

¹⁶⁹Dy β⁻ decay 1990Ch34

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109, 2033 (2008)	15-Jun-2008

Parent: ¹⁶⁹Dy: E=0.0; J^π=(5/2)⁻; T_{1/2}=39 s 8; Q(β⁻)=3.2×10³ 3; %β⁻ decay=100.0

The partial decay scheme and all data are from 1990Ch34. Sources from multi-nucleon transfer reactions between ¹⁷⁰Er and tungsten targets, on-line mass separation; E(¹⁷⁰Er)=1445 MeV; measured Eβ, Iβ (plastic, silicon detectors), Eγ, Iγ (Ge, planar HPGE), time-resolved singles measurements, βγ coin, γγ coin.

¹⁶⁹Ho Levels

E(level)	J ^π †	T _{1/2}	Comments
0.0	7/2 ⁻	4.72 min 10	T _{1/2} : from Adopted Levels.
1578.2 4	(3/2,5/2,7/2) ⁻		

† From Adopted Levels.

β⁻ radiations

E(decay)	E(level)	Iβ ⁻ ‡	Log ft	Comments
(1.6×10 ³ 3)	1578.2	≈20	≈4.9	av Eβ=5.9×10 ² 13 Log ft: lower than any known log ft value involving the ν 5/2[512] orbital (1990Ch34); configuration for 1578 level not understood. 1990Ch34 suggest that this May Be a three quasiparticle state with configuration (π 7/2[523])⊗(ν 5/2[512])⊗(ν 5/2[523]) ⁻¹ , but decline to actually make that assignment.
(3.2×10 ³ 3)	0.0	≈80	≈5.4	av Eβ=1.30×10 ³ 14 Log ft: relatively low, compared with log ft=5.9 for 7/2[523] to 5/2[512] transition in ¹⁶⁷ Ho decay and log ft=6.4 for 5/2[512] to 7/2[523] transition in ¹⁷¹ Er decay, but not inconsistent with those values.

† Estimated from resolution of total β⁻ spectrum.

‡ Absolute intensity per 100 decays.

γ(¹⁶⁹Ho)

Iγ normalization: assuming Ti(1578γ)=Iβ(1578 level).

Eγ	Iγ†	E _i (level)	J _i ^π	E _f	J _f ^π	Mult.	α‡	Comments
1578.2 4	100	1578.2	(3/2,5/2,7/2) ⁻	0.0	7/2 ⁻	[M1,E2]	0.0017 4	α(K)=0.0014 3; α(L)=0.00019 4; α(M)=4.2×10 ⁻⁵ 8; α(N+..)=0.000121 13 α(N)=9.7×10 ⁻⁶ 19; α(O)=1.4×10 ⁻⁶ 3; α(P)=8.1×10 ⁻⁸ 18; α(IPF)=0.000110 10

† For absolute intensity per 100 decays, multiply by ≈0.20.

‡ 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.

${}^{169}\text{Dy}$ β^- decay 1990Ch34Decay SchemeIntensities: $I_{(\gamma+ce)}$ per 100 parent decays