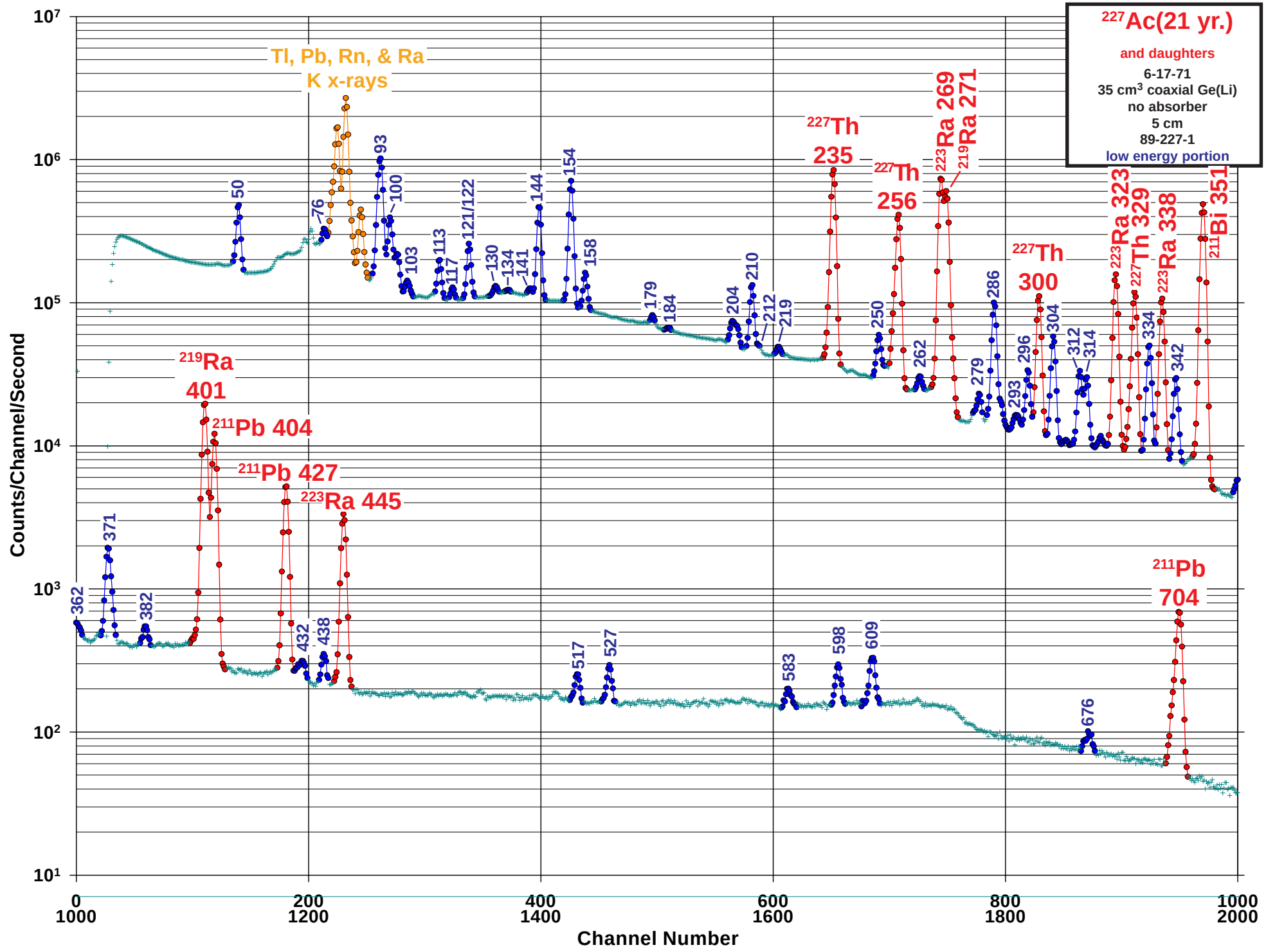


Table of Contents

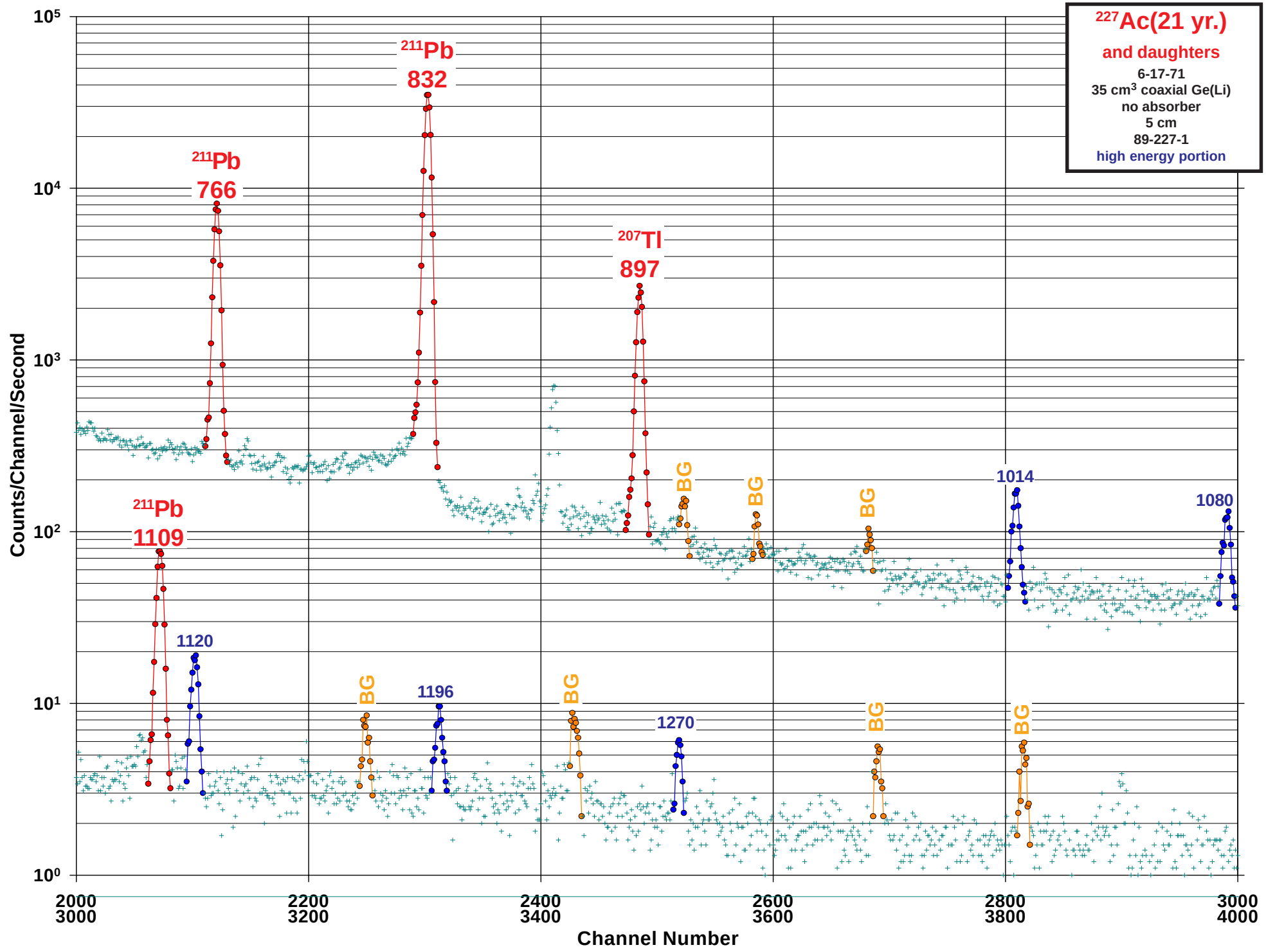
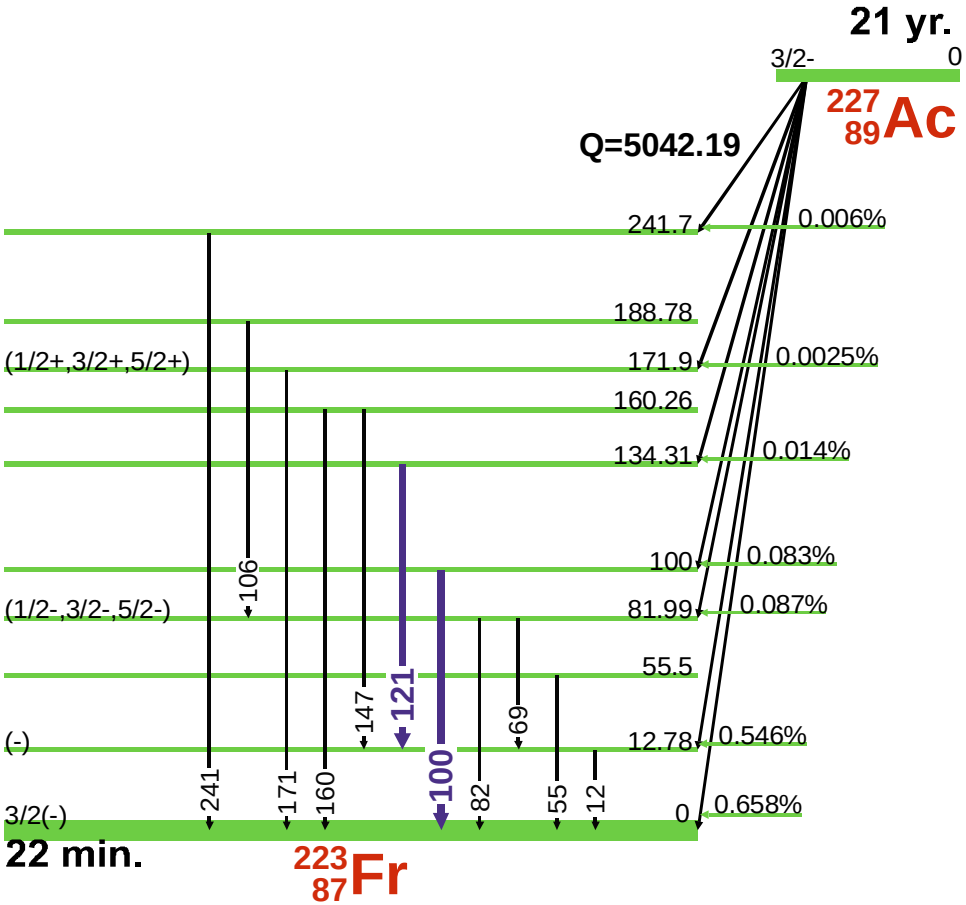
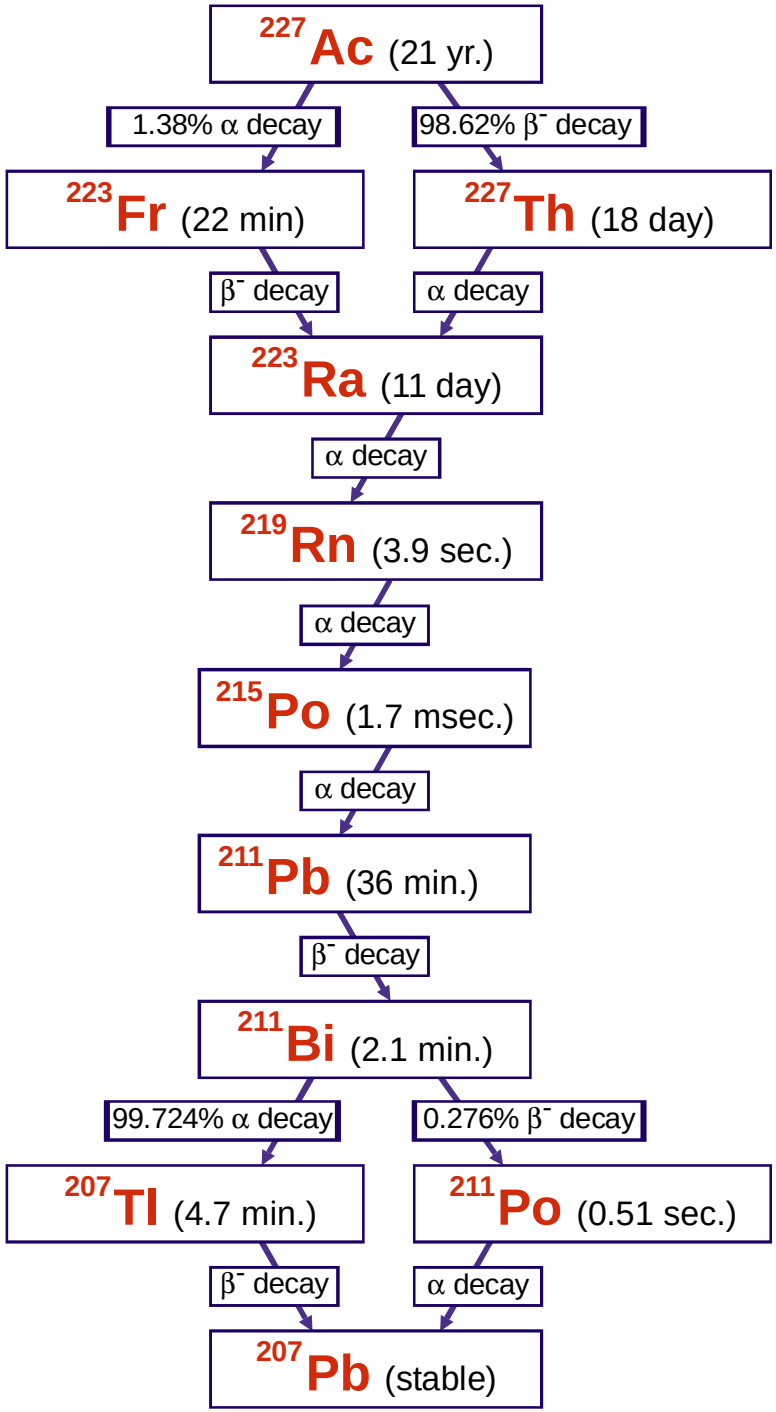


Table of Contents

^{227}Ac(21 yr.) Decay Scheme



^{227}Ac Decay Chain



GAMMA-RAY ENERGIES AND INTENSITIES (page 1 of 2)

Nuclide: ^{227}Ac
Detector: 35 cm^3 coaxial Ge (Li)

E_γ, σE_γ, I_γ, σI_γ - 1998 ENSDF Data

Half Life: 21.773(3) yr.
Method of Production: ^{235}U decay

	E_γ (keV)	σE_γ	I_γ (rel)	I_γ (%)	σI_γ	S
^{227}Ac	12.7					4
^{227}Th	49.89	0.07		0.57	0.19	4
^{223}Fr	49.89	0.07		2.7	1.1	
^{223}Fr	50.104	0.005		36	8	3
^{227}Th	50.13	0.01		8.0	0.9	
^{227}Ac	55.03			0.070	0.021	4
^{227}Ac	69.21	0.04		0.47	0.15	4
	76.99	0.1	4.96		2	4
^{223}Fr	79.651	0.005		9.1	1.9	4
^{227}Th	79.72	0.01		1.89	0.27	
^{227}Ac	82.0			0.090	0.027	4
^{227}Th	93.93	0.08	20	1.37	0.18	3
^{227}Ac	100.0		5	0.66	0.20	3
^{227}Th	100.27	0.03		0.076	0.017	
^{227}Th	102.5		2.5			4
	103.06	0.03			0.5	
^{227}Ac	106.79	0.06		0.10	0.03	4
^{227}Th	113.159	0.02	6	0.148	0.016	3
^{227}Th	113.16	0.02		0.52	0.05	
^{227}Th	117.20	0.05	1.4	0.0170	0.026	4
^{227}Th	117.5	0.5		0.0123	0.0028	
^{227}Ac	121.53	0.04	9	0.15	0.05	3
^{223}Ra	122.319	0.010		1.192	0.022	
^{219}Rn	130.59	0.03	0.6	0.119	0.013	4
^{227}Ac	134.0		0.6		0.3	4
^{227}Th	141.49	0.05	0.65	0.12	0.07	4
^{223}Ra	144.232	0.01	23	3.22	0.08	2
^{227}Ac	147.48	0.04		0.22	0.07	4
^{223}Ra	154.21	0.01	39.8	5.62	0.16	2
^{223}Ra	158.633	0.010	5.5	0.685	0.017	3
^{227}Ac	160.26	0.05		0.42	0.13	4
^{227}Ac	171.90	0.08		0.092	0.029	4
^{223}Ra	179.54	0.05	1.73	0.151	0.014	4

	E_γ (keV)	σE_γ	I_γ (rel)	I_γ (%)	σI_γ	S
^{227}Th	184.65	0.05	0.9	0.038	0.007	4
^{223}Fr	184.68	0.03		0.22	0.04	
^{227}Th	204.27	0.17	4	0.20	0.05	4
^{223}Fr	204.95	0.02		0.95	0.19	
^{227}Th	205.03	0.09		0.15	0.04	4
^{227}Th	206.05	0.05		0.21	0.07	
^{227}Th	210.65	0.05	10	1.11	0.24	3
^{227}Th	212.65	0.04	1	0.06	0.04	4
^{227}Th	212.7	0.3		0.018	0.006	
^{223}Ra	219.0	0.8	1.5	0.014	0.006	4
^{227}Th	219.00	0.13		0.103	0.015	
^{223}Fr	234.800	0.010		3.0	0.6	2
^{227}Th	234.81	0.09		0.40	0.15	
^{227}Th	235.971	0.02	100	12.3	1.6	1
^{227}Ac	241.7	0.2		0.12	0.04	4
^{223}Ra	249.4	0.3		0.038	0.010	4
^{227}Th	250.35	0.05	3	0.086	0.026	3
^{227}Th	250.35	0.05		0.34	0.06	
^{223}Ra	251.1	0.3		0.041	0.014	4
^{223}Ra	251.8	0.1		0.067	0.008	
^{227}Th	256.25	0.02	55	7.0	0.8	1
^{227}Th	262.91	0.09	1	0.095	0.014	4
^{223}Ra	269.459	0.01	97.8	13.7	0.3392	1
^{219}Rn	271.23	0.01	85	10.8	0.7	1
^{227}Th	272.93	0.09		0.48	0.09	4
^{227}Th	279.72	0.09	0.4	0.06	0.04	4
^{227}Th	285.50	0.09		0.048	0.011	4
^{227}Th	286.122	0.02	14	1.54	0.20	2
^{223}Ra	288.18	0.03		0.158	0.005	4
^{223}Fr	289.68	0.05		0.23	0.05	4
^{227}Th	292.41	0.09		0.066	0.020	4
^{219}Rn	293.54	0.04	0.38	0.073	0.006	3
^{223}Ra	293.8	0.2		0.0658	0.0010	

NOTE: ^{227}Th - Multiply I_γ(%) values by 0.9862% to account for branching from ^{227}Ac.
^{223}Fr - Multiply I_γ(%) values by 0.0138% to account for branching from ^{227}Ac.

Table of Contents

GAMMA-RAY ENERGIES AND INTENSITIES (page 2 of 2)

Nuclide: ^{227}Ac

E_γ, σE_γ, I_γ, σI_γ - 1998 ENSDF Data

Half Life: 21.773(3) yr.

Detector: 35 cm^3 coaxial Ge (Li)

Method of Production: ^{235}U decay

	E_γ (keV)	σE_γ	I_γ (rel)	I_γ (%)	σI_γ	S
^{227}Th	296.51	0.05	3.3	0.46	0.08	3
^{227}Th	300.00	0.03	17	0.34	0.06	1
^{227}Th	300.00	0.03		2.3	0.3	
^{227}Th	304.52	0.02		1.2	0.4	2
^{227}Th	312.69	0.09	5	0.48	0.09	4
^{211}Pb	313.59	0.09		0.031	0.004	4
^{227}Th	314.78	0.09	4	0.44	0.08	4
^{223}Fr	319.26	0.02		0.50	0.10	4
^{223}Ra	323.871	0.01	27.5	3.93	0.09	1
^{223}Ra	328.40	0.03		0.206	0.008	4
^{227}Th	329.851	0.02	20.8	2.7	0.4	1
^{223}Ra	333.99	0.05		0.100	0.006	3
^{227}Th	334.381	0.02	8.2	1.05	0.15	2
^{223}Ra	338.281	0.01	19.2	2.79	0.071	1
^{227}Th	342.50	0.09	4.8	0.39	0.10	2
^{223}Ra	342.9	0.04		0.219	0.014	
^{211}Pb	342.91	0.04		0.035	0.005	
^{211}Bi	351.06	0.04	100	12.95	0.11	1
^{223}Ra	362.06	0.02	0.53	0.0452	0.0028	4
^{211}Pb	362.072	0.017		0.0426	0.0026	
^{227}Th	362.50	0.14		0.0047	0.001	
^{223}Ra	371.68	0.02	4	0.479	0.015	2
^{227}Th	382.4	0.4	0.37	0.0062	0.0007	4
^{223}Ra	382.8	0.3		0.014	0.004	
^{227}Th	383.52	0.09		0.047	0.011	4
^{219}Rn	401.81	0.01	45.1	6.4	0.4	1
^{211}Pb	404.853	0.010	28.2	3.78	0.06	1

	E_γ (keV)	σE_γ	I_γ (rel)	I_γ (%)	σI_γ	S
^{211}Pb	427.088	0.010	13.1	1.76	0.04	1
^{223}Ra	432.1	0.1	0.3	0.0343	0.0028	4
^{227}Th	432.33	0.09		0.0047	0.0011	
^{219}Rn	438.2	0.6	0.4	0.0302	0.0017	4
^{215}Po	438.8	0.3		0.04		
^{223}Ra	439.3			0.081	0.014	
^{223}Ra	445.03	0.01	9	1.27	0.05	1
^{219}Rn	517.63	0.06	0.36	0.044	0.003	4
^{223}Ra	527.61	0.01	0.52	0.070	0.004	4
	583	0.07	0.25		0.04	4
^{223}Ra	598.72	0.02	0.57	0.0932	0.0043	4
^{219}Rn	608.3	1.0	0.24	0.0043	0.0022	4
^{223}Ra	609.32	0.04		0.056	0.003	
^{211}Pb	609.38	0.04		0.043	0.006	
^{219}Rn	676.64	0.07	0.18	0.0205	0.0024	4
^{211}Pb	676.69	0.07		0.013	0.004	
^{211}Pb	704.64	0.03	3.3	0.462	0.011	1
^{211}Pb	766.51	0.03	4.7	0.617	0.016	1
^{211}Pb	832.01	0.03	24.1	3.52	0.06	1
^{207}Tl	897.77	0.12	2.1	0.26	0.009	1
^{211}Pb	1014.64	0.05	0.12	0.0173	0.0005	3
^{211}Pb	1080.16	0.06	0.10	0.0123	0.0007	3
^{211}Pb	1109.48	0.05	0.79	0.115	0.004	1
	1120					2
^{211}Pb	1196.33	0.05	0.07	0.0102	0.0004	3
^{211}Pb	1270.71	0.08	0.05	0.0068	0.0005	3

NOTE: **^{227}Th - Multiply I_γ(%) values by 0.9862% to account for branching from ^{227}Ac.**
^{223}Fr - Multiply I_γ(%) values by 0.0138% to account for branching from ^{227}Ac.

Table of Contents