^{36}Ar(^{14}N,npγ) 1979Ek03

Type	Author	History Citation	Literature Cutoff Date
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1979Ek03: E=28-36 MeV ^{14}N beams were produced from the Liverpool EN tandem accelerator. Targets were ≈10 mg/cm^2 frozen ^{36}Ar (99.5% enriched) on 250 μm gold backings. γ rays were detected with two escape-suppression spectrometer (ESS) and a three-Ge(Li) polarimeter; neutrons were detected with a liquid scintillator. Measured Eγ, Iγ, γγ-coin, nγ-coin, γ(θ), γ(lin pol), Doppler-shift attenuation (DSA). Deduced levels, J, π, $T_{1/2}$, γ-ray multipolarities, mixing ratios. Comparisons with shell-model calculations. 1979Ek03 also report $T_{1/2}$ from recoil-distance measurements using ^{40}Ca(^{10}B,npγ) reaction. See more details in that dataset.

^{48}Cr Levels

E(level)†	Jπ‡	$T_{1/2}$#	Comments
0.0	0^+		
752.14 *13*	2^+	7.3@ ps *8*	
1858.6 *4*	4^+	1.3 ps *4*	$T_{1/2}$: from DSAM line-shape analysis (1979Ek03).
3447.8 *11*	6^+	<0.7 ps	$T_{1/2}$: from DSAM centrod-shift analysis (1979Ek03). Other: 1979Ek03 also report a lifetime=0.63 ps *20* from DSAM, but not adopt it in view of uncertainties in feeding times for heavy-ion fusion evaporation reactions.
3533.9 *5*	$4^{(-)}$	2.5@ ns *7*	Jπ: $5^{(-)}$ is proposed by 1979Ek03 based on γ(θ). $T_{1/2}$: DSA measured but no $T_{1/2}$ given from it by 1979Ek03. It is only stated in 1979Ek03 that the result from RDM is consistent with their DSA measurement.
4064.7 *5*	$5^{(-)}$	28@ ps *7*	Jπ: $6^{(-)}$ from 1979Ek03 discrepant.
5191.8 *12*	8^+	<0.8 ps	Jπ: 6^+ or 8^+ from γ(θ,pol), 8^+ favored from yield curve (1979Ek03). $T_{1/2}$: from lifetime<1.2 ps as adopted in the level scheme in 1979Ek03. Other: 1979Ek03 also report a lifetime=0.75 ps *24* from DSAM (centroid shift), but not adopted in their level scheme.
7070.1 *17*	10^+	<0.7 ps	Jπ: (10^+) indicated by the yield curve and decay mode (1979Ek03). $T_{1/2}$: from lifetime<≈1 ps indicated by the width of 1878γ (1979Ek03).

† From a least-squares fit to γ-ray energies.
‡ From Adopted Levels. Adopted assignments are supported by γ(θ), γ(lin pol), and yield curve in 1979Ek03, except for those discrepant ones in 1979Ek03 as indicated under comments.
# From DSAM in 1979Ek03, unless otherwise noted.
@ From recoil-distance method in ^{40}Ca(^{10}B,npγ) (1979Ek03).

γ(^{48}Cr)

Eγ†	Iγ†	Ei(level)	J^π_i	E_f	J^π_f	Mult.‡	Comments
530.77 *17*	13.3 *4*	4064.7	$5^{(-)}$	3533.9	$4^{(-)}$	(D+Q)	δ: δ(E2/M1)>20 from 1979Ek03 for $J^\pi=6^-$. A_2=−0.017 *12*, A_4=+0.120 *14*, POL=+0.10 *14* (1979Ek03).
752.13 *13*	100 *3*	752.14	2^+	0.0	0^+	E2	A_2=+0.190 *6*, A_4=−0.035 *9*, POL=+0.25 *4* (1979Ek03).
1106.4 *3*	89 *5*	1858.6	4^+	752.14	2^+	E2	Mult.: Q from γ(θ) in 1979Ek03, M2 ruled out by RUL. A_2=+0.29 *7*, A_4=−0.09 *8* (1979Ek03).
1589.2 *10*	42 *2*	3447.8	6^+	1858.6	4^+	E2	A_2=+0.29 *36*, A_4=−0.15 *36*, POL=+0.87 *25* (1979Ek03).
1675.3 *3*	22.2 *7*	3533.9	$4^{(-)}$	1858.6	4^+	(D+Q)	δ: δ(M2/E1)>6 from 1979Ek03 for $J^\pi=5^-$. A_2=+0.006 *15*, A_4=+0.072 *16*, POL=−0.03 *9* (1979Ek03).
1744.0 *5*	16 *3*	5191.8	8^+	3447.8	6^+	(E2)	A_2=+0.59 *17*, A_4=+0.07 *24*, POL=+0.97 *48* (1979Ek03).
1878.2 *12*	≈12	7070.1	10^+	5191.8	8^+		

† From 1979Ek03.
‡ From γ(θ) and γ(lin pol) in 1979Ek03, unless otherwise noted.

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Level Scheme

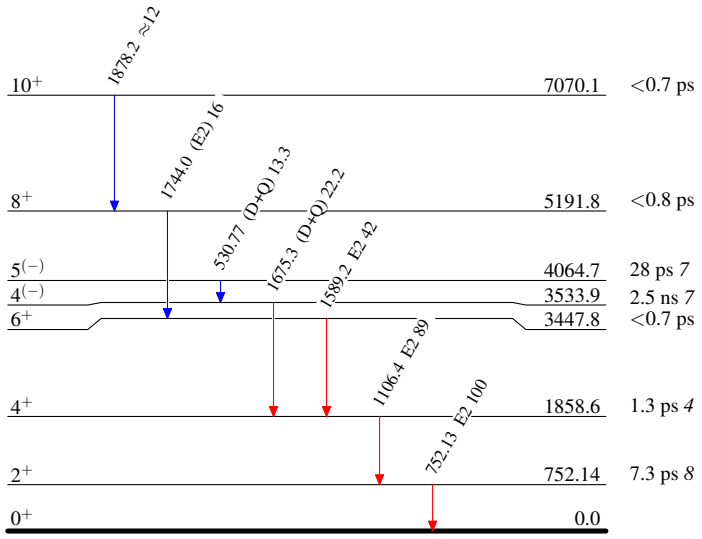
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{48}_{24}Cr_{24}$