$^{95}_{41}$Nb$^{m}_{54}$

1 Decay Scheme

Nb-95m disintegrates for 2,5% to Mo-95 excited levels and for 97,5% to the Nb-95 ground state.

Le Nb-95m se désintègre pour 2,5% vers des niveaux excités du Mo-95 et se désexcite dans une proportion de 97,5% vers le niveau fondamental du Nb-95 ($T_{1/2}$ = 34,99 jours).

2 Nuclear Data

$T_{1/2}(^{95}Nb^{m})$	:	3,61	(3)	d
$T_{1/2}(^{95}Nb)$	:	34,991	(6)	d
$Q^{-}(^{95}Nb^{m})$	:	1161,3	(5)	keV

2.1 β^- Transitions

	Energy keV	Probability × 100	Nature	lg ft
$\beta^-_{0,4}$	122,0 (5)	0,000025 (25)	1st Forbidden	10,2
$\beta^-_{0,3}$	340,7 (5)	0,00038	1st Forbidden	10,6
$\beta^-_{0,2}$	375,1 (5)	0,016	1st Forbidden	9,1
$\beta^-_{0,1}$	957,2 (5)	2,4 (1)	1st Forbidden	8,3

2.2 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	$P_{\gamma+ce}$ × 100	Multipolarity	α_K	α_L	α_M	α_T
$\gamma_{1,0}$(Mo)	204,117 (2)	2,4 (1)	M1+38%E2	0,045 (3)	0,0058 (4)		0,0515 (22)
$\gamma_{1,0}$(Nb)	235,69 (2)	97,5 (1)	M4	2,31 (8)	0,468 (14)	0,10	2,88 (9)
$\gamma_{2,0}$(Mo)	786,19 (1)	0,016 (1)	E2				0,00131 (5)
$\gamma_{3,0}$(Mo)	820,61 (1)	0,00038	M1+E2				
$\gamma_{4,1}$(Mo)	835,13 (1)	0,000025					

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	

3.2 Nb

ω_K	:	0,751	(4)
$\bar{\omega}_L$	:	0,0347	(9)
n_{KL}	:	1,045	(4)

3.2.1 X Radiations

		Energy keV		Relative probability
X_K				
	$K\alpha_2$	16,521		52,36
	$K\alpha_1$	16,615		100
	$K\beta_3$	18,607	}	
	$K\beta_1$	18,623	}	
	$K\beta_5''$	18,780	}	25,87
	$K\beta_2$	18,952	}	
	$K\beta_4$	18,982	}	3,88
X_L				
	$L\ell$	1,90		
	$L\gamma$	– 2,66		

3.2.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	13,49 – 14,14	100
KLX	15,79 – 16,58	39,1
KXY	18,02 – 18,91	3,81
Auger L	1,4 – 2,6	

4 Electron Emissions

		Energy keV		Electrons per 100 disint.
e_{AL}	(Mo)	1,856 - 2,860		
e_{AK}	(Mo)			
	KLL	14,268 - 14,960	}	
	KLX	16,628 - 17,476	}	
	KXY	18,99 - 19,99	}	
e_{AL}	(Nb)	1,4 - 2,6		69,9 (25)
e_{AK}	(Nb)			14,5 (7)
	KLL	13,49 - 14,14	}	
	KLX	15,79 - 16,58	}	
	KXY	18,02 - 18,91	}	
$ec_{1,0\ K}$	(Mo)	184,12 (1)		0,105 (5)
$ec_{1,0\ L}$	(Mo)	201,25 - 203,89		0,015 (7)
$ec_{1,0\ K}$	(Nb)	216,70 (2)		58,1 (6)
$ec_{1,0\ L}$	(Nb)	232,99 - 233,32		11,8 (3)
$ec_{1,0\ M}$	(Nb)	235,22 - 235,65		2,51 (3)
$\beta^-_{0,4}$	max:	122,0 (5)		0,000025 (25)
$\beta^-_{0,4}$	avg:	44,0 (5)		
$\beta^-_{0,3}$	max:	340,7 (5)		0,00038
$\beta^-_{0,3}$	avg:	123 (1)		
$\beta^-_{0,2}$	max:	375,1 (5)		0,016
$\beta^-_{0,2}$	avg:	123 (1)		
$\beta^-_{0,1}$	max:	957,2 (5)		2,4 (1)
$\beta^-_{0,1}$	avg:	345 (1)		

5 Photon Emissions

5.1 X-Ray Emissions

		Energy keV		Photons per 100 disint.	
XL	(Mo)	2,01 — 2,83			
XKα_2	(Mo)	17,374			} Kα
XKα_1	(Mo)	17,479			}
XKβ_3	(Mo)	19,59	}		
XKβ_1	(Mo)	19,608	}		K$'\beta_1$

		Energy keV		Photons per 100 disint.	
$XK\beta_5''$	(Mo)	19,771	}		
$XK\beta_2$	(Mo)	19,965	}		
$XK\beta_4$	(Mo)	19,997	}		$K'\beta_2$
XL	(Nb)	1,90 — 2,66		0,0251 (11)	
$XK\alpha_2$	(Nb)	16,521		12,5 (6)	} $K\alpha$
$XK\alpha_1$	(Nb)	16,615		23,9 (10)	}
$XK\beta_3$	(Nb)	18,607	}		
$XK\beta_1$	(Nb)	18,623	}	6,19 (27)	$K'\beta_1$
$XK\beta_5''$	(Nb)	18,780	}		
$XK\beta_2$	(Nb)	18,952	}		
$XK\beta_4$	(Nb)	18,982	}	0,93 (5)	$K'\beta_2$

5.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
$\gamma_{1,0}$(Mo)	204,117 (2)	2,28 (10)
$\gamma_{1,0}$(Nb)	235,69 (2)	25,1 (3)
$\gamma_{2,0}$(Mo)	786,19 (1)	0,016 (1)
$\gamma_{3,0}$(Mo)	820,61 (1)	0,00038
$\gamma_{4,1}$(Mo)	835,13 (1)	0,000025

6 Main Production Modes

Separation from Zr-95 – Nb-95, Nb-95m
Possible impurities : Nb-95, Zr-95

7 References

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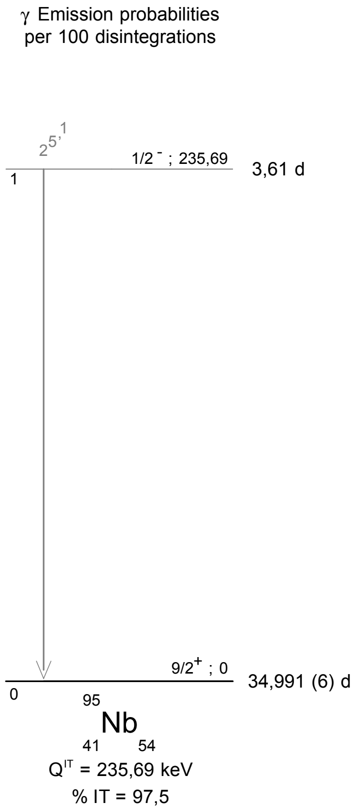
γ Emission probabilities
per 100 disintegrations
251
1/2⁻ ; 235,69
3,61 d
1
9/2⁺ ; 0
34,991 (6) d
0
95 Nb 41 54
QIT = 235,69 keV
% IT = 97,5