$^{44}_{22}\mathrm{Ti}_{22}$

1 Decay Scheme

Ti-44 disintegrates 100% by electron capture to excited levels in Sc-44 ($T_{1/2} = 3.93$ h), which subsequently decays by EC and beta plus to Ca-44.
Le titane 44 se désintègre à 100% par capture électronique vers des niveaux excités du scandium 44; lequel décroît ($T_{1/2}$ = 3,93 h) par capture électronique et émission bêta plus vers le calcium 44.

2 Nuclear Data

$T_{1/2}(^{44}\mathrm{Ti})$	:	60,0	(11)	a
$T_{1/2}(^{44}\mathrm{Sc})$	:	3,97	(4)	h
$Q^+(^{44}\mathrm{Ti})$	:	267,5	(19)	keV

2.1 Electron Capture Transitions

	Energy keV	Probability × 100	Nature	lg ft	P_K	P_L	P_{M+}
$\epsilon_{0,2}$	121,3 (19)	99,6 (11)	1 st Forbidden	6,5	0,8891 (20)	0,0960 (16)	0,0149 (7)
$\epsilon_{0,1}$	199,6 (19)	0,4 (11)	1 st Forbidden	9,3	0,8917 (19)	0,0938 (16)	0,0145 (7)

2.2 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	$P_{\gamma+ce}$ × 100	Multipolarity	α_K	α_L	α_{M+}	α_T
$\gamma_{1,0}$(Sc)	67,8680 (14)	100,9 (15)	E1	0,0766 (23)	0,00665	0,00125	0,0845 (25)
$\gamma_{2,1}$(Sc)	78,36 (3)	99,5 (11)	M1	0,0273 (8)	0,00244	0,00046	0,032 (1)
$\gamma_{2,0}$(Sc)	146,22 (3)	0,096 (3)	[M2]	0,0414 (12)	0,00385	0,00075	0,046 (1)

3 Atomic Data

3.1 Sc

ω_K : 0,196 (5)
$\bar{\omega}_L$: 0,0027 (6)
n_{KL} : 1,594 (5)

3.1.1 X Radiations

		Energy keV		Relative probability
X_K				
	$K\alpha_2$	4,0862		50,69
	$K\alpha_1$	4,0906		100
	$K\beta_1$	4,4604	}	
	$K\beta''_5$	4,4866	}	20,13
X_L				
	$L\ell$	0,348		
	$L\gamma$	– 0,468		

3.1.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	3,45 – 3,65	100
KLX	3,93 – 4,08	26,4
KXY	4,38 – 4,48	1,74
Auger L	0,3 – 0,5	270

4 Electron Emissions

		Energy keV	Electrons per 100 disint.
e_{AL}	(Sc)	0,3 - 0,5	167,5 (24)
e_{AK}	(Sc)		79,5 (21)
	KLL	3,45 - 3,65	}
	KLX	3,93 - 4,08	}
	KXY	4,38 - 4,48	}
$ec_{1,0\ K}$	(Sc)	63,375 (2)	7,12 (24)
$ec_{1,0\ L}$	(Sc)	67,37 - 67,47	0,621 (21)
$ec_{1,0\ M}$	(Sc)	67,81 - 67,86	0,116 (4)
$ec_{2,1\ K}$	(Sc)	73,83 (3)	2,63 (8)
$ec_{2,1\ L}$	(Sc)	77,82 - 77,92	0,235 (8)

5 Photon Emissions

5.1 X-Ray Emissions

		Energy keV	Photons per 100 disint.	
XL	(Sc)	0,348 — 0,468	0,45 (9)	
$XK\alpha_2$	(Sc)	4,0862	5,76 (18)	} $K\alpha$
$XK\alpha_1$	(Sc)	4,0906	11,4 (4)	}
$XK\beta_1$	(Sc)	4,4604 }	2,26 (8)	$K'\beta_1$
$XK\beta''_5$	(Sc)	4,4866 }		

5.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
$\gamma_{1,0}$(Sc)	67,8679 (14)	93,0 (15)
$\gamma_{2,1}$(Sc)	78,36 (3)	96,4 (11)
$\gamma_{2,0}$(Sc)	146,22 (3)	0,092 (3)

6 Main Production Modes

$\mathrm{Sc-45(p,2n)Ti-44}$

$\mathrm{Sc-45(d,3n)Ti-44}$

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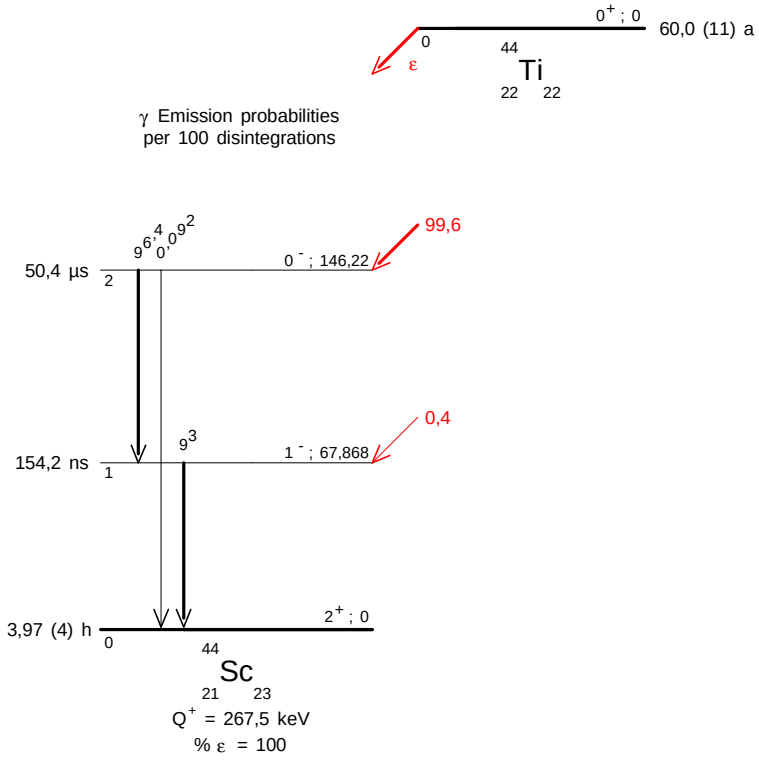
0+ ; 0
60,0 (11) a
0
ε
44
Ti
22 22
γ Emission probabilities
per 100 disintegrations
99,6
50,4 µs
2
0 - ; 146,22
0,4
154,2 ns
1
1 - ; 67,868
3,97 (4) h
0
2+ ; 0
44
Sc
21 23
Q+ = 267,5 keV
% ε = 100