Ro17, 2004GoZZ). |

† $r_0=1.5602$ 23, the unweighted average of $r_0(^{166}\text{W})=1.555$ 9 and $r_0(^{166}\text{Os})=1.565$ 3 (from this evaluation), and $r_0(^{164}\text{W})=1.563$ 11 and $r_0(^{168}\text{Os})=1.558$ 8 from 1998Ak04.

‡ For absolute intensity per 100 decays, multiply by 0.052 17.