^{171}Ir α decay 1996Pa01,1992Sc16,1982De11

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 90, 431 (2000)	5-Jul-2000

Parent: ^{171}Ir: E=0.0; J^π=(11/2$^-$); $T_{1/2}$=1.46 s *9*; Q(α)=6159 *3*; %α decay=58 *11*

^{171}Ir-%α decay: %α(^{171}Ir)=58 *11* from 1996Pa01. Other:≈100 (1978Sc26).

Others: 1967Si02, 1978Ca11, 1978Sc26.

1996Pa01: sources from heavy-ion fusion-evaporation reactions; recoil mass separator, double-sided Si strip detector (FWHM≤20 keV); measured Eα, parent $T_{1/2}$ and %α.

1992Sc16: source from ^{141}Pr(^{36}Ar,xn), E=175-204 MeV; measured α excit, Eα, Iα, Eγ, Iγ, I(K x ray), α-(K x ray) coin, $\alpha\gamma$ coin, α(t); deduced α branching; Si and Ge detectors.

1982De11: sources from ^{63}Cu bombardments of Ag, Cd, In, Sn; measured Eα (silicon surface-barrier detector); He-jet transport.

$T_{1/2}$(^{171}Ir)=1.46 s *9* from the weighted average (limitation of statistical weights method) of 1.3 s *2* (1996Pa01), 1.7 s *4* (1978Ca11), 1.4 s *2* (1978Ca11), 1.6 s *1* (1978Sc26), 1.0 s *3* (1967Si02).

^{167}Re Levels

E(level)	J^π	Comments
0.0	(9/2$^-$)	J^π: tentative configuration=9/2[514], analogous to ^{169}Re (1992Sc16).
92	(11/2$^-$)	J^π: tentative configuration=11/2[505], analogous to ^{169}Re (1992Sc16).

α radiations

Eα	E(level)	Iα[‡]	HF[†]	Comments
5920 *4*	92	100	2.0 *4*	Eα: value recommended in 1991Ry01; based on 5925 *3* (1982De11), 5909 *5* (1967Si02, after adjustment by 1991Ry01), 5910 *10* (1978Ca11), 5910 *10* (1978Sc26). Other: 5945 *11* (1996Pa01).

[†] If r_0=1.56 *1* (based on r_0 for ^{166}Os, ^{168}Os, ^{166}Pt, ^{168}Pt in 1998Ak04), $T_{1/2}$(^{171}Ir)=1.46 s *9*, %α(^{171}Ir)=58 *11* (1996Pa01).

[‡] For absolute intensity per 100 decays, multiply by 0.58 *11*.

γ(^{167}Re)

Eγ[†]	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.[†]	α[‡]	Comments
92	92	(11/2$^-$)	0.0	(9/2$^-$)	(M1,E2)	6.3 *5*	α(K)=3.3 *24*; α(L)=2.3 *14*; α(M)=0.6 *4*; α(N+..)=0.17 *11* α(K)exp=10 *8* (1992Sc16) I(K x ray, Re):I(92γ)=95 *15*:9 *5* (1992Sc16).

[†] From 1992Sc16.

[‡] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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Legend

• Coincidence

Decay Scheme