$^{95}_{41}\mathrm{Nb}_{54}$

1 Decay Scheme

Nb-95 disintegrates mainly to the 765 keV excited level of Mo-95. The beta minus transition to the 204 keV excited level has not been surely established.

Le Nb-95 se désintègre principalement vers le niveau de 765 keV de Mo-95. Une transition bêta moins vers le niveau de 204 keV n'a pas été établie avec certitude.

2 Nuclear Data

$T_{1/2}(^{95}\mathrm{Nb}\ )$: 34,991 (6) d
$Q^-(^{95}\mathrm{Nb}\ )$: 925,6 (5) keV

2.1 β^- Transitions

	Energy keV	Probability × 100	Nature	lg ft
$\beta^-_{0,2}$	159,8 (5)	99,970 (6)	Allowed	5,09
$\beta^-_{0,1}$	721,5 (5)		Unique 2nd Forbidden	
$\beta^-_{0,0}$	925,6 (5)	0,030 (5)	2nd Forbidden	11,2

2.2 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	$P_{\gamma+ce}$ × 100	Multipolarity	α_K	α_L	α_T
$\gamma_{1,0}$(Mo)	204,117 (2)	0,029 (8)	M1+28%E2	0,045 (3)	0,0058 (4)	0,0515 (22)
$\gamma_{2,1}$(Mo)	561,88 (2)	0,015 (3)	[E2]	0,00298 (9)	0,000354 (11)	0,00341 (10)
$\gamma_{2,0}$(Mo)	765,806 (6)	99,955 (7)	M1+2%E2	0,00129 (4)	0,000145 (4)	0,00147 (4)

3 Atomic Data

3.1 Mo

ω_K : 0,767 (4)
$\bar{\omega}_L$: 0,0381 (9)
n_{KL} : 1,029 (4)

3.1.1 X Radiations

		Energy keV		Relative probability
X_K				
	$K\alpha_2$	17,374		52,47
	$K\alpha_1$	17,479		100
	$K\beta_3$	19,590	}	
	$K\beta_1$	19,608	}	
	$K\beta_5''$	19,771	}	26,24
	$K\beta_2$	19,965	}	
	$K\beta_4$	19,997	}	4,04
X_L				
	$L\ell$	2,01		
	$L\gamma$	– 2,83		

3.1.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	14,268 – 14,960	100
KLX	16,628 – 17,476	39,7
KXY	18,99 – 19,99	3,94
Auger L	1,856 – 2,860	

4 Electron Emissions

		Energy keV	Electrons per 100 disint.
e_{AL}	(Mo)	1,856 - 2,860	0,143 (4)
e_{AK}	(Mo)		0,0303 (11)
	KLL	14,268 - 14,960	}
	KLX	16,628 - 17,476	}
	KXY	18,99 - 19,99	}
$ec_{1,0\ K}$	(Mo)	184,118 (2)	0,0010 (4)
$ec_{1,0\ L}$	(Mo)	201,252 - 201,597	0,00016 (5)
$ec_{2,1\ K}$	(Mo)	541,88 (2)	0,000045 (9)
$ec_{2,1\ L}$	(Mo)	559,01 - 559,36	
$ec_{2,0\ K}$	(Mo)	745,804 (6)	0,129 (4)
$ec_{2,0\ L}$	(Mo)	762,937 - 763,283	0,0140 (4)
$\beta^-_{0,2}$	max:	159,8 (5)	99,970 (6)
$\beta^-_{0,2}$	avg:	43,36 (15)	
$\beta^-_{0,1}$	max:	721,5 (5)	
$\beta^-_{0,1}$	avg:	283,58 (20)	
$\beta^-_{0,0}$	max:	925,6 (5)	0,030 (5)
$\beta^-_{0,0}$	avg:	321,94 (21)	

5 Photon Emissions

5.1 X-Ray Emissions

		Energy keV		Photons per 100 disint.	
XL	(Mo)	2,01 — 2,83		0,0055 (9)	
$XK\alpha_2$	(Mo)	17,374		0,0286 (9)	} $K\alpha$
$XK\alpha_1$	(Mo)	17,479		0,0546 (17)	}
$XK\beta_3$	(Mo)	19,590	}		
$XK\beta_1$	(Mo)	19,608	}	0,0143 (5)	$K'\beta_1$
$XK\beta''_5$	(Mo)	19,771	}		
$XK\beta_2$	(Mo)	19,965	}		
$XK\beta_4$	(Mo)	19,997	}	0,00220 (11)	$K'\beta_2$

5.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
$\gamma_{1,0}$(Mo)	204,117 (2)	0,028 (8)
$\gamma_{2,1}$(Mo)	561,88 (2)	0,015 (3)
$\gamma_{2,0}$(Mo)	765,803 (6)	99,808 (7)

6 Main Production Modes

{ Separation from Zr-95 – Nb-95
{ Possible impurities : Zr − 95

Zr − 96(p,2n)Zr − 95

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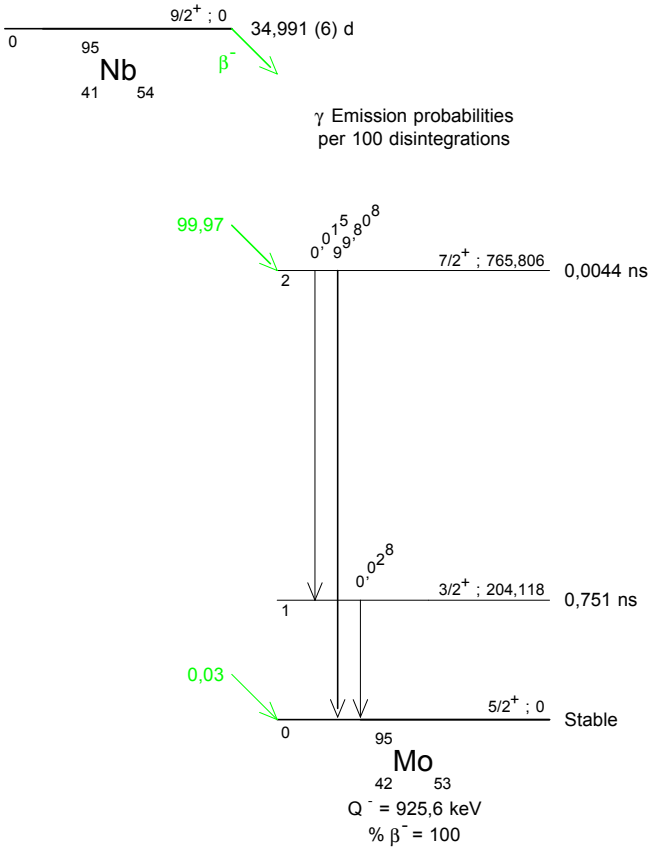
$^{95}_{41}Nb_{54}$


9/2+ ; 0
34,991 (6) d
0
95
Nb
41 54
β-
γ Emission probabilities
per 100 disintegrations
99,97
0,0158
0,0199
7/2+ ; 765,806
0,0044 ns
2
0,0288
3/2+ ; 204,118
0,751 ns
1
0,03
5/2+ ; 0
Stable
0
95
Mo
42 53
Q - = 925,6 keV
% β- = 100