



1 Decay Scheme

Cl-36 disintegrates by 98.1 % beta-minus decay to the ground state of Ar-36; 1.9 % electron capture and 0.0015 % beta-plus decay to the ground state of S-36.

Le chlore 36 se désintègre pour 98,1 % par émission bêta moins vers le niveau fondamental d'argon 36 et par capture électronique (1,9 %) et émission bêta plus (0,0015 %) vers le niveau fondamental de soufre 36.

2 Nuclear Data

$T_{1/2}({}^{36}\text{Cl})$:	302	(4)	10^3 a
$Q^-({}^{36}\text{Cl})$:	709,55	(5)	keV
$Q^+({}^{36}\text{Cl})$:	1142,14	(19)	keV

2.1 β^+ Transitions

	Energy keV	Probability $\times 100$	Nature	lg ft
$\beta_{0,0}^+$	120,14 (19)	0,00157 (30)	2nd Forbidden	14,5

2.2 Electron Capture Transitions

	Energy keV	Probability $\times 100$	Nature	lg ft	P_K	P_L	P_{M+}
$\epsilon_{0,0}$	1142,14 (19)	1,9 (1)	2nd Forbidden	13,5	0,904 (5)	0,086 (4)	0,010 (1)

2.3 β^- Transitions

	Energy keV	Probability $\times 100$	Nature	lg <i>ft</i>
$\beta_{0,0}^-$	709,53 (5)	98,1 (1)	2nd Forbidden	13,3

3 Atomic Data

3.1 S

$$\begin{aligned}\omega_K &: 0,0804 \quad (19) \\ n_{KL} &: 1,807 \quad (7)\end{aligned}$$

3.1.1 X Radiations

	Energy keV	Relative probability
X_K	$K\alpha_2$	2,3066
	$K\alpha_1$	2,3078
	$K\beta_3$	2,457
	$K\beta_5''$	
		50,5
		100
		}
		}
		9,3

3.1.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	1,98 – 2,12	100
KLX	2,22 – 2,30	12,4
KXY	2,44 – 2,46	0,38

3.2 Ar

$$\omega_K : 0,120 \quad (3)$$

$$n_{KL} : 1,697 \quad (6)$$

3.2.1 X Radiations

	Energy keV	Relative probability
X _K		
K α_2	2,9553	50,5
K α_1	2,9577	100
K β_3	3,1905	}
K β_5''		
		16,2

3.2.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	2,511 – 2,669	100
KLX	2,831 – 2,942	21,6
KXY	3,149 – 3,174	1,16

4 Electron Emissions

		Energy keV	Electrons per 100 disint.
e _{AL}	(S)	-	0,163 (12)
e _{AK}	(S)		1,58 (9)
	KLL	1,98 - 2,12	}
	KLX	2,22 - 2,30	}
	KXY	2,44 - 2,46	}
e _{AK}	(Ar)		0,13 (2)
	KLL	2,511 - 2,669	}
	KLX	2,831 - 2,942	}
	KXY	3,149 - 3,174	}
$\beta_{0,0}^+$	max:	120,14 (19)	0,00157 (30)
$\beta_{0,0}^+$	avg:	54 (4)	
$\beta_{0,0}^-$	max:	709,53 (5)	98,1 (1)
$\beta_{0,0}^-$	avg:	316 (16)	

5 Photon Emissions

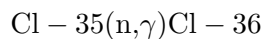
5.1 X-Ray Emissions

		Energy keV	Photons per 100 disint.
XK α_2	(S)	2,3066	0,044 (3) } K α
XK α_1	(S)	2,3078	0,086 (5) }
XK β_3	(S)	2,457	}
XK β_1	(S)	}	0,008 (1) K' β_1
XK α_2	(Ar)	2,9553	0,0062 (10) } K α
XK α_1	(Ar)	2,9577	0,0123 (19) }
XK β_3	(Ar)	3,1905	}
XK β_1	(Ar)	}	0,0020 (3) K' β_1

5.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
γ^{\pm}	511	0,0031 (6)

6 Main Production Modes



7 References

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