

¹⁷³Ir ε decay (9.0 s) 1992Bo21,1992Sc16

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	J. Tuli	ENSDF	15-Aug-2015

Parent: ¹⁷³Ir: E=0.0; J^π=(3/2⁺,5/2⁺); T_{1/2}=9.0 s 8; Q(ε)=7370 SY; %ε+%β⁺ decay>93.0

¹⁷³Ir-E,J^π,T_{1/2}: From ¹⁷³Ir Adopted Levels.

1992Bo21: sources from fusion of ³²S with samarium (E(³²S)=180-195 MeV), helium-jet transport (some sources from ⁴⁰Ca fusion with samarium); measured Eγ, Iγ (γ multianalysis), γX coin, γγ coin.

1992Sc16: sources from ¹⁴¹Pr(³⁶Ar,4n), E(³⁶Ar)=234 MeV, helium-jet transport; monoisotopic targets; measured excitation functions, Eγ, Iγ, γX coin, γγ coin.

The partial decay scheme and all data are from 1992Sc16, except where noted.

¹⁷³Os Levels

E(level)	J ^π	T _{1/2}	Comments
0.0	(5/2 ⁻)	22.4 s 9	
91.8 2	(7/2 ⁻)		
141.4 3	(9/2 ⁺)	>28 ns	T _{1/2} : estimate from prompt γγ-timing width (1992Bo21); 1990Ba29 estimate several microseconds in (HI,xnγ).

γ(¹⁷³Os)

Unplaced γ's are attributed to ¹⁷³Ir(2.20 s) or ¹⁷³Ir(9.0 s).

E _γ	I _γ [†]	E _i (level)	J _i ^π	E _f	J _f ^π	Mult. [‡]	δ	α [#]	Comments
49.6 2	≈67	141.4	(9/2 ⁺)	91.8	(7/2 ⁻)	E1		0.518	α(L)= 0.396; α(M)= 0.0918 α(exp)=0.7 2 (1992Sc16).
91.8 2	≈20	91.8	(7/2 ⁻)	0.0	(5/2 ⁻)	M1+E2	0.30 16	7.35 11	α(K)= 5.7 5; α(L)= 1.3 3; α(M)= 0.30 8; α(N+...)= 0.091 22 δ: from α(K)exp=5.7 4 (1992Sc16). Other: α(K)exp=5 1 (1992Bo21). δ=-0.7 +3-6 (from (HI,xnγ) (1990Ba29)).
^x 147.7 2	16 2								
^x 285.0 2	25 2								
^x 296	<5								

[†] Sources also contained ¹⁷³Ir(2.20 s); 1992Sc16 attribute 75% of Iγ(91.8γ) and 67% of Iγ(49.6γ) to 9.0-s isomer. Iγ(total)=27 2 for 91.8γ, Iγ(total)=100 for 49.6γ.

[‡] From (HI,xnγ).

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

^x γ ray not placed in level scheme.

^{173}Ir ϵ decay (9.0 s) 1992Bo21,1992Sc16

Decay Scheme

Intensities: Relative I_γ 