^{80}Br IT decay (4.4205 h) 1972De67,1970Ne11,1960Sc04

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 105, 223 (2005)	22-Jun-2005

Parent: ^{80}Br: E=85.902 *30*; $J^\pi=5^-$; $T_{1/2}$=4.4205 h *8*; %IT decay=100.0

$T_{1/2}$(^{80}Br isomer): 2003Al36, 1990Ab06, 1969Ka06, 1968Re04, 1961Ha32, 1960Sc04, 1957Ki21. Others: 1958Gu09, 1951Mi16, 1939Bo05, 1938Bu04, 1937Sn02, 1937Bo10.

Production and identification of ^{80}Br isomer: 1950Ka72, 1948Wo08, 1947Se33, 1939Se03, 1936Al01, 1935Am01.

γ: 1990Ab06, 1972De67, 1970Ne11, 1960Sc04, 1952Mi38. Others: 1960Ho16, 1958Ch34, 1954Li19, 1952Ha14, 1950Ro07, 1950Li07, 1939Va02.

ce: 1980MeZY, 1960Sc04, 1960Ho16, 1950Li07, 1950Ro07, 1944Be07.

$\gamma\gamma$(t), ceγ(t): 1966Tu02, 1965Hu02, 1964Fl01, 1951Wr13.

$\gamma\gamma(\theta$,H,t): 1978Ta24.

Hyperfine structure and moments: 1964Wh05, 1959Li21.

ce ce(θ): 1956Br96, 1955Sh91, 1954La34.

^{80}Br Levels

E(level)	J^π[†]	$T_{1/2}$	Comments
0.0	1^+		
37.052 *2*	2^-	7.43 ns *6*	Q=0.173 *6* (1978Ta24) $T_{1/2}$: from $\gamma\gamma$(t) (1978Ta24). Other values from ceγ(t): 7.43 ns *25* (1966Tu02), 7.4 ns *3* (1965Hu02), 7.37 ns *21* (1964Fl01), ≤4 ns (1951Wr13).
85.902 *30*	5^-	4.4205 h *8*	μ=+1.3177 *6*; Q=+0.76 *3*(1964Wh05) $T_{1/2}$: from 1990Ab06. Others: 4.754 h *32* at room temperature and 4.791 h *34* at 77°K (2003Al36); 4.42 *1* (1969Ka06), 4.42 *1* (1968Re04), 4.37 *4* (1961Ha32), 4.40 *5* (1960Sc04), 4.38 *2* (1957Ki21), 1958Gu09, 1951Mi16, 1938Bu04, 1937Sn02, 1937Bo10. It should be noted that the value obtained by 2003Al36 is quoted with 0.7% uncertainty but is about 7.5% too high as compared to the other values in the literature; thus not used in deducing the adopted value. Weighted average of all the values quoted above but with uncertainty increased to 0.01 for the value from 1990Ab06, is 4.43 H 3.

[†] From 'Adopted Levels'.

γ(^{80}Br)

E_γ	I_γ[†‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α[#]	$I_{(\gamma+ce)}$[‡]	Comments
37.052 *2*	39.1 *8*	37.052	2^-	0.0	1^+	E1	1.56	100	α(K)= 1.375; α(L)= 0.1548; α(M)=0.02441 E_γ: from 1970Ne11 (bent-crystal spectrometer measurement). Others: 37.07 *3* (1972De67), 1960Sc04, 1950Li07, 1939Va02. Mult.: from α measurements. $\gamma\gamma(\theta)$ and ce-ce(θ) data are also consistent with this assignment. α: 1.59 *10* (1960Sc04). Others: 1950Li07, 1950Ro07, 1944Be07.
48.85 *3*	0.317 *9*	85.902	5^-	37.052	2^-	M3	308	100	α(K)= 223.4; α(L)= 69.2; α(M)= 11.72 E_γ: from 1972De67. Others: 1960Sc04, 1954Li19, 1950Li07, 1950Ro07, 1939Va02. Mult.: from α value. $\gamma\gamma(\theta)$ and ce-ce(θ) data are consistent with M3 and E1 assignments to 49 and 37 transitions, respectively. α: 298 *11* (1992Ch25), 314 *13* (1980MeZY);

Continued on next page (footnotes at end of table)

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γ(^{80}Br) (continued)

E_γ	E_i(level)	Comments
		from relative intensities of x-rays and γ-rays.
		α(K)exp: α(K)exp=210 *21* (1992Ch25), 208 *8* (1980MeZY). Others: α(K)exp=298 *30* (1960Sc04), Ice(L1)/Ice(L3)=1.00 *25* (1952Mi38), 1952Ha14, 1950Li07.
		(49γ)(37γ)(θ): A_2=−0.125 *23* (1978Ta24). (49 ce)(37ce) (θ): A_2=0.28 (1955Sh91), 0.292 *24* (1956Br96).

† From I(γ+ce) and α (with 3% uncertainty for α), Iγ(48)/Iγ(37)=0.0087 *6* (1960Sc04), 0.0081 *3* (from level scheme).

‡ Absolute intensity per 100 decays.

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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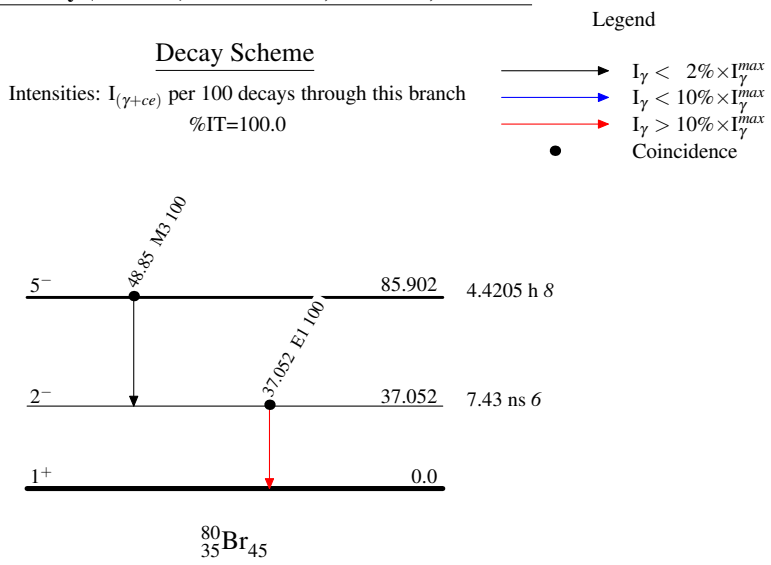

$^{80}_{35}Br_{45}$