$^{108}_{47}$Ag $_{61}$

1 Decay Scheme

Ag-108 disintegrates by electron capture (2.19 (14) %) and beta plus emission (0.283 (20) %) to excited states in Pd-108 and, by beta minus emission (97.53 (14) %) to excited states in Cd-108.
L'argent 108 se désintègre pour 2,19 (14) % par capture électronique et 0,283 (20) % par émission bêta plus vers les niveaux excités de palladium 108 et pour 97,53 (14) % par émission bêta moins vers le niveau excité de 632 keV et le niveau fondamental de cadmium 108.

2 Nuclear Data

$T_{1/2}$(^{108}Ag)	:	2,382	(11)	min
Q^-(^{108}Ag)	:	1649	(8)	keV
Q^+(^{108}Ag)	:	1922	(6)	keV

2.1 β^- Transitions

	Energy keV	Probability × 100	Nature	lg ft
$\beta^-_{0,1}$	1016 (8)	1,63 (26)	Allowed	5,35
$\beta^-_{0,0}$	1649 (8)	95,9 (3)	Allowed	4,43

2.2 β^+ Transitions

	Energy keV	Probability × 100	Nature	lg ft
$\beta^+_{0,1}$	466 (6)	0,0026 (3)	Allowed	5,46
$\beta^+_{0,0}$	900 (6)	0,28 (2)	Allowed	4,7

2.3 Electron Capture Transitions

	Energy keV	Probability × 100	Nature	lg ft	P_K	P_L	P_M
$\epsilon_{0,6}$	382 (6)	0,00224 (27)		6,12	0,8529 (15)	0,1181 (11)	0,0242 (5)
$\epsilon_{0,5}$	481 (6)	0,0170 (21)	Allowed	5,46	0,8560 (14)	0,1157 (11)	0,0237 (5)
$\epsilon_{0,4}$	608 (6)	0,0038 (6)	Allowed	6,37	0,8585 (14)	0,1138 (11)	0,0232 (5)
$\epsilon_{0,3}$	869 (6)	0,243 (39)	Allowed	4,89	0,8611 (14)	0,1118 (11)	0,0227 (5)
$\epsilon_{0,1}$	1488 (6)	0,19 (8)	Allowed	5,46	0,8636 (14)	0,1098 (10)	0,0223 (4)
$\epsilon_{0,0}$	1922 (6)	1,73 (12)	Allowed	4,7	0,8644 (14)	0,1092 (10)	0,0221 (4)

2.4 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	$P_{\gamma+ce}$ × 100	Multipolarity	α_K	α_L	α_M	α_T
$\gamma_{4,2}$(Pd)	383,13 (16)	0,00083 (30)					
$\gamma_{5,3}$(Pd)	388,36 (7)	0,0017 (6)					
$\gamma_{1,0}$(Pd)	433,938 (5)	0,46 (7)	[E2]	0,00784 (24)	0,001021 (31)	0,000192 (6)	0,00909 (27)
$\gamma_{2,1}$(Pd)	497,13 (12)	0,00152 (40)					
$\gamma_{3,1}$(Pd)	618,86 (5)	0,245 (39)					
$\gamma_{1,0}$(Cd)	632,98 (5)	1,63 (26)	E2	0,00300 (9)	0,000380 (11)	0,0000730 (22)	0,00347 (10)
$\gamma_{4,1}$(Pd)	880,26 (10)	0,00298 (48)					
$\gamma_{2,0}$(Pd)	931,07 (12)	0,00048 (8)					
$\gamma_{5,1}$(Pd)	1007,22 (5)	0,0126 (20)					
$\gamma_{6,1}$(Pd)	1106,01 (7)	0,00130 (22)					
$\gamma_{5,0}$(Pd)	1441,16 (5)	0,00269 (44)	[E2]	0,000407 (12)	0,0000469 (14)	0,00000878 (26)	0,000464 (14)
$\gamma_{6,0}$(Pd)	1539,95 (7)	0,00094 (16)					

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			
	Kα_2	21,0203	52,93
	Kα_1	21,1774	100

	Energy keV		Relative probability
Kβ_3	23,7914	}	
Kβ_1	23,819	}	
Kβ_5''	24,013	}	27,44
Kβ_2	24,2994	}	
Kβ_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 Cd

ω_K : 0,842 (4)
$\bar{\omega}_L$: 0,0632 (16)
n_{KL} : 0,953 (4)

3.2.1 X Radiations

		Energy keV		Relative probability
X_K				
	Kα_2	22,9843		53,17
	Kα_1	23,1738		100
	Kβ_3	26,0615	}	
	Kβ_1	26,0958	}	
	Kβ_5''	26,304	}	27,87
	Kβ_2	26,644	}	
	Kβ_4	26,702	}	5,07

3.2.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	18,556 – 19,507	100
KLX	21,873 – 23,172	43
KXY	25,171 – 26,707	4,63
Auger L	1,8 – 4,0	

4 Electron Emissions

		Energy keV		Electrons per 100 disint.
e_{AL}	(Pd)	1,7 - 3,6		1,97 (4)
e_{AK}	(Pd)			0,341 (25)
	KLL	17,032 - 17,884	}	
	KLX	20,032 - 21,176	}	
	KXY	23,011 - 24,347	}	
e_{AL}	(Cd)	1,8 - 4,0		0,00535 (7)
e_{AK}	(Cd)			0,00084 (5)
	KLL	18,556 - 19,507	}	
	KLX	21,873 - 23,172	}	
	KXY	25,171 - 26,707	}	
$\beta^+_{0,0}$	max:	900	(6)	0,28 (2)
$\beta^+_{0,0}$	avg:	401	(3)	
$\beta^+_{0,1}$	max:	466	(6)	0,0026 (3)
$\beta^+_{0,1}$	avg:	212	(3)	
$\beta^-_{0,1}$	max:	1016	(8)	1,63 (26)
$\beta^-_{0,1}$	avg:	355	(3)	
$\beta^-_{0,0}$	max:	1649	(8)	95,9 (3)
$\beta^-_{0,0}$	avg:	628	(4)	

5 Photon Emissions

5.1 X-Ray Emissions

		Energy keV		Photons per 100 disint.	
$XK\alpha_2$	(Pd)	21,0203		0,44 (3)	} $K\alpha$
$XK\alpha_1$	(Pd)	21,1774		0,84 (6)	}
$XK\beta_3$	(Pd)	23,7914	}		
$XK\beta_1$	(Pd)	23,819	}	0,230 (16)	$K'\beta_1$
$XK\beta_5''$	(Pd)	24,013	}		
$XK\beta_2$	(Pd)	24,2994	}		
$XK\beta_4$	(Pd)	24,344	}	0,0391 (30)	$K'\beta_2$
$XK\alpha_2$	(Cd)	22,9843		0,00127 (6)	} $K\alpha$
$XK\alpha_1$	(Cd)	23,1738		0,00239 (11)	}
$XK\beta_3$	(Cd)	26,0615	}		
$XK\beta_1$	(Cd)	26,0958	}	0,00067 (4)	$K'\beta_1$
$XK\beta_5''$	(Cd)	26,304	}		
$XK\beta_2$	(Cd)	26,644	}		
$XK\beta_4$	(Cd)	26,702	}	0,000121 (7)	$K'\beta_2$

5.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
$\gamma_{4,2}$(Pd)	383,13 (16)	0,00083 (30)
$\gamma_{5,3}$(Pd)	388,36 (7)	0,0017 (6)
$\gamma_{1,0}$(Pd)	433,938 (5)	0,46 (7)
$\gamma_{2,1}$(Pd)	497,13 (12)	0,00152 (40)
$\gamma^{\pm}$	511	0,565 (40)
$\gamma_{3,1}$(Pd)	618,86 (5)	0,245 (39)
$\gamma_{1,0}$(Cd)	632,98 (5)	1,62 (26)
$\gamma_{4,1}$(Pd)	880,26 (10)	0,00298 (48)
$\gamma_{2,0}$(Pd)	931,07 (12)	0,00048 (8)
$\gamma_{5,1}$(Pd)	1007,22 (5)	0,0126 (20)
$\gamma_{6,1}$(Pd)	1106,01 (7)	0,00130 (22)
$\gamma_{5,0}$(Pd)	1441,15 (5)	0,00269 (44)
$\gamma_{6,0}$(Pd)	1539,94 (7)	0,00094 (16)

6 Main Production Modes

Ag – 107(n,γ)Ag – 108
Ag – 107(d,p)Ag – 108

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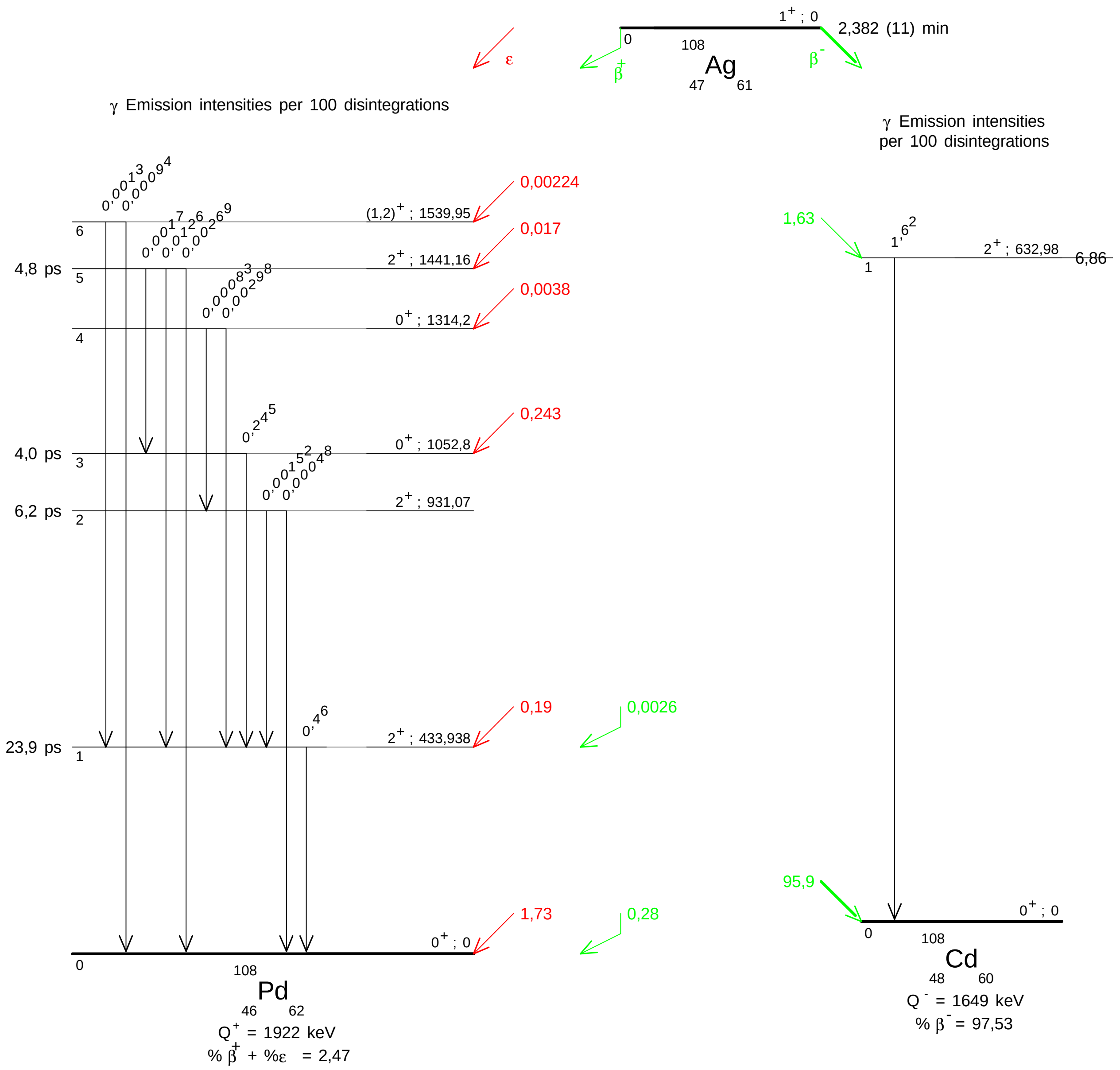
1+ ; 0
2,382 (11) min
108 Ag 47 61
ε
β+
β-
γ Emission intensities per 100 disintegrations
γ Emission intensities per 100 disintegrations
(1,2)+ ; 1539,95
0,00224
2+ ; 1441,16
0,017
0+ ; 1314,2
0,0038
0+ ; 1052,8
0,243
2+ ; 931,07
2+ ; 433,938
0,19
0,0026
0+ ; 0
1,73
0,28
4,8 ps
4,0 ps
6,2 ps
23,9 ps
108 Pd 46 62
Q+ = 1922 keV
% β+ + %ε = 2,47
1,63
2+ ; 632,98
6,86
95,9
0+ ; 0
108 Cd 48 60
Q- = 1649 keV
% β- = 97,53