$^{88}_{39}$Y $_{49}$

1 Decay Scheme

L'yttrium 88 se désintègre par capture électronique et émission bêta plus vers les niveaux excités du strontium 88. Aucune transition (EC/β^+) vers le niveau fondamental du strontium 88 n'a été mise en évidence.

Y-88 decays by electron capture and β^+ emission to excited levels of Sr-88. No (EC/β^+) transition to the ground state of Sr-88 was found.

2 Nuclear Data

$T_{1/2}$(^{88}Y)	:	106,63	(5)	d
Q^+(^{88}Y)	:	3622,6	(15)	keV

2.1 Electron Capture Transitions

	Energy (keV)	Probability (%)	Nature	lg ft	P_K	P_L	P_M
$\epsilon_{0,4}$	37,8 (15)	0,048 (18)	Allowed	7	0,721 (12)	0,225 (10)	0,0542 (25)
$\epsilon_{0,3}$	404,1 (15)	0,023 (4)	Unique 1st Forbidden	9,5	0,8521 (2)	0,1209 (1)	0,02701 (3)
$\epsilon_{0,2}$	888,5 (15)	94,3 (3)	Allowed	6,9	0,8726 (15)	0,1046 (14)	0,0229 (6)
$\epsilon_{0,1}$	1786,5 (15)	5,7 (3)	Unique 1st Forbidden	9,8	0,8393 (3)	0,100085 (4)	0,02206 (8)

2.2 β^+ Transitions

	Energy (keV)	Probability (%)	Nature	lg ft
$\beta^+_{0,1}$	764,5 (15)	0,21 (1)	Unique 1st Forbidden	9,8

2.3 Gamma Transitions and Internal Conversion Coefficients

	Energy (keV)	$P_{\gamma+ce}$ (%)	Multipolarity	α_K (10^{-3})	α_L (10^{-4})	α_M (10^{-5})	α_N (10^{-6})	α_T (10^{-3})	α_π (10^{-4})
$\gamma_{3,2}$(Sr)	484,352 (23)	0,0009 (9)	[E1]	1,079 (16)	1,165 (17)	1,95 (3)	2,45 (4)	1,217 (17)	
$\gamma_{4,2}$(Sr)	850,647 (21)	0,048 (18)	E2	0,754 (11)	0,828 (12)	1,39 (2)	1,739 (25)	0,853 (12)	
$\gamma_{2,1}$(Sr)	898,047 (11)	93,7 (3)	E1(+M2)	0,273 (4)	0,292 (4)	0,489 (7)	0,614 (9)	0,307 (5)	
$\gamma_{3,1}$(Sr)	1382,399 (23)	0,016 (3)	M1+E2	0,255 (4)	0,273 (4)	0,458 (7)	0,577 (8)	0,288 (4)	0,378 (6)
$\gamma_{1,0}$(Sr)	1836,090 (8)	99,385 (25)	E2	0,1449 (21)	0,1550 (22)	0,260 (4)	0,327 (5)	0,163 (2)	2,30 (4)
$\gamma_{2,0}$(Sr)	2734,137 (8)	0,608 (25)	(E3)	0,1098 (16)	0,1176 (17)	0,197 (3)	0,248 (4)	0,124 (2)	4,40 (7)
$\gamma_{3,0}$(Sr)	3218,489 (22)	0,0071 (20)	E2	0,0545 (8)	0,0577 (8)	0,0967 (14)	0,1219 (17)	0,0613 (8)	8,69 (13)

3 Atomic Data

3.1 Sr

ω_K	:	0,696	(4)
$\bar{\omega}_L$	:	0,0262	(7)
n_{KL}	:	1,102	(4)

3.1.1 X Radiations

		Energy (keV)	Relative probability
X_K			
	$K\alpha_2$	14,098	52,05
	$K\alpha_1$	14,1652	100
	$K\beta_3$	15,8252	} 24,69131
	$K\beta_1$	15,8359	}
	$K\beta_5''$	15,969	}
	$K\beta_2$	16,0847	} 3,20987
	$K\beta_4$	16,104	}
X_L			
	$L\ell$	1,5833	
	$L\alpha$	1,8054 - 1,8071	
	$L\eta$	1,6501	
	$L\beta$	1,8722 - 1,9466	
	$L\gamma$	1,9707 - 2,1971	

3.1.2 Auger Electrons

	Energy (keV)	Relative probability
Auger K		
KLL	11,587 - 12,134	100
KLX	13,498 - 14,145	36,7
KXY	15,390 - 16,065	3,37
Auger L	1,2246 - 2,1944	

4 Electron Emissions

		Energy (keV)	Electrons (per 100 disint.)
e_{AL}	(Sr)	1,2246 - 2,1944	103,8 (5)
e_{AK}	(Sr)		
	KLL	11,587 - 12,134	26,5 (4)
	KLX	13,498 - 14,145	
	KXY	15,390 - 16,065	
$ec^{\pm}_{1,0}$	(Sr)	814,072 (8)	0,02285 (40)
$ec_{2,1\ T}$	(Sr)	881,942 - 898,045	0,02877 (48)
$ec^{\pm}_{2,0}$	(Sr)	1712,094 (8)	0,000268 (12)
$ec_{1,0\ T}$	(Sr)	1819,99 - 1836,09	0,0162 (2)
$\beta^+_{0,1}$	max:	764,5 (15)	0,21 (1)
	avg:	359,5 (7)	

5 Photon Emissions

5.1 X-Ray Emissions

		Energy (keV)	Photons (per 100 disint.)		
XL	(Sr)	1,5833 - 2,1971	2,76 (5)		
$XK\alpha_2$	(Sr)	14,098	17,55 (16)		$K\alpha$
$XK\alpha_1$	(Sr)	14,1652	33,71 (26)		
$XK\beta_3$	(Sr)	15,8252			
$XK\beta_1$	(Sr)	15,8359		8,32 (10)	$K'\beta_1$
$XK\beta''_5$	(Sr)	15,969			
$XK\beta_2$	(Sr)	16,0847		1,08 (4)	$K'\beta_2$
$XK\beta_4$	(Sr)	16,104			

5.2 Gamma Emissions

	Energy (keV)	Photons (per 100 disint.)
$\gamma_{3,2}$(Sr)	484,352 (23)	0,0009 (9)
$\gamma^{\pm}$	511	0,46 (3)
$\gamma_{4,2}$(Sr)	850,643 (21)	0,048 (18)
$\gamma_{2,1}$(Sr)	898,042 (11)	93,7 (3)
$\gamma_{3,1}$(Sr)	1382,387 (23)	0,016 (3)
$\gamma_{1,0}$(Sr)	1836,070 (8)	99,346 (25)
$\gamma_{2,0}$(Sr)	2734,092 (8)	0,608 (25)
$\gamma_{3,0}$(Sr)	3218,426 (22)	0,0071 (20)

6 Main Production Modes

$$\begin{cases} \text{Sr} - 88(\text{p,n})\text{Y} - 88 \\ \text{Possible impurities: Y} - 84,\ \text{Y} - 85,\ \text{Y} - 86,\ \text{Y} - 87,\ \text{Rb} - 83,\ \text{Rb} - 84,\ \text{Rb} - 86 \end{cases}$$

$$\begin{cases} \text{Sr} - 88(\text{d,2n})\text{Y} - 88 \\ \text{Possible impurities: Y} - 84,\ \text{Y} - 87,\ \text{Sr} - 89 \end{cases}$$

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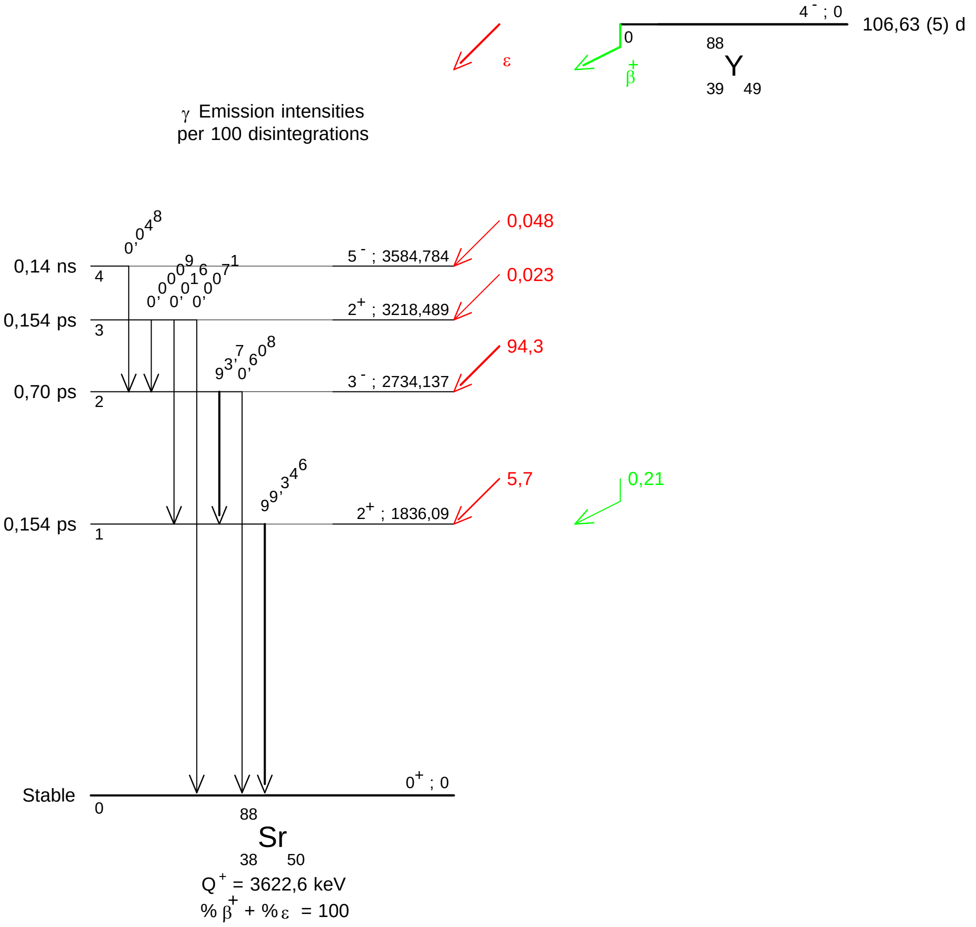

4 - ; 0
106,63 (5) d
0
88
Y
39 49
ε
β+
γ Emission intensities
per 100 disintegrations
0,14 ns
0,154 ps
0,70 ps
0,154 ps
Stable
5 - ; 3584,784
2+ ; 3218,489
3 - ; 2734,137
2+ ; 1836,09
0+ ; 0
0,048
0,023
94,3
5,7
0,21
0,048
0,09
0,016
0,071
93,7
0,608
99,346
88
Sr
38 50
Q+ = 3622,6 keV
% β+ + % ε = 100