



1 Decay Scheme

The Kr-85 disintegrates by beta minus emission mainly to the Rb-85 ground state level.

Le krypton 85 se désintègre par émission bêta moins principalement vers le niveau fondamental de rubidium 85.

2 Nuclear Data

$$T_{1/2}({}^{85}\text{Kr}) : 10,752 \quad (23) \quad \text{a}$$

$$Q^{-}({}^{85}\text{Kr}) : 687,1 \quad (19) \quad \text{keV}$$

2.1 β^{-} Transitions

	Energy keV	Probability $\times 100$	Nature	$\lg ft$
$\beta_{0,2}^{-}$	173,1 (19)	0,438 (10)	Allowed	9,5
$\beta_{0,0}^{-}$	687,1 (19)	99,562 (10)	1st Forbidden Unique	8,4

2.2 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	$P_{\gamma+ce}$ $\times 100$	Multipolarity	α_K	α_L	α_T
$\gamma_{1,0}(\text{Rb})$	151,18 (3)	0,0000023 (14)	M1 + 0,52(4)% E2	0,0430 (13)	0,00485 (14)	0,0488 (14)
$\gamma_{2,1}(\text{Rb})$	362,81 (3)	0,00000225 (45)	(E3)	0,0292 (9)	0,00400 (12)	0,034 (1)
$\gamma_{2,0}(\text{Rb})$	513,998 (5)	0,438 (10)	M2	0,00635 (19)	0,00072 (2)	0,00721 (22)

3 Atomic Data

3.1 Rb

ω_K	:	0,674	(4)
$\bar{\omega}_L$:	0,0237	(6)
n_{KL}	:	1,125	(4)

3.1.1 X Radiations

	Energy keV	Relative probability		
X _K	K α_2	13,3359	51,95	
	K α_1	13,3955	100	
	K β_3	14,9519	}	
	K β_1	14,9614		
	K β_5''	15,085	}	24,34
	K β_2	15,1856		
	K β_4	15,205	}	2,82

3.1.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	10,987 – 11,503	100
KLX	12,782 – 13,381	35,8
KXY	14,556 – 15,172	3,2
Auger L	1,1 – 2,0	

4 Electron Emissions

		Energy keV		Electrons per 100 disint.
e _{AL}	(Rb)	1,1	- 2,0	0,00336 (6)
e _{AK}	(Rb)			0,000901 (24)
	KLL	10,987	- 11,503	}
	KLX	12,782	- 13,381	}
	KXY	14,556	- 15,172	}
$\beta_{0,2}^-$	max:	173,1	(19)	0,438 (10)
$\beta_{0,2}^-$	avg:	47,5	(6)	
$\beta_{0,0}^-$	max:	687,1	(19)	99,562 (10)
$\beta_{0,0}^-$	avg:	251,4	(8)	

5 Photon Emissions

5.1 X-Ray Emissions

		Energy keV		Photons per 100 disint.
XK α_2	(Rb)	13,3359		0,000540 (14) } K α
XK α_1	(Rb)	13,3955		0,001040 (25) }
XK β_3	(Rb)	14,9519	}	
XK β_1	(Rb)	14,9614	}	0,000253 (7) K' β_1
XK β_5''	(Rb)	15,085	}	
XK β_2	(Rb)	15,1856	}	
XK β_4	(Rb)	15,205	}	0,0000294 (13) K' β_2

5.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
$\gamma_{1,0}$ (Rb)	151,18 (3)	0,0000022 (13)
$\gamma_{2,1}$ (Rb)	362,81 (4)	0,00000218 (44)
$\gamma_{2,0}$ (Rb)	513,997 (5)	0,435 (10)

6 Main Production Modes

- Kr – 84(n,γ)Kr – 85 σ : 0,042 (4) barns
- Kr – 84(n,γ)Kr – 85m σ : 0,090 (13) barns
- { Kr – 85m(I.T.)Kr – 85
- { Possible impurities : Half – life(Kr – 85m) = 4,48h
- { Fission products
- { Possible impurities : None

7 References

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