



1 Decay Scheme

Ar-41 disintegrates by beta minus decay to excited levels and the ground state level of K-41.

L'argon 41 se désintègre par émission bêta moins vers des niveaux excités et le niveau fondamental de potassium 41.

2 Nuclear Data

$T_{1/2}({}^{41}\text{Ar})$: 109,611 (38) min

$Q^{-}({}^{41}\text{Ar})$: 2491,6 (4) keV

2.1 β^{-} Transitions

	Energy keV	Probability × 100	Nature	lg <i>ft</i>
$\beta_{0,2}^{-}$	814,6 (4)	0,0515 (49)	1st Forbidden	7,68
$\beta_{0,1}^{-}$	1197,96 (40)	99,165 (20)	Allowed	5,05
$\beta_{0,0}^{-}$	2491,6 (4)	0,784 (19)	Unique 1st Forbidden	9,72

2.2 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	$P_{\gamma+ce}$ × 100	Multipolarity	α_K (10 ⁻⁵)	α_L (10 ⁻⁵)	α_M (10 ⁻⁶)	α_T (10 ⁻⁵)	α_{π} (10 ⁻⁶)
$\gamma_{1,0}(\text{K})$	1293,64 (4)	99,165 (20)	M2 + 1,37 % E3	6,36 (9)	0,534 (8)	0,580 (9)	7,44 (11)	4,92 (7)
$\gamma_{2,0}(\text{K})$	1677,0 (3)	0,0515 (49)						

3 Atomic Data

3.1 K

$$\begin{aligned}\omega_K &: 0,143 \quad (4) \\ n_{KL} &: 1,654 \quad (6)\end{aligned}$$

3.1.1 X Radiations

	Energy keV	Relative probability	
X_K	$K\alpha_2$	3,3111	
	$K\alpha_1$	3,3138	
	$K\beta_1$	3,5896	}
	$K\beta_5''$	3,6028	
			18,44

4 Electron Emissions

	Energy keV	Electrons per 100 disint.
$\beta_{0,2}^-$	max: 814,6 (4)	0,0515 (49)
$\beta_{0,2}^-$	avg: 293,9 (2)	
$\beta_{0,1}^-$	max: 1197,96 (40)	99,165 (20)
$\beta_{0,1}^-$	avg: 459,18 (18)	
$\beta_{0,0}^-$	max: 2491,6 (4)	0,784 (19)
$\beta_{0,0}^-$	avg: 1076,6 (2)	

5 Photon Emissions

5.1 X-Ray Emissions

		Energy keV	Photons per 100 disint.	
XK α_2	(K)	3,3111	0,000270 (9)	} K α
XK α_1	(K)	3,3138	0,000533 (17)	
XK β_1	(K)	3,5896	} 0,000098 (4)	K' β_1
XK β_5''	(K)	3,6028		

5.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
$\gamma_{1,0}$ (K)	1293,64 (4)	99,157 (20)
$\gamma_{2,0}$ (K)	1677,0 (3)	0,0515 (49)

6 Main Production Modes

Cl – 41(β)Ar – 41
 Ar – 40(n, γ)Ar – 41
 Ar – 40(d,p γ)Ar – 41

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