^{171}Os ε decay 1995Hi02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin, E. A. Mccutchan	NDS 151, 334 (2018)	30-Jun-2018

Parent: ^{171}Os: E=0.0; J^π=(5/2$^-$); $T_{1/2}$=8.3 s *2*; Q(ε)=6950 *30*; %ε+%$β^+$ decay=98.20 *21*
^{171}Os-%ε+%$β^+$ decay: From [100%-%α(^{171}Os)] where %α=1.80 *21*.
Sources from ^{140}Ce(^{36}Ar,xn), E=194 and 203 MeV, 99.3% ^{140}Ce target.
α: Additional information 1.

^{171}Re Levels

E(level)†	Jπ‡
0.0	(9/2$^-$)
189.8 *4*	(5/2$^-$)
515.8 *11*	(3/2$^-$)
894.8 *6*	(7/2$^-$)

† From Eγ.
‡ From Adopted Levels.

ε,$β^+$ radiations

E(decay)	E(level)	Iβ+ ‡	Iε‡	Log *ft*†	I(ε+β+)‡	Comments
(6.06×10^3 *3*)	894.8	≈8.5	≈3.5	≈5.3	≈12	av Eβ=2291 *14*; εK=0.240 *3*; εL=0.0392 *5*; εM+=0.01217 *15*
(6.43×10^3 *3*)	515.8	≈7	≈2	≈5.5	≈9	av Eβ=2468 *14*; εK=0.2061 *25*; εL=0.0337 *4*; εM+=0.01046 *13*
(6.76×10^3 *3*)	189.8	≈60	≈17	≈4.7	≈77	av Eβ=2621 *14*; εK=0.1815 *21*; εL=0.0297 *4*; εM+=0.00920 *11*

† Values are shown As approximate because decay scheme may be very incomplete. If correct, these values indicate that ε decay from probable 5/2[523] parent (1995Hi02) to 190, 516 and 895 levels is allowed.
‡ Absolute intensity per 100 decays.

γ(^{171}Re)

Iγ normalization: from Σ (I(γ+ce) to g.s.)=100; significant feeding of g.s. not expected (ΔJ=(2), Δπ=(No) transition). However, Q=6957 and highest level energy fed In decay is 895 keV, so decay scheme may be very incomplete.

Eγ	Iγ†	Ei(level)	J_i^π	Ef	J_f^π	Mult.	α	Comments
189.8 *4*	100	189.8	(5/2$^-$)	0.0	(9/2$^-$)	[E2]	0.382	α(K)=0.194 *3*; α(L)=0.1421 *24*; α(M)=0.0357 *6*; α(N)=0.00850 *15*; α(O)=0.001240 *21* α(P)=1.666×10^{-5} *25* %Iγ ≈ 71 assuming adopted normalization.
326 *1*	11 *3*	515.8	(3/2$^-$)	189.8	(5/2$^-$)	[M1]	0.190	α(K)=0.158 *3*; α(L)=0.0249 *4*; α(M)=0.00568 *10*; α(N)=0.001378 *23*; α(O)=0.000232 *4* α(P)=1.70×10^{-5} *3*
705.0 *5*	17 *3*	894.8	(7/2$^-$)	189.8	(5/2$^-$)			

† For absolute intensity per 100 decays, multiply by ≈0.71.

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays