$^{37}_{18}\mathrm{Ar}_{19}$

1 Decay Scheme

Ar-37 decays 100% by electron capture to the ground state of Cl-37.
L'argon se désintègre par capture électronique vers le niveau fondamental de clore 37.

2 Nuclear Data

$T_{1/2}(^{37}\mathrm{Ar}\ )$: 35,01 (2) d
$Q^{+}(^{37}\mathrm{Ar}\ )$: 813,87 (20) keV

2.1 Electron Capture Transitions

	Energy keV	Probability × 100	Nature	lg ft	P_K	P_L	P_{M+}
$\epsilon_{0,0}$	813,87 (20)	100	Allowed	5,1	0,9021 (24)	0,0872 (20)	0,0106 (7)

3 Atomic Data

3.1 Cl

ω_K	:	0,0989	(24)
$\bar{\omega}_L$	:	0,00118	(24)
n_{KL}	:	1,751	(6)

3.1.1 X Radiations

		Energy keV		Relative probability
X_K				
	$K\alpha_2$	2,6208		50,56
	$K\alpha_1$	2,62241		100
	$K\beta_1$	2,8156	}	
	$K\beta''_5$		}	12,95
X_L				
	$L\ell$	0,1833		
	$L\beta$	– 0,2681		

3.1.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	2,241 – 2,384	100
KLX	2,535 – 2,616	17,2
KXY	2,787 – 2,809	0,74
Auger L	0,165 – 0,257	

4 Electron Emissions

		Energy keV	Electrons per 100 disint.
e_{AL}	(Cl)	0,165 - 0,257	166,5 (8)
e_{AK}	(Cl)		81,3 (3)
	KLL	2,241 - 2,384	}
	KLX	2,535 - 2,616	}
	KXY	2,787 - 2,809	}

5 Photon Emissions

5.1 X-Ray Emissions

		Energy keV	Photons per 100 disint.	
XL	(Cl)	0,1833 — 0,2681	0,20 (4)	
XKα_2	(Cl)	2,6208	2,76 (7)	} Kα
XKα_1	(Cl)	2,62241	5,46 (14)	}
XKβ_1	(Cl)	2,8156 }	0,71 (4)	K$'\beta_1$

6 Main Production Modes

Cl − 37(p,n)Ar − 37

Cl − 37(d,2n)Ar − 37

S − 34(α,3n)Ar − 37

K − 39(d,α)Ar − 37

Ca − 40(n,α)Ar − 37

Ar − 36(n,γ)Ar − 37 $\quad\sigma$: 0,430 (6) barns

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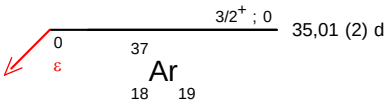
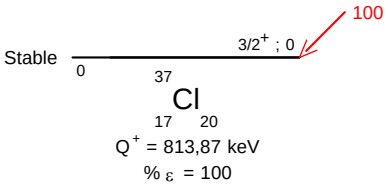

3/2+ ; 0
35,01 (2) d
0
ε
37
Ar
18
19


100
Stable
3/2+ ; 0
0
37
Cl
17
20
Q+ = 813,87 keV
%ε = 100