$^{108m}_{47}\mathrm{Ag}_{61}$

1 Decay Scheme

Ag-108m disintegrates 90.9(6)% by electron capture to the 1771 keV excited state in Pd-108, and by 9.1(6)% through isomeric transitions (two gamma-rays in cascade) in Ag-108.
L'argent 108 métastable se désintègre pour 90,9(6)% par capture électronique vers le niveau excité de 1771 keV de palladium 108 et se désexcite pour 9,1(6)% vers le niveau fondamental d'argent 108 selon 2 transitions gamma en cascade.

2 Nuclear Data

$T_{1/2}(^{108m}\mathrm{Ag})$	:	438	(9)	a
$T_{1/2}(^{108}\mathrm{Ag})$	:	2,382	(11)	min
$Q^{+}(^{108m}\mathrm{Ag})$	:	2031	(6)	keV
$Q^{IT}(^{108m}\mathrm{Ag})$	:	109,440	(7)	keV

2.1 Electron Capture Transitions

	Energy keV	Probability × 100	Nature	lg ft	P_K	P_L	P_M
$\epsilon_{0,3}$	260 (6)	90,9 (6)	Allowed	9,24	0,8457 (15)	0,1238 (12)	0,0256 (5)

2.2 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	$P_{\gamma+ce}$ × 100	Multipolarity	α_K	α_L	α_M	α_T
$\gamma_{2,1}$(Ag)	30,309 (8)	9,1 (6)	M4	9,77 (29) 10^3	320 (10) 10^3	82,0 (25) 10^3	425 (13) 10^3
$\gamma_{1,0}$(Ag)	79,131 (3)	9,1 (6)	E1	0,269 (8)	0,0336 (10)	0,00633 (19)	0,310 (9)
$\gamma_{1,0}$(Pd)	433,938 (4)	90,9 (6)	[E2]	0,00784 (24)	0,001021 (31)	0,000192 (6)	0,00909 (27)
$\gamma_{2,1}$(Pd)	614,31 (5)	90,8 (16)	E2	0,00291 (9)	0,000360 (11)	0,0000677 (20)	0,00335 (10)
$\gamma_{3,2}$(Pd)	722,91 (5)	91,0 (16)	E2	0,00191 (6)	0,000231 (7)	0,0000434 (13)	0,00219 (7)

3 Atomic Data

3.1 Pd

ω_K : 0,820 (4)
$\bar{\omega}_L$: 0,0536 (13)
n_{KL} : 0,975 (4)

3.1.1 X Radiations

		Energy keV		Relative probability
X_K				
	$K\alpha_2$	21,0203		52,93
	$K\alpha_1$	21,1774		100
	$K\beta_3$	23,7914	}	
	$K\beta_1$	23,819	}	
	$K\beta_5''$	24,013	}	27,44
	$K\beta_2$	24,2994	}	
	$K\beta_4$	24,344	}	4,66

3.1.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	17,032 – 17,884	100
KLX	20,032 – 21,176	42
KXY	23,011 – 24,347	4,4
Auger L	1,7 – 3,6	

3.2 Ag

ω_K : 0,831 (4)
$\bar{\omega}_L$: 0,0583 (14)
n_{KL} : 0,964 (4)

3.2.1 X Radiations

		Energy keV		Relative probability
X_K				
	$K\alpha_2$	21,9906		53,05
	$K\alpha_1$	22,16317		100
	$K\beta_3$	24,9118	}	
	$K\beta_1$	24,9427	}	
	$K\beta_5''$	25,146	}	27,7
	$K\beta_2$	25,4567	}	
	$K\beta_4$	25,512	}	4,82

3.2.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	17,79 – 18,69	100
KLX	20,945 – 22,160	42,5
KXY	24,079 – 25,507	4,51
Auger L	1,9 – 3,8	

4 Electron Emissions

		Energy keV	Electrons per 100 disint.
e_{AL}	(Pd)	1,7 - 3,6	83,1 (4)
e_{AK}	(Pd)		14,1 (4)
	KLL	17,032 - 17,884	}
	KLX	20,032 - 21,176	}
	KXY	23,011 - 24,347	}
e_{AL}	(Ag)	1,9 - 3,8	8,60 (7)
e_{AK}	(Ag)		0,349 (27)
	KLL	17,79 - 18,69	}
	KLX	20,945 - 22,160	}
	KXY	24,079 - 25,507	}
$ec_{1,0\ K}$	(Ag)	53,617 (3)	1,80 (14)
$ec_{1,0\ L}$	(Ag)	75,325 - 75,780	0,225 (17)
$ec_{1,0\ K}$	(Pd)	409,588 (4)	0,716 (22)
$ec_{1,0\ L}$	(Pd)	430,334 - 430,765	0,0938 (29)
$ec_{2,1\ K}$	(Pd)	589,96 (5)	0,268 (9)
$ec_{3,2\ K}$	(Pd)	698,56 (5)	0,175 (6)

5 Photon Emissions

5.1 X-Ray Emissions

		Energy keV		Photons per 100 disint.	
$XK\alpha_2$	(Pd)	21,0203		18,38 (18)	} $K\alpha$
$XK\alpha_1$	(Pd)	21,1774		34,72 (30)	}
$XK\beta_3$	(Pd)	23,7914	}		
$XK\beta_1$	(Pd)	23,819	}	9,53 (12)	$K'\beta_1$
$XK\beta''_5$	(Pd)	24,013	}		
$XK\beta_2$	(Pd)	24,2994	}		
$XK\beta_4$	(Pd)	24,344	}	1,62 (6)	$K'\beta_2$
$XK\alpha_2$	(Ag)	21,9906		0,49 (4)	} $K\alpha$
$XK\alpha_1$	(Ag)	22,16317		0,93 (7)	}

		Energy keV		Photons per 100 disint.	
XKβ_3	(Ag)	24,9118	}		
XKβ_1	(Ag)	24,9427	}	0,256 (19)	K$'\beta_1$
XKβ_5''	(Ag)	25,146	}		
XKβ_2	(Ag)	25,4567	}		
XKβ_4	(Ag)	25,512	}	0,045 (4)	K$'\beta_2$

5.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
$\gamma_{2,1}$(Ag)	30,309 (8)	0,0000215 (18)
$\gamma_{1,0}$(Ag)	79,131 (3)	6,9 (5)
$\gamma_{1,0}$(Pd)	433,938 (5)	90,1 (6)
$\gamma_{2,1}$(Pd)	614,276 (4)	90,5 (16)
$\gamma_{3,2}$(Pd)	722,907 (10)	90,8 (16)

6 Main Production Modes

Ag − 107(n,γ)Ag − 108m

7 References

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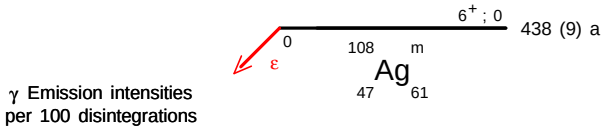
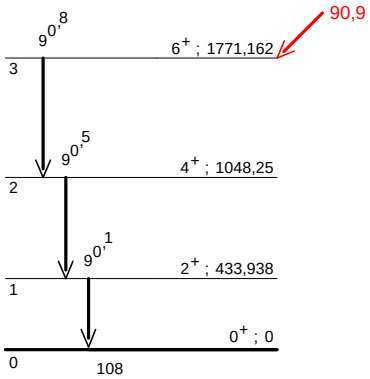
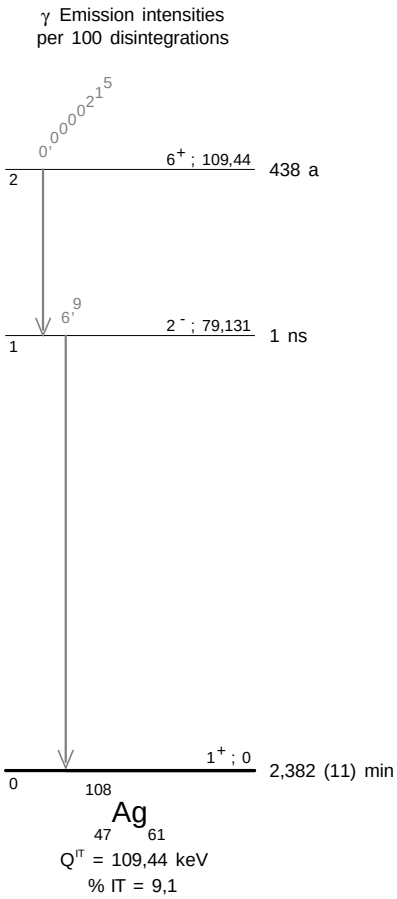


γ Emission intensities
per 100 disintegrations



Q^{+} = 2031 keV

% ε = 90,9


γ Emission intensities
per 100 disintegrations
0,0000215
0,0002
6+ ; 109,44
438 a
2
6,9
2 - ; 79,131
1 ns
1
1+ ; 0
2,382 (11) min
0
108
Ag
47
61
Q^IT = 109,44 keV
% IT = 9,1