

**$^{58}\text{Co}$  IT decay (9.10 h) 1971PI02,1970Ca19**

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja and B. Singh	ENSDF	31-Oct-2015

Parent:  $^{58}\text{Co}$ : E=24.889 21;  $J^\pi=5^+$ ;  $T_{1/2}=9.10$  h 9; %IT decay=100.0

1971PI02:  $^{58}\text{Co}$  produced in reaction  $^{58}\text{Ni}(\nu,\pi)$ . Measured G, ce.

1970Ca19:  $^{58}\text{Co}$  produced in reaction  $^{59}\text{Co}(\gamma,\nu)$ . Measured G, ce. Used University of Toronto linear electron accelerator.

1968Wi10: Measured  $\gamma$ , ce.

1967St23: Measured  $\gamma$ , ce.

1950St22: Co produced by using Mn and a 40 MeV a particle beam. Measured  $\gamma$ , ce, did not observe  $\beta^+$ .

 $^{58}\text{Co}$  Levels

E(level)	$J^\pi^\dagger$	$T_{1/2}^\dagger$	Comments
0.0	$2^+$	70.86 d 6	
24.889 21	$5^+$	9.10 h 9	$T_{1/2}$ : weighted average of 9.15 h 10 (1967St23) and 8.94 h 17 (1970Ca19). Others: 9.0 h 2 (1960Pr05,1952Av17), 9.2 h 2 (1952Ho58,1950Ch62). Same value in Adopted Levels.

$^\dagger$  From Adopted Levels.

 $\gamma(^{58}\text{Co})$ 

$E_\gamma$	$I_\gamma^\dagger$	$E_i(\text{level})$	$J_i^\pi$	$E_f$	$J_f^\pi$	Mult.	$\alpha^\ddagger$	$I_{(\gamma+ce)}^\dagger$	Comments
24.889 21	0.0397 6	24.889	$5^+$	0.0	$2^+$	M3	$2.52 \times 10^3$ 4	100	$\alpha(\text{K})=1840$ ; $\alpha(\text{L})=592$ ; $\alpha(\text{M})=84.5$ ; $\alpha(\text{N}+..)=2.1$ $I_\gamma$ : from $I(\gamma+ce)$ and $\alpha$ . Mult.: $L1/(L2+L3)=1.070$ 15, $M1/(M2+M3)=1.19$ 6, $L/M=6.62$ 13, $N1/M1=0.034$ 10 (1971PI02); $K/LM+=2.25$ 15 (1968Wi10), $2.0$ +11-6 (1967St23), $1.9$ 2 (1950St22); $\alpha(\text{K})_{\text{exp}}=1860$ 100 (based on average $\text{K x ray}/I(25\gamma)=722$ 26 (680 88 (1968Wi10), $710$ 50 (1967St23), $733$ 33 (1970Ca19)) and fluorescence yield 0.389 14). $\delta(\text{E4/M3}) < 0.014$ from $\delta^2 < 2 \times 10^{-4}$ (1971PI02); $< 0.009$ from $\delta^2 = 2.7 \times 10^{-5}$ 55 (deduced in 2006Ra03 evaluation from measured subshell ratios listed above). $E_\gamma$ : from 1971PI02. Others: 24.87 4 (1970Ca19), 1954Ca18, 1950St22. See also 1967St23.

$^\dagger$  Absolute intensity per 100 decays.

$^\ddagger$  Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on  $\gamma$ -ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.

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Intensities:  $I_{(\gamma+ce)}$  per 100 parent decays  
%IT=100.0

