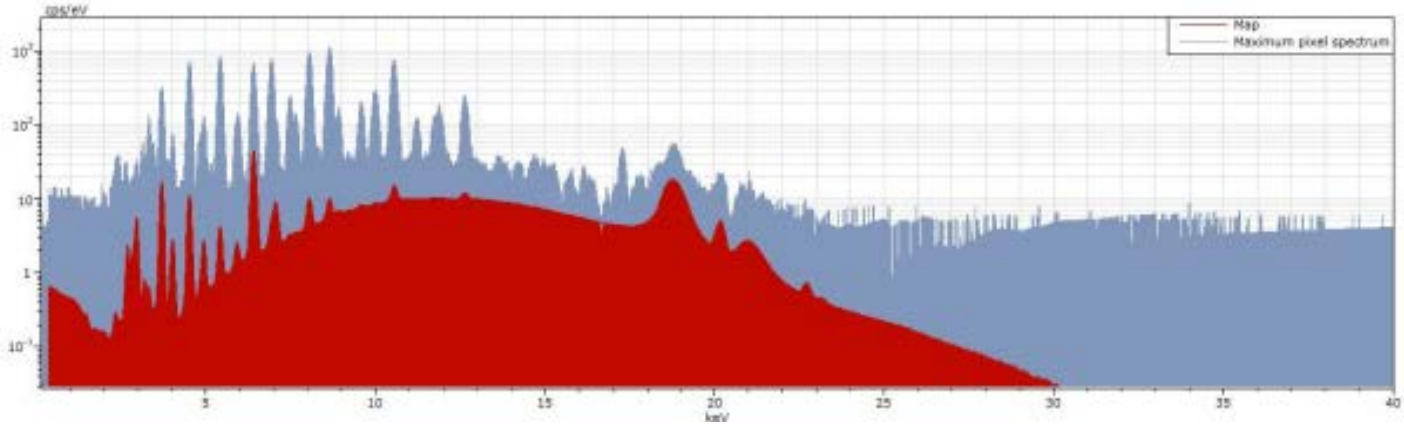
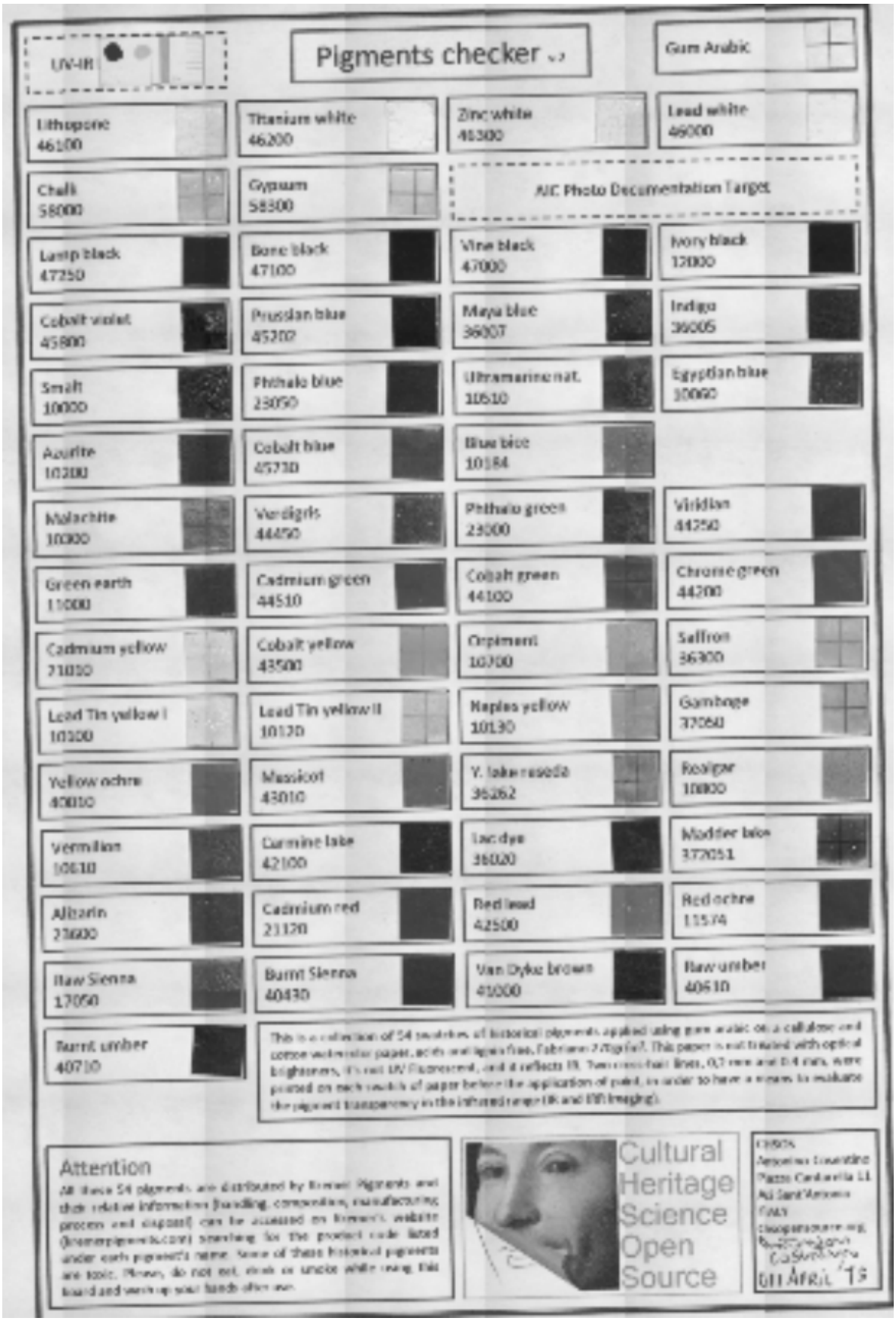
Pigment Checker v.2

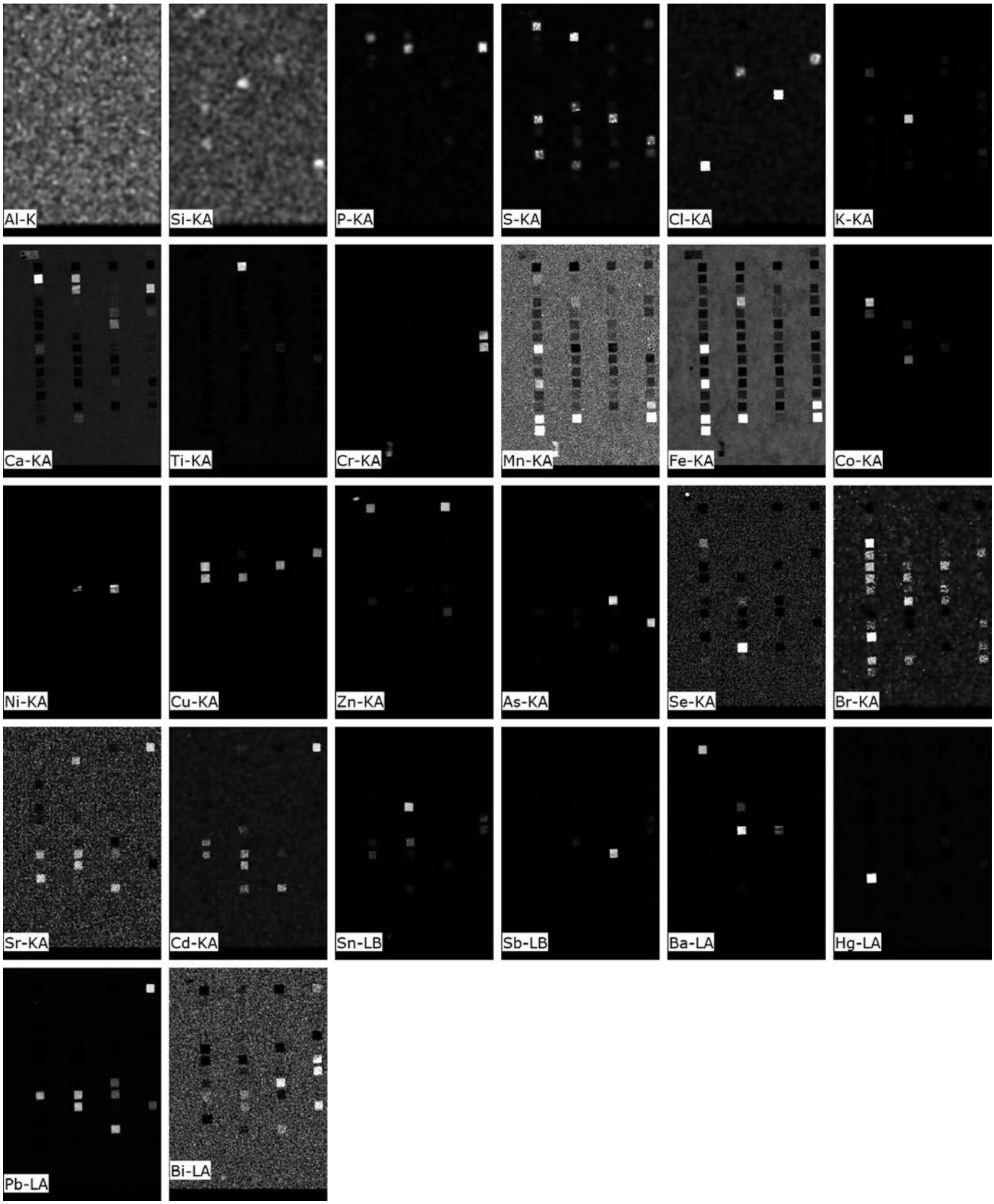
Macro XRF scanning with the Bruker M6 Jetstream

By David Lainé

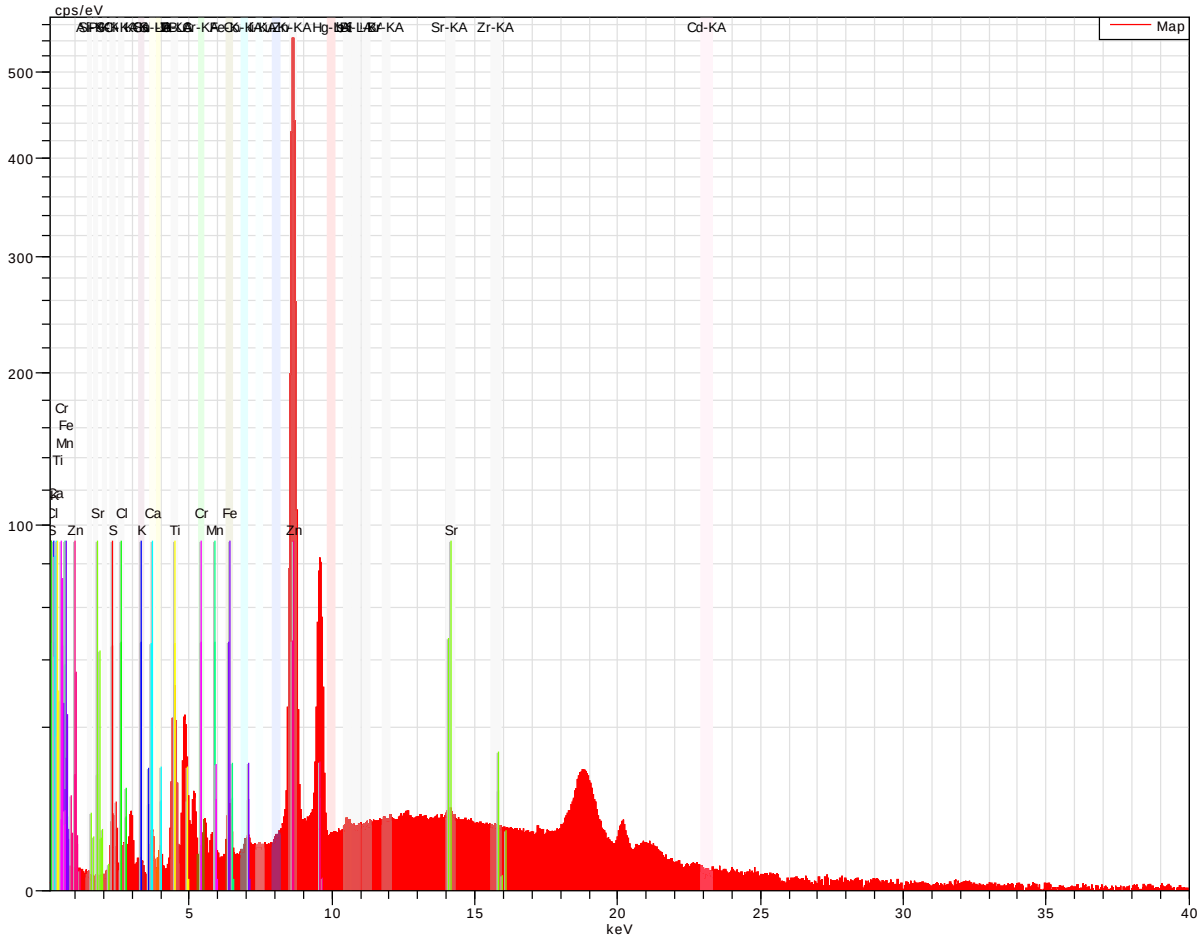


Mapping parameters		
Width:	325	pixel
	178.821	mm
Height:	479	pixel
	263.212	mm
Pixel Size:	550	µm
Total number of pixel:	155675	pixel
Acquisition parameters		
Frame count:	0	
Pixel time:	32	ms/pixel
Measure time:	59	min
Overall time:	1:44	h
Stage speed:	17.2	mm/s
Stage position (X,Y,Z):	281.926;413.441;53.612	mm
Tube parameter		
High voltage:	50	kV
Anode current:	600	µA
Filter:	Empty	
Optic:	Lens	
SpotSize:	550	
Chamber at:	Air 1000	mbar
	---	l/min
Anode:	Rh	
Detector parameters		
Selected detectors:	1	
Max. pulse throughput:	275000	cps





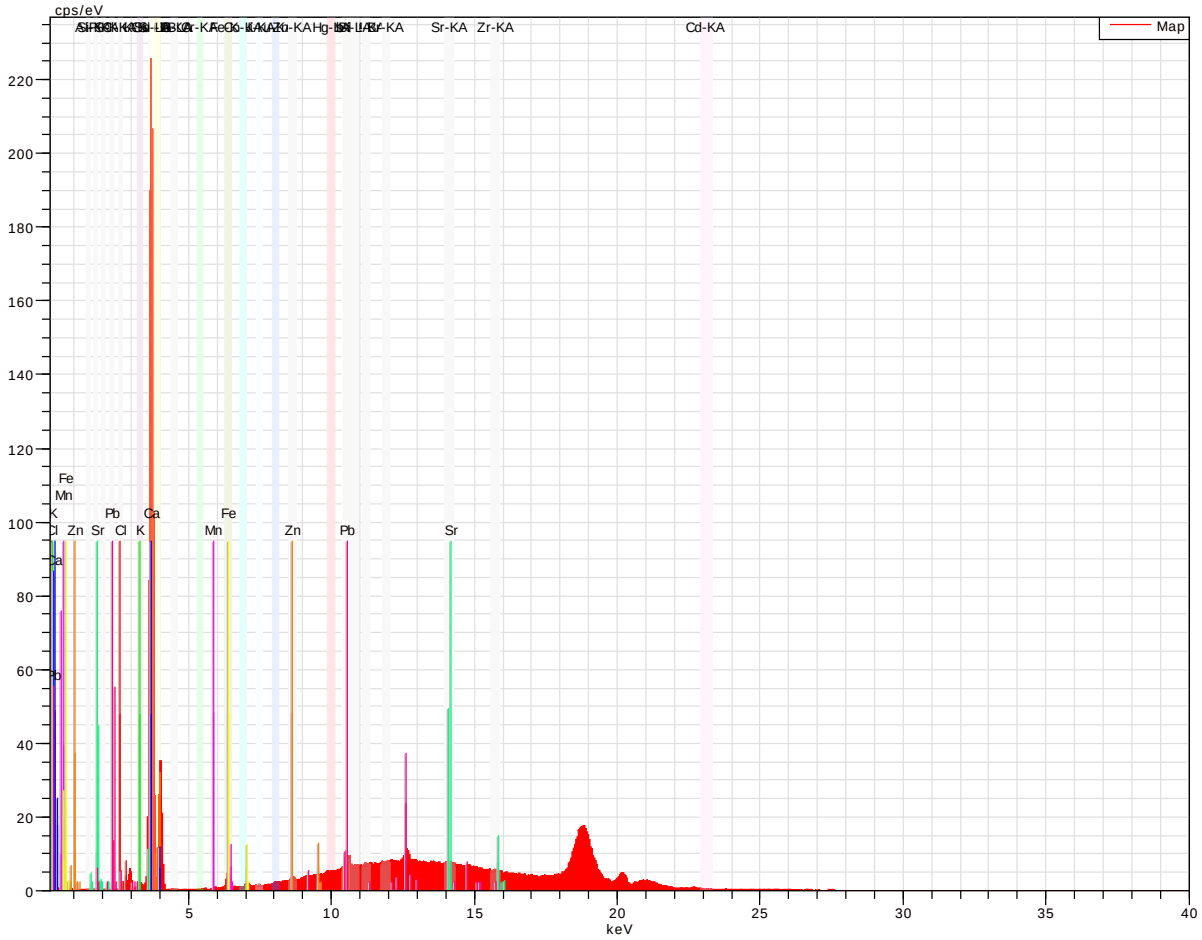
Al-K, Si-KA, P-KA, S-KA, Cl-KA, K-KA, Ca-KA, Ti-KA, Cr-KA, Mn-KA, Fe-KA, Co-KA, Ni-KA, Cu-KA, Zn-KA, As-KA, Se-KA, Br-KA, Sr-KA, Cd-KA, Sn-LB, Sb-LB, Ba-LA, Hg-LA, Pb-LA, Bi-LA,



Lithopone

Spectrum:

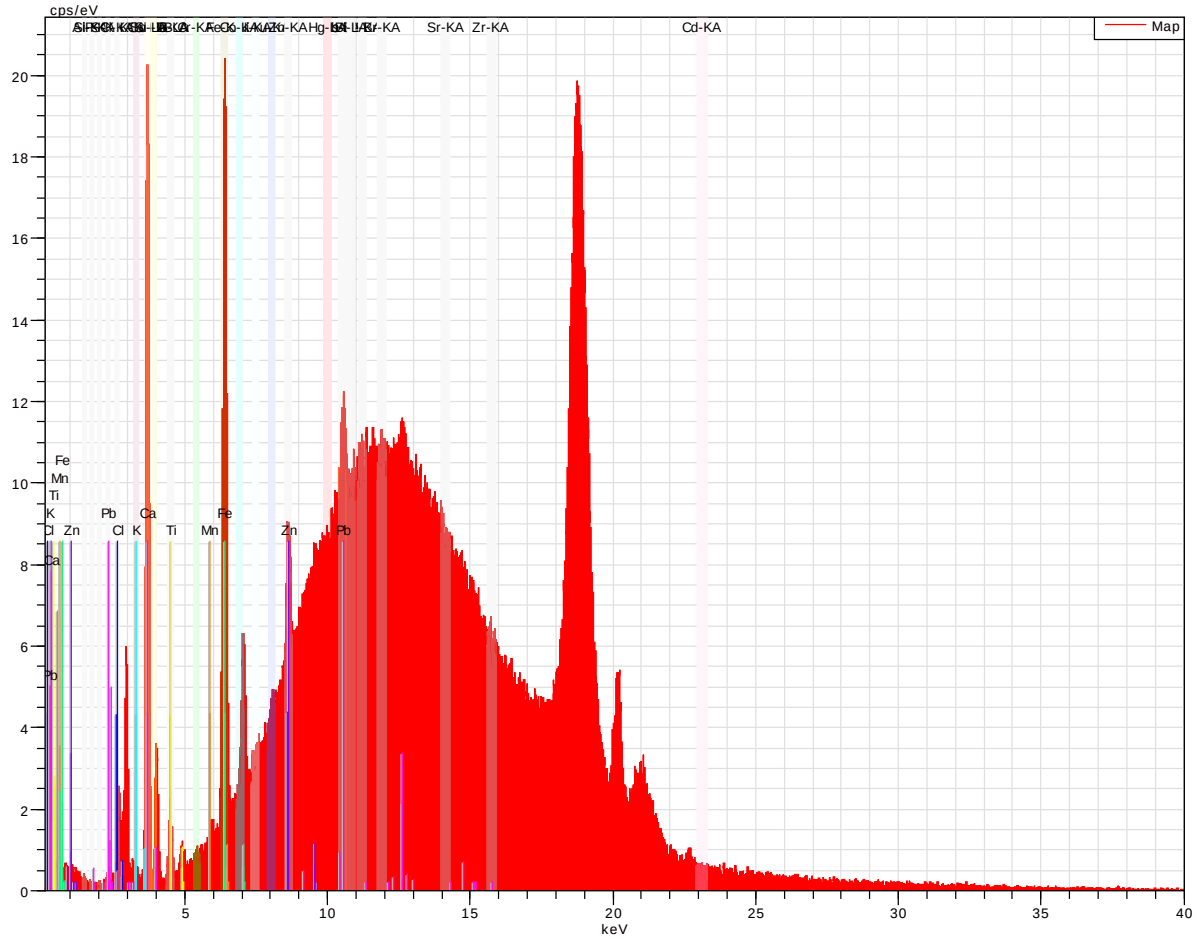
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Zn	30	798908	75.52	63.65
S	16	3176	13.83	23.77
Ti	22	32752	6.85	7.88
Ca	20	2678	1.75	2.41
Sr	38	1626	0.59	0.37
K	19	454	0.50	0.70
Cl	17	178	0.45	0.70
Fe	26	5549	0.38	0.37
Mn	25	1003	0.09	0.09
Cr	24	359	0.04	0.04
		Total:	100.00	100.00



Chalk

Spectrum:

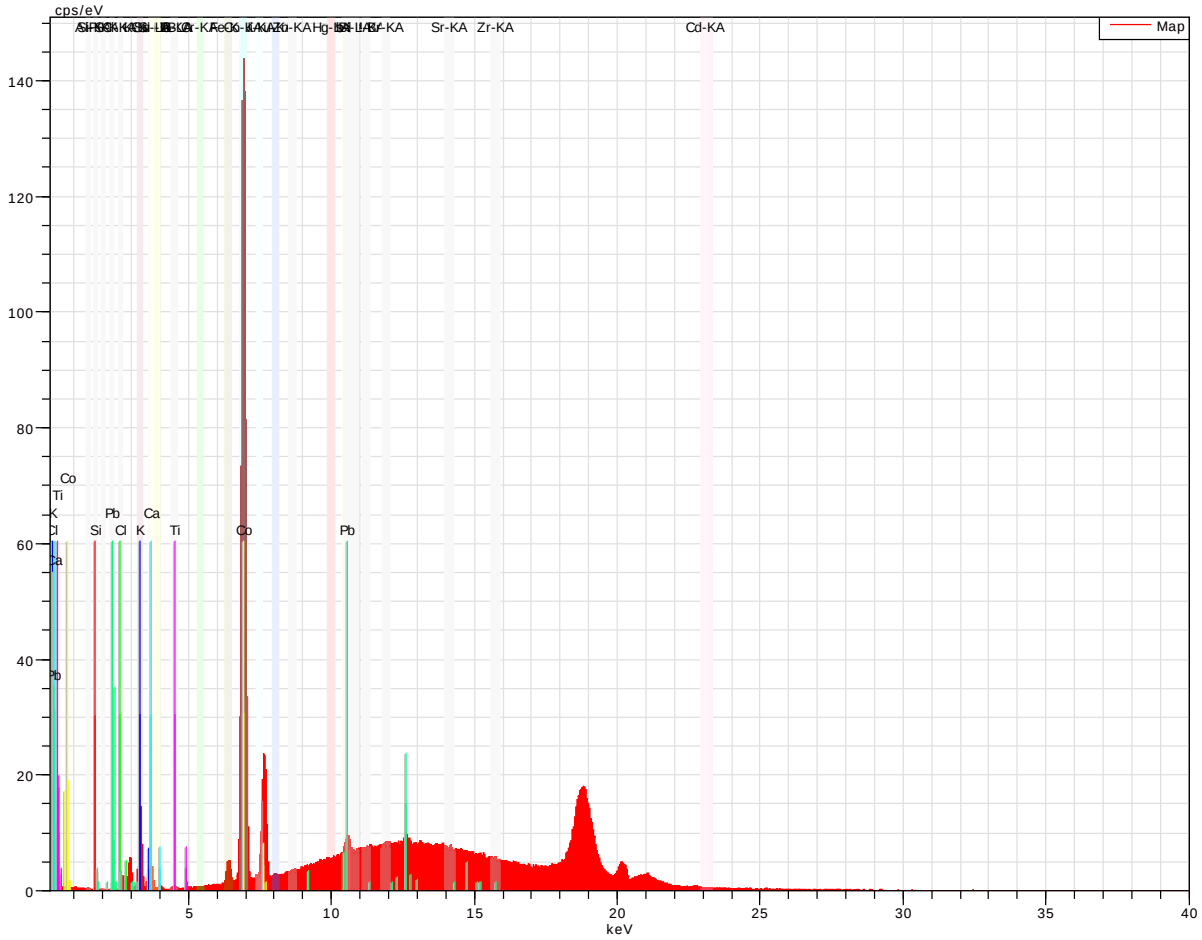
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	199667	97.12	98.70
Pb	82	10054	1.63	0.32
Fe	26	4401	0.67	0.49
K	19	703	0.34	0.35
Sr	38	984	0.13	0.06
Zn	30	715	0.06	0.04
Mn	25	250	0.05	0.04
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Lamp black

Spectrum:

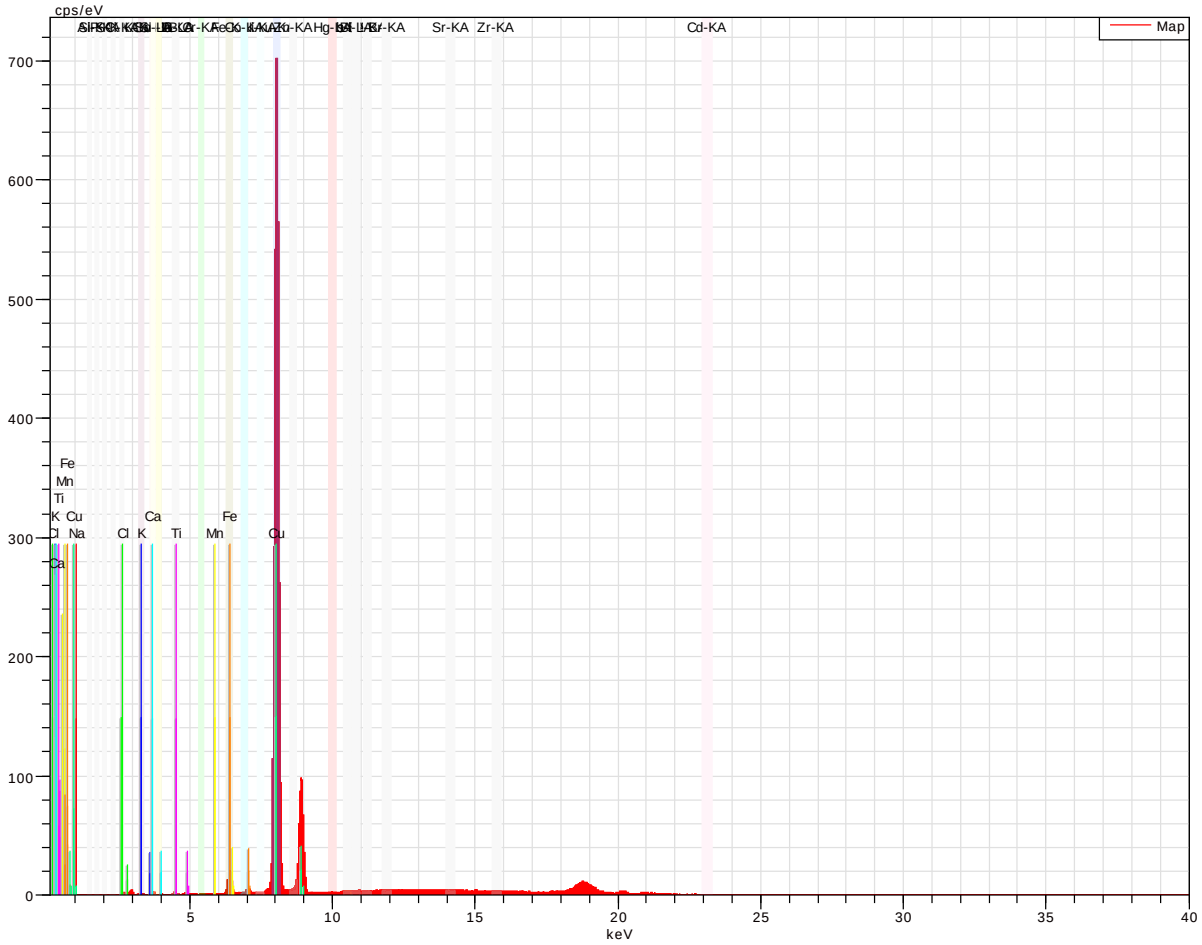
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	17646	66.01	75.22
Fe	26	21265	19.00	15.53
Pb	82	4633	6.03	1.33
Ti	22	2041	5.46	5.21
Zn	30	4018	2.66	1.86
K	19	101	0.48	0.57
Mn	25	317	0.35	0.29
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Smalt

Spectrum:

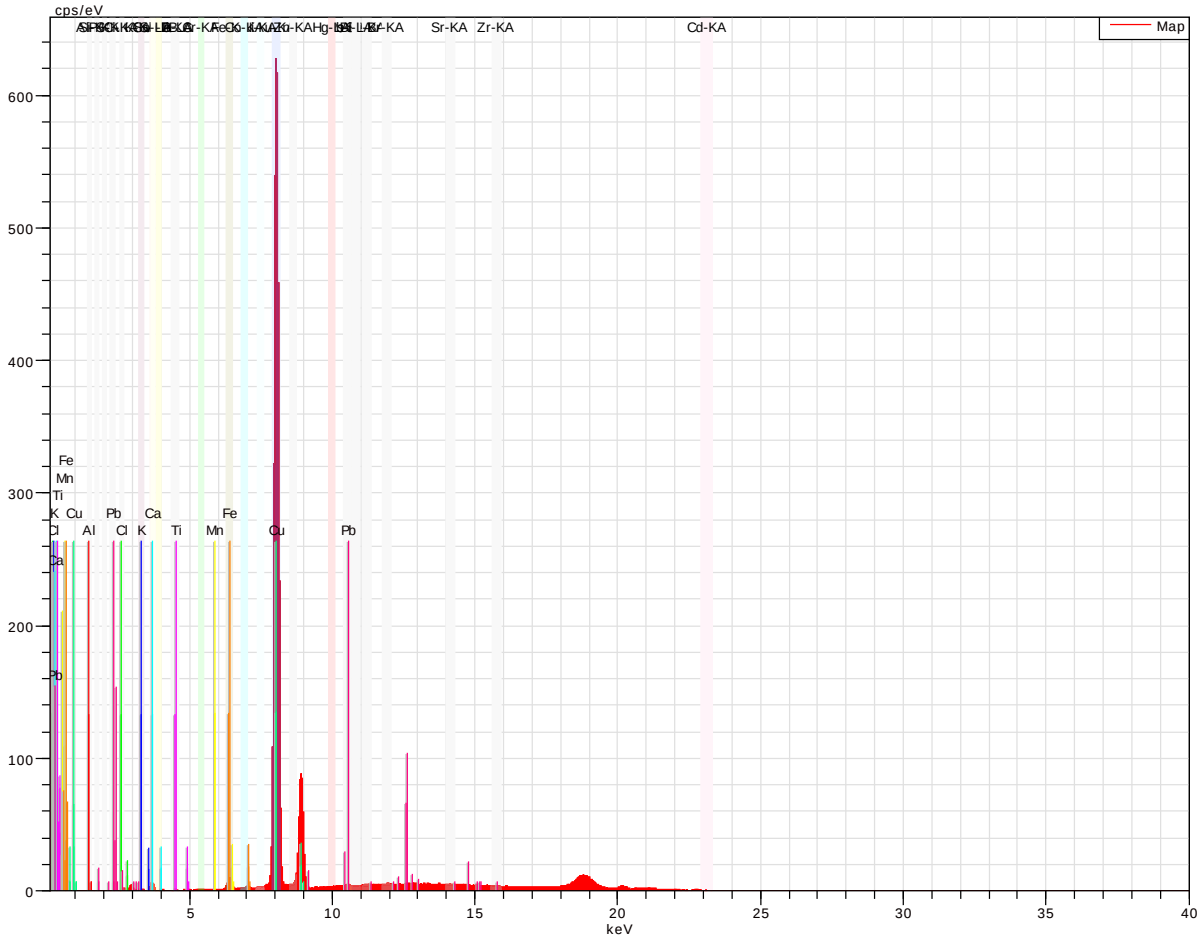
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Co	27	165753	51.48	42.31
K	19	10885	29.57	36.63
Ca	20	3570	8.49	10.27
Si	14	44	5.44	9.39
Pb	82	6165	4.70	1.10
Ti	22	383	0.31	0.31
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Azurite

Spectrum:

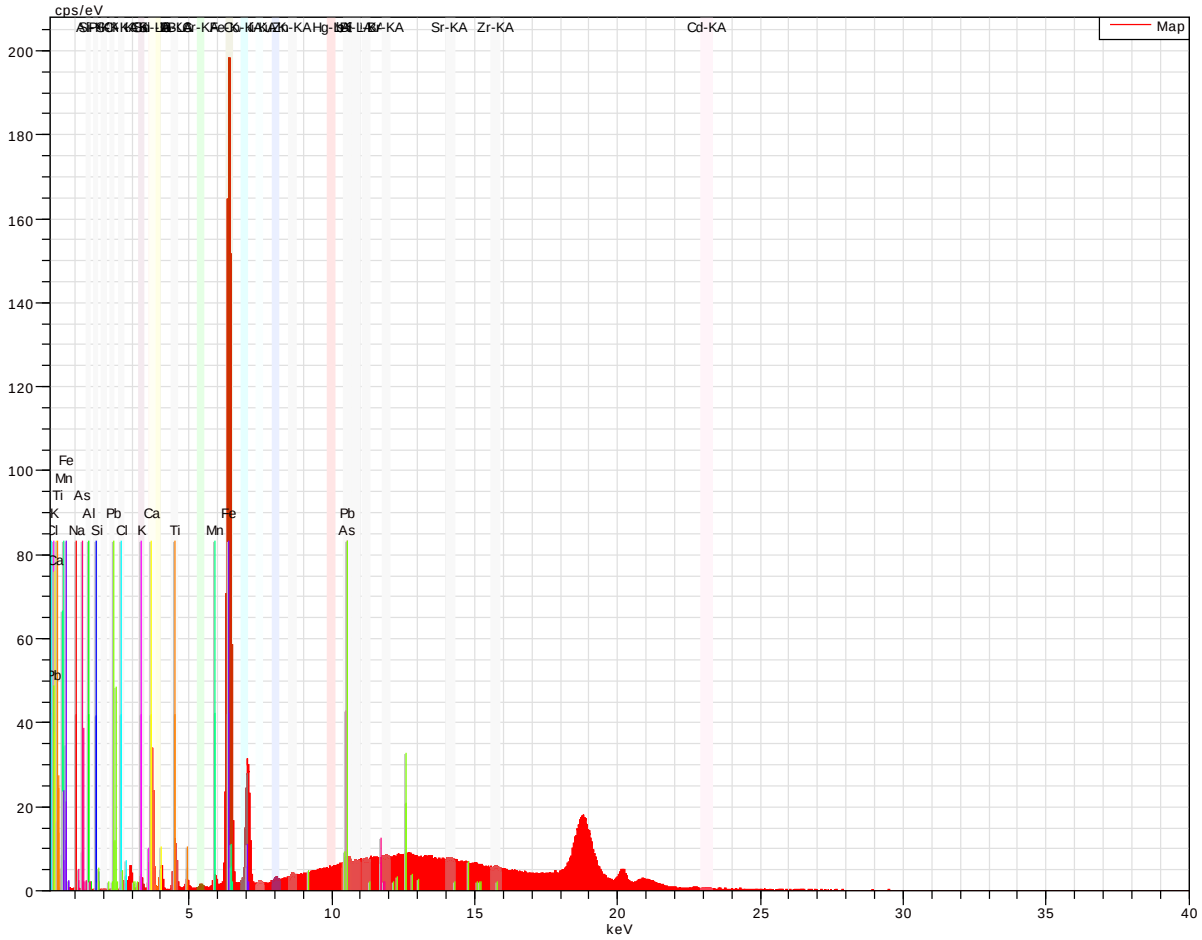
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Cu	29	857686	95.48	93.55
Ca	20	2665	1.57	2.44
Fe	26	21892	1.31	1.46
K	19	715	0.70	1.12
Cl	17	206	0.48	0.85
Ti	22	2352	0.44	0.57
Mn	25	226	0.02	0.02
Na	11	0	0.00	0.00
	Total:		100.00	100.00



Malachite

Spectrum:

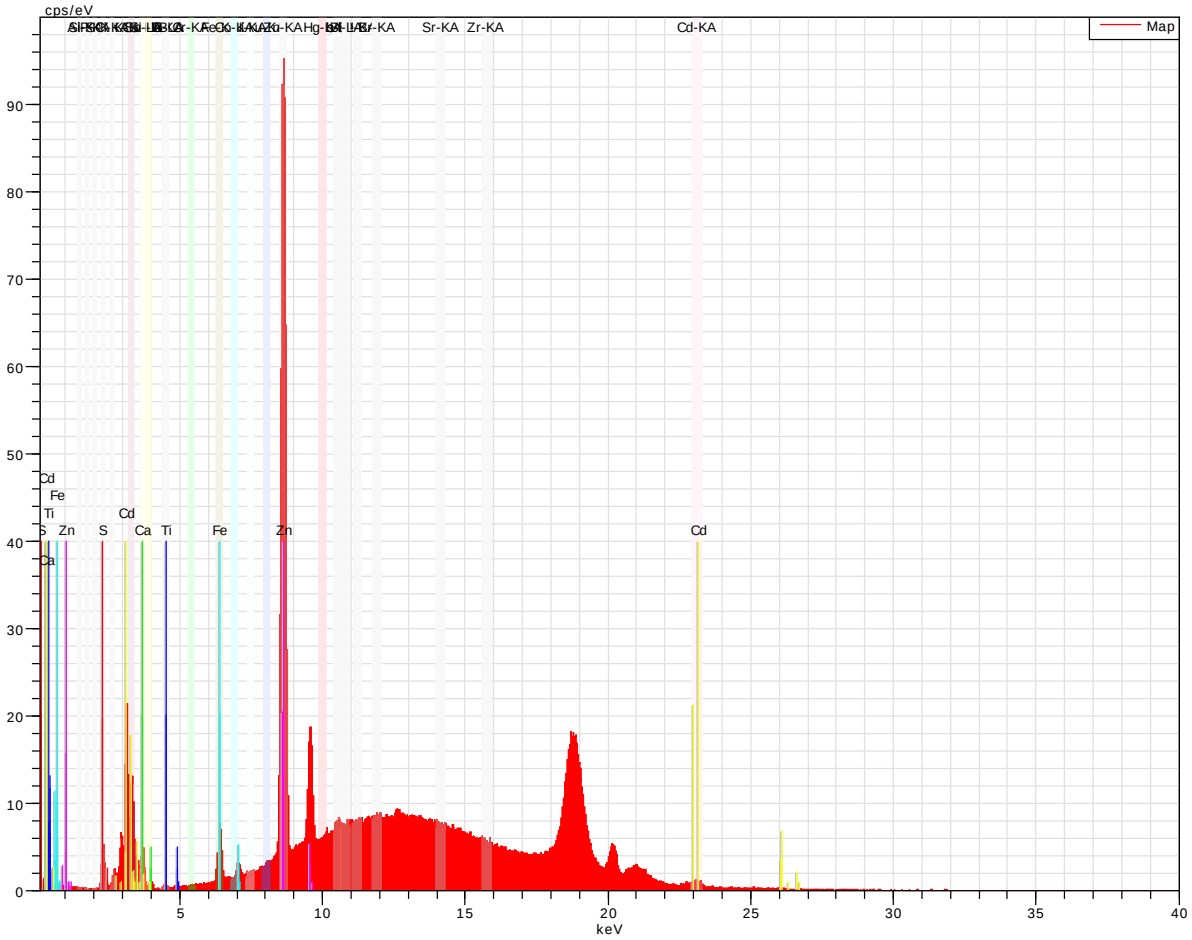
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Cu	29	670729	78.77	63.53
Al	13	22	16.42	31.20
Ca	20	3728	2.67	3.41
K	19	694	0.82	1.08
Pb	82	1359	0.66	0.16
Fe	26	7995	0.57	0.52
Ti	22	287	0.07	0.07
Mn	25	202	0.02	0.02
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Green earth

Spectrum:

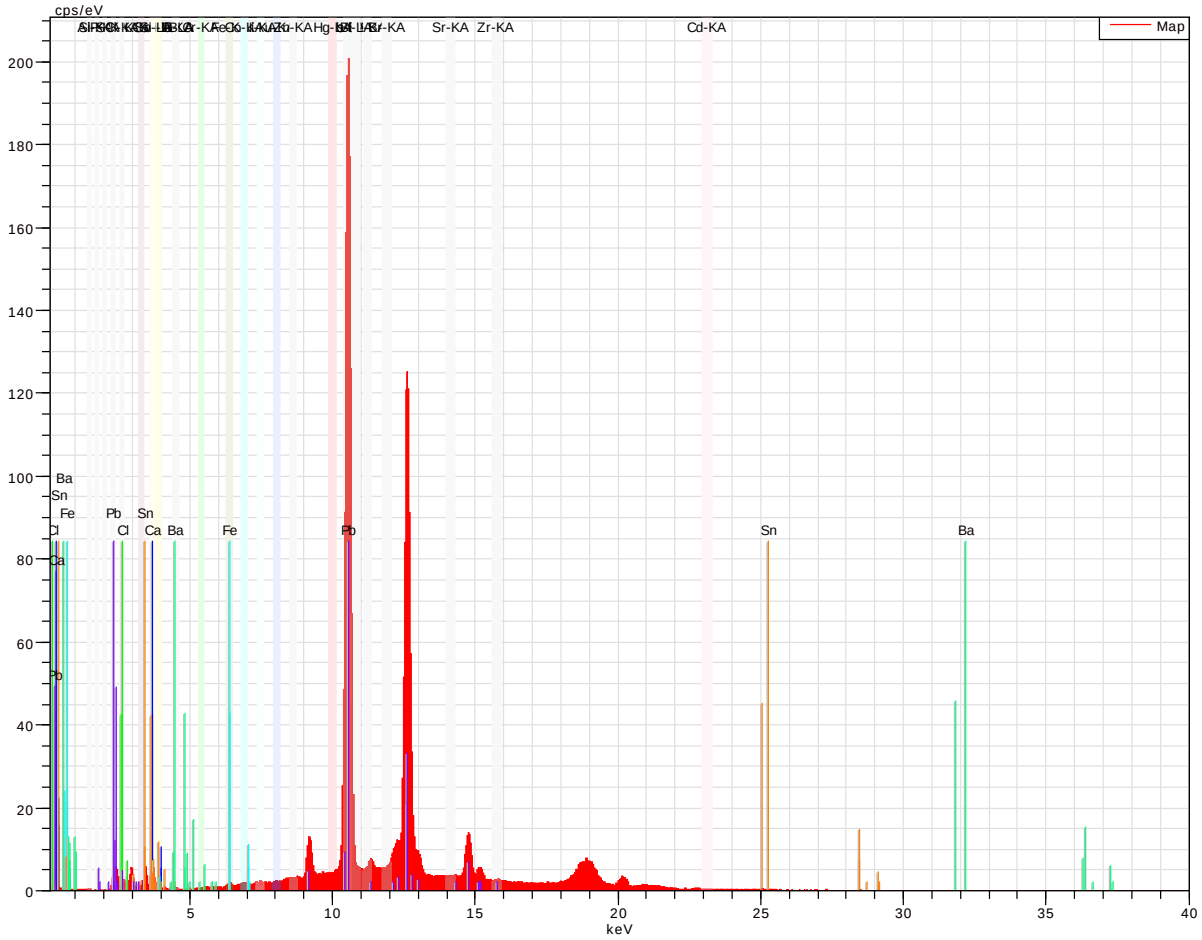
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Fe	26	191656	37.13	26.30
Ca	20	25422	26.06	25.71
Al	13	32	22.22	32.57
Si	14	70	5.63	7.93
Ti	22	9789	4.54	3.75
K	19	2068	3.15	3.18
Pb	82	2372	0.63	0.12
Mn	25	2260	0.52	0.37
As	33	672	0.13	0.07
Na	11	0	0.00	0.00
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Cadmium yellow

Spectrum:

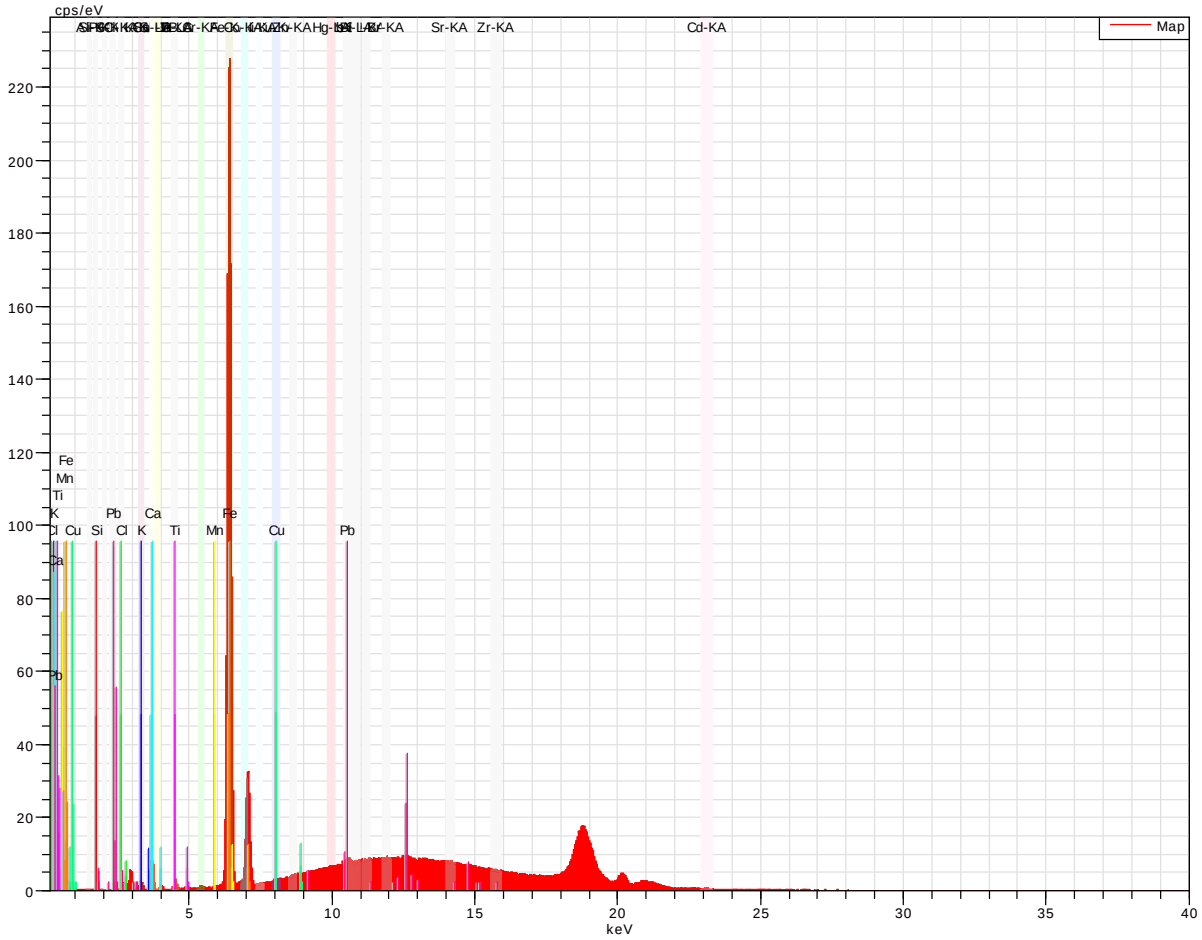
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Cd	48	1995	37.43	18.46
S	16	3920	28.41	49.12
Zn	30	142400	25.91	21.97
Ca	20	2430	5.55	7.68
Fe	26	8764	2.08	2.07
Ti	22	727	0.61	0.70
	Total:		100.00	100.00



Lead tin yellow I

Spectrum:

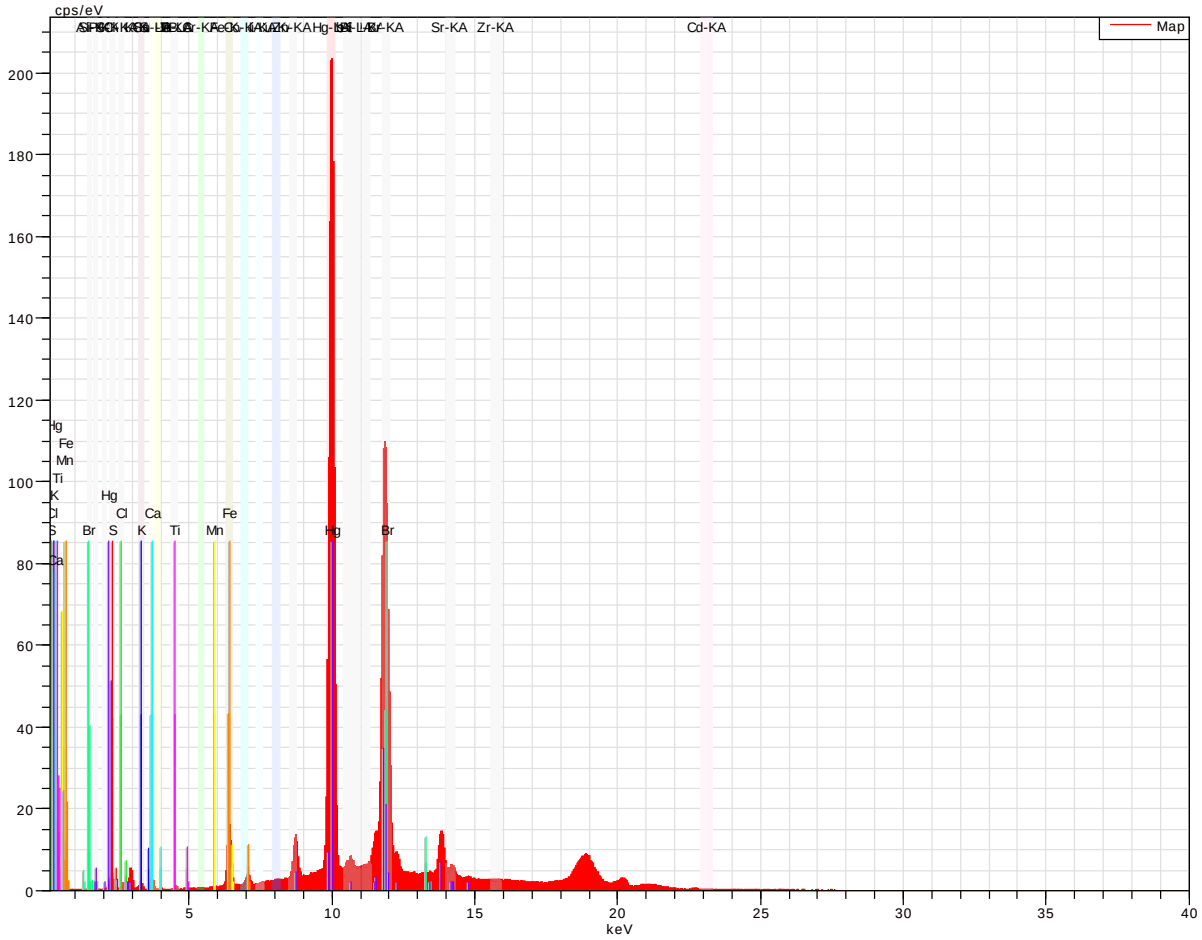
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Pb	82	421025	79.31	66.18
Sn	50	563	12.52	18.24
Ba	56	18	6.40	8.06
Ca	20	1515	1.68	7.23
Fe	26	836	0.09	0.29
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Yellow ochre

Spectrum:

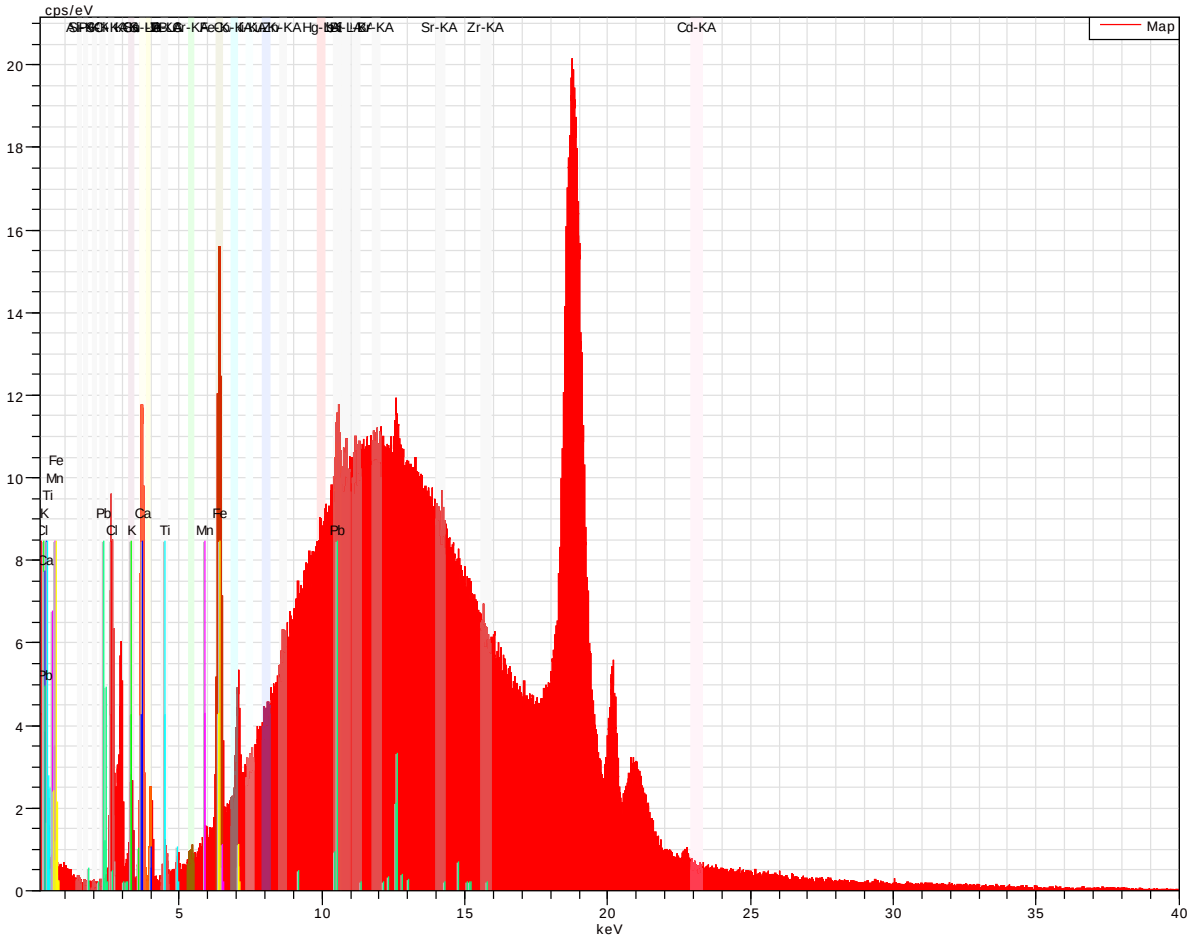
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Fe	26	250359	72.33	63.17
Si	14	98	10.93	18.98
Ca	20	6923	9.35	11.38
K	19	1763	3.68	4.59
Pb	82	3083	2.35	0.55
Ti	22	2358	1.16	1.18
Cu	29	369	0.16	0.12
Mn	25	122	0.04	0.03
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Vermillion

Spectrum:

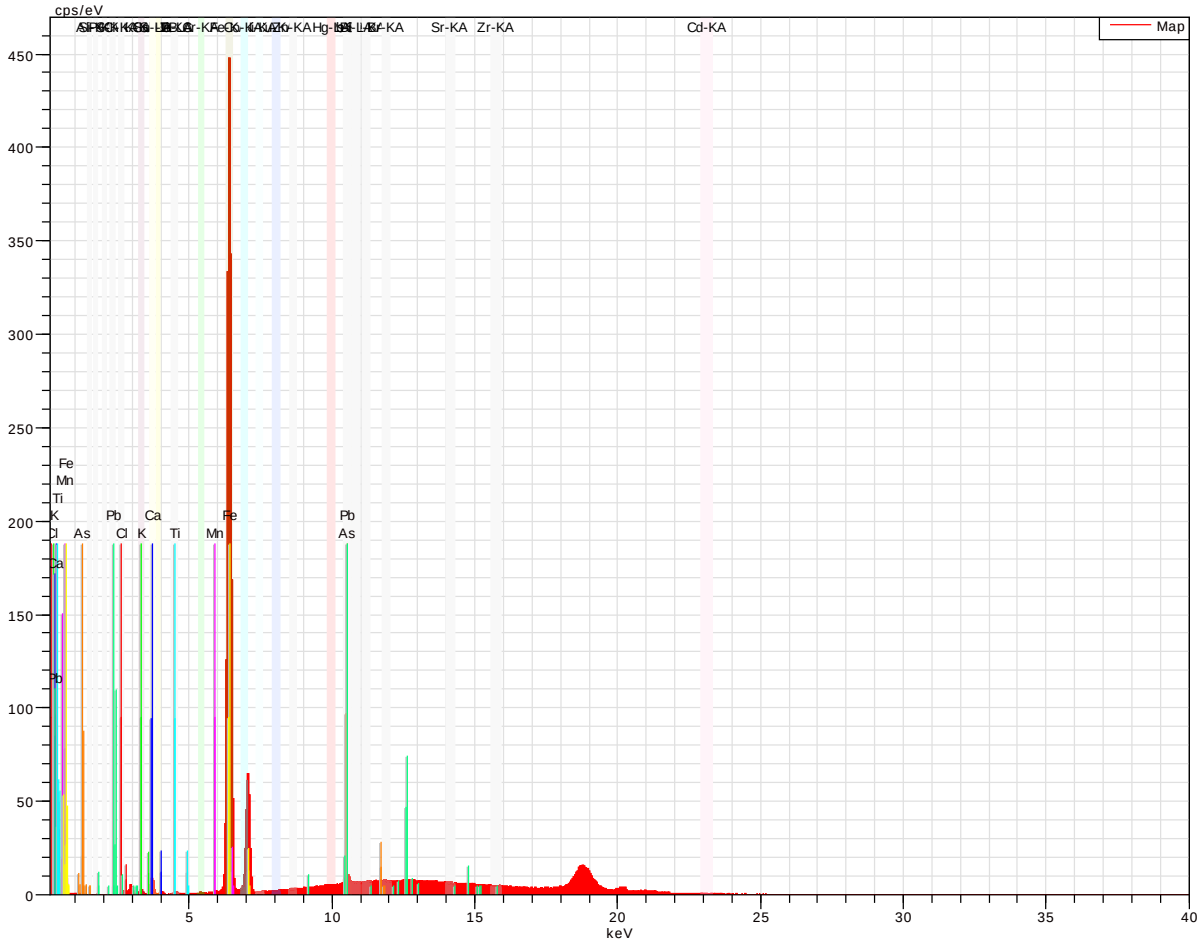
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Hg	80	514579	87.06	56.12
S	16	1391	4.24	17.11
Ca	20	2658	3.00	9.68
K	19	1548	2.90	9.58
Fe	26	18518	1.82	4.21
Cl	17	238	0.70	2.55
Ti	22	810	0.28	0.74
Mn	25	24	0.00	0.01
Br	35	0	0.00	0.00
	Total:		100.00	100.00



Alizarin

Spectrum:

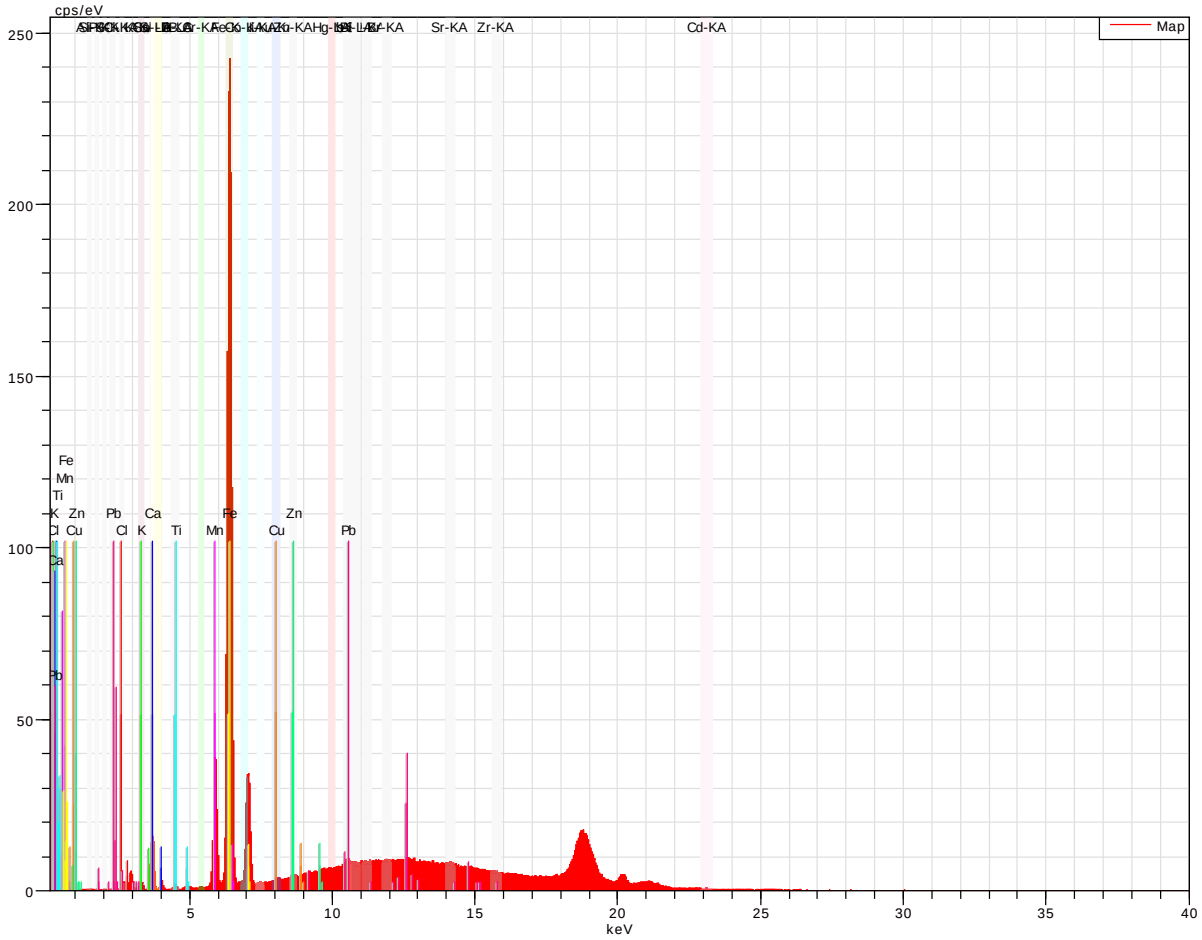
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	11796	40.87	40.68
Cl	17	7174	35.93	40.43
K	19	2338	11.01	11.23
Fe	26	17632	8.25	5.89
Pb	82	4236	2.33	0.45
Ti	22	907	1.44	1.20
Mn	25	283	0.17	0.12
	Total:		100.00	100.00



Raw sienna

Spectrum:

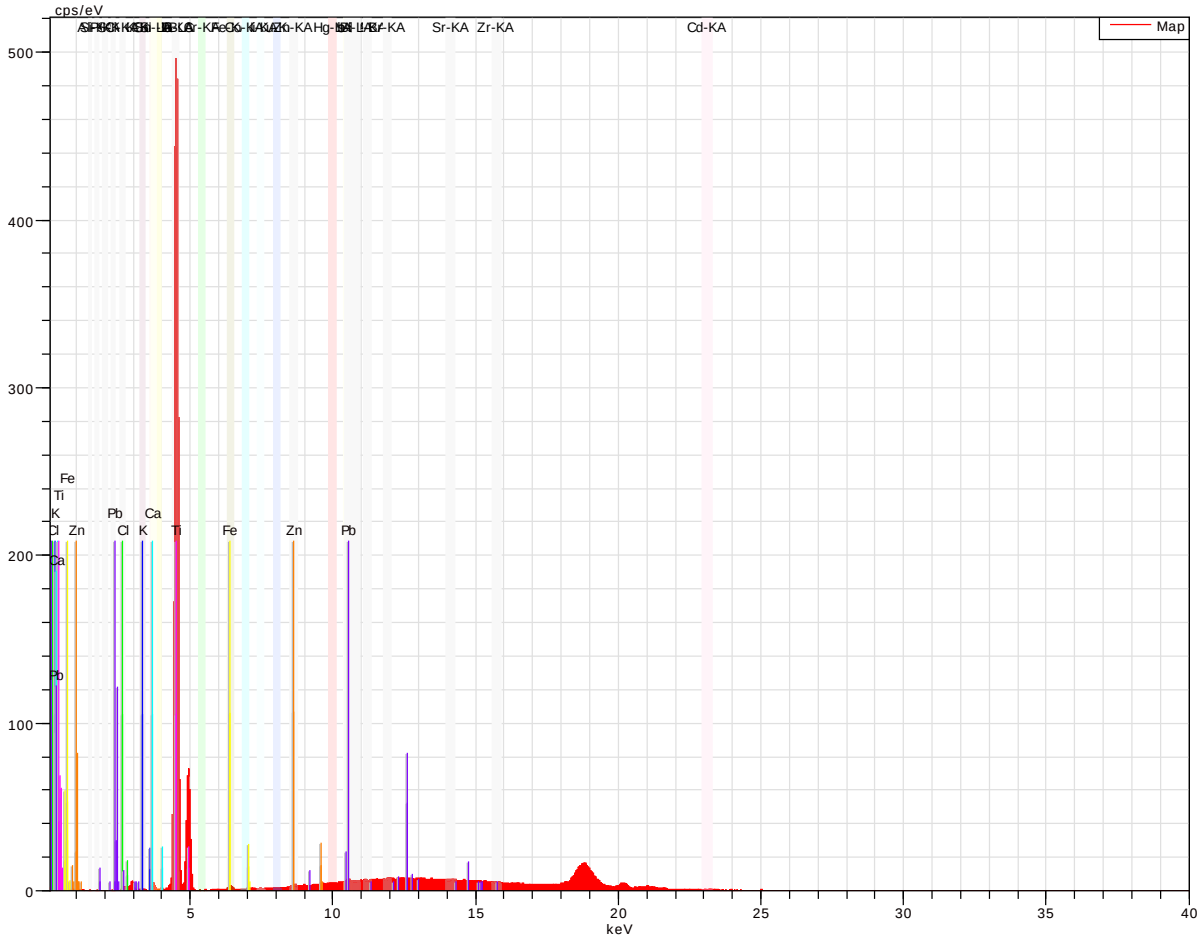
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Fe	26	531021	89.75	88.06
Ca	20	8446	5.55	7.59
K	19	1829	1.90	2.66
As	33	5295	1.53	1.12
Pb	82	1876	1.00	0.26
Ti	22	1034	0.24	0.27
Mn	25	176	0.03	0.03
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Burnt umber

Spectrum:

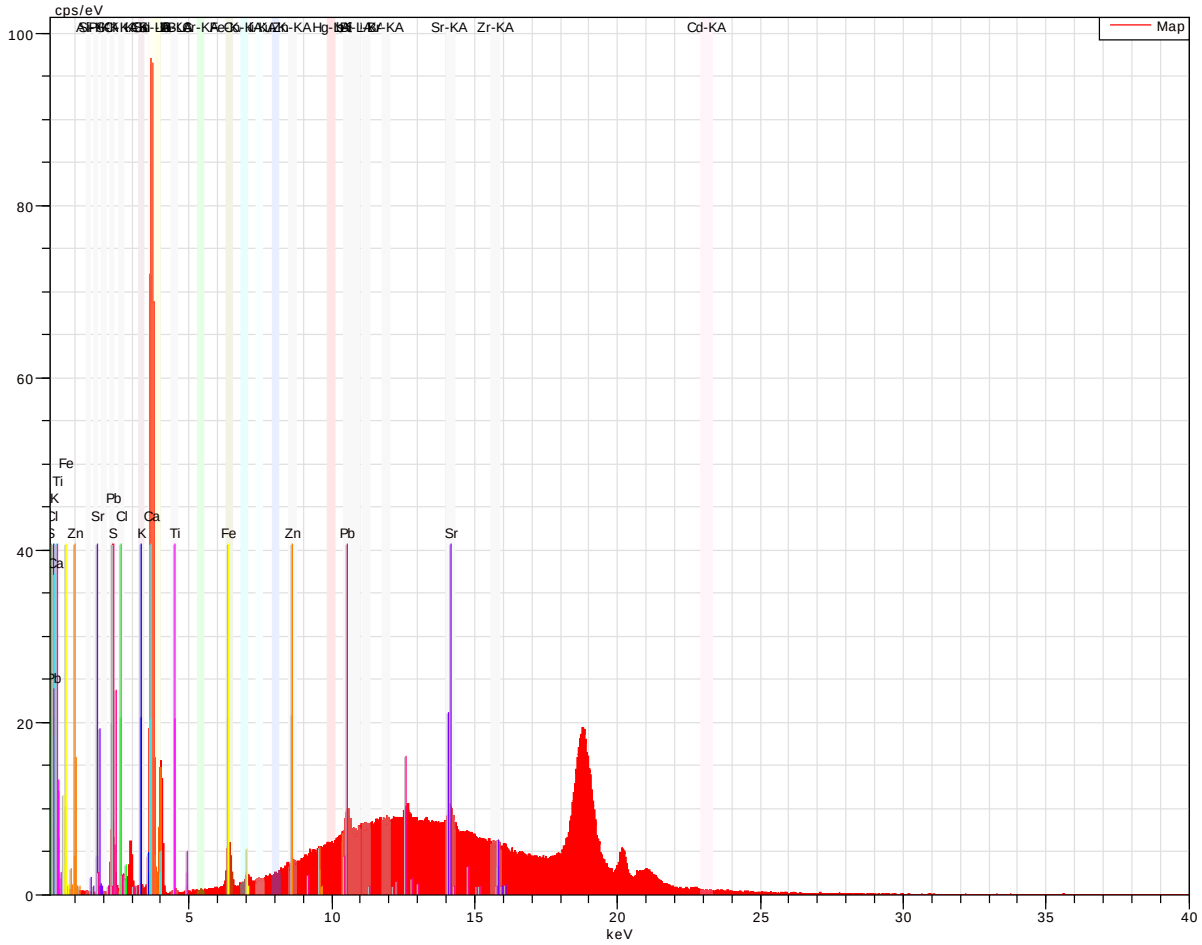
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Fe	26	230441	68.29	64.89
Ca	20	11509	14.34	18.98
Mn	25	34266	11.09	10.71
K	19	1474	2.80	3.81
Pb	82	3231	2.49	0.64
Ti	22	1106	0.54	0.60
Cu	29	535	0.24	0.20
Zn	30	489	0.20	0.17
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Titanium white

Spectrum:

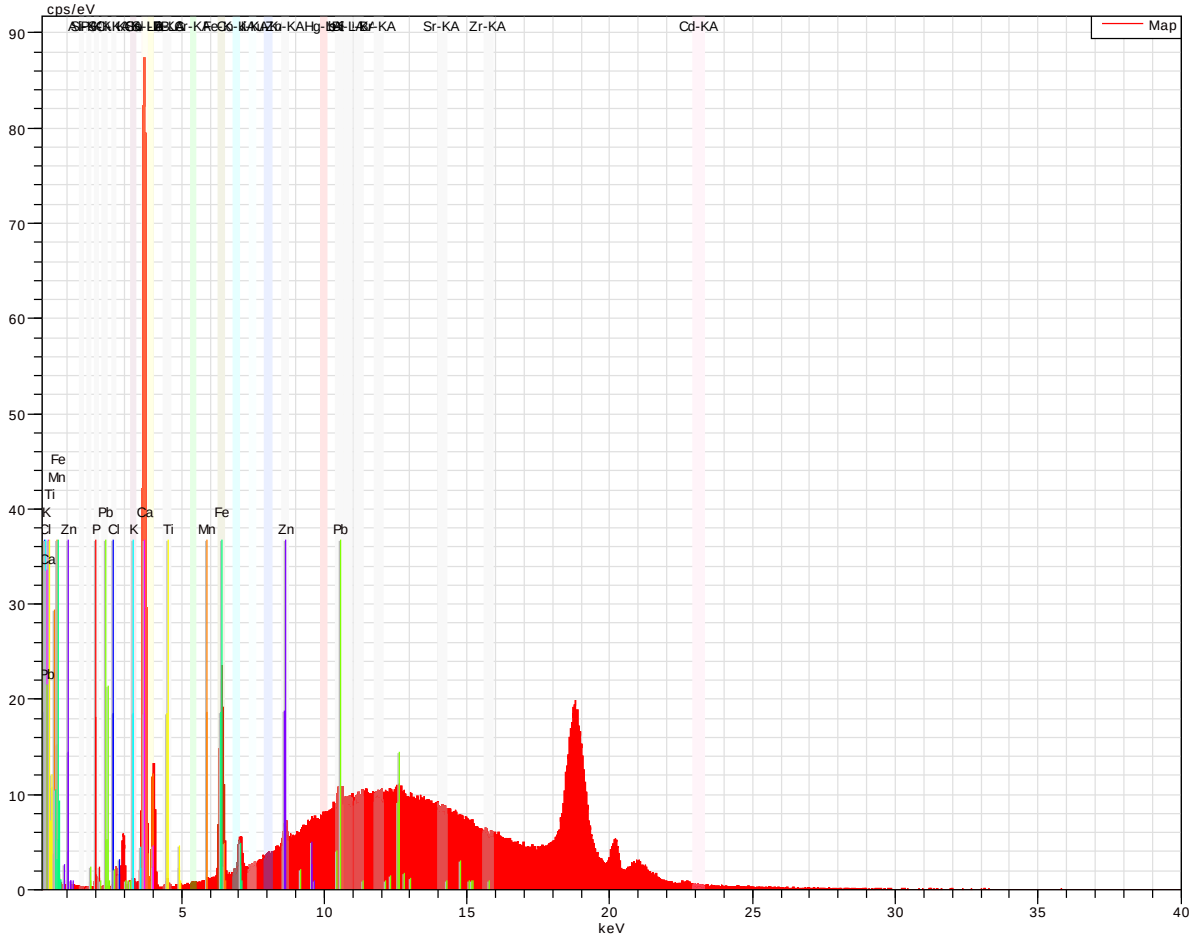
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ti	22	447890	97.94	98.21
Ca	20	2849	0.91	1.09
Fe	26	2200	0.49	0.42
Pb	82	1962	0.47	0.11
Zn	30	968	0.13	0.09
K	19	135	0.07	0.08
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Gypsum

Spectrum:

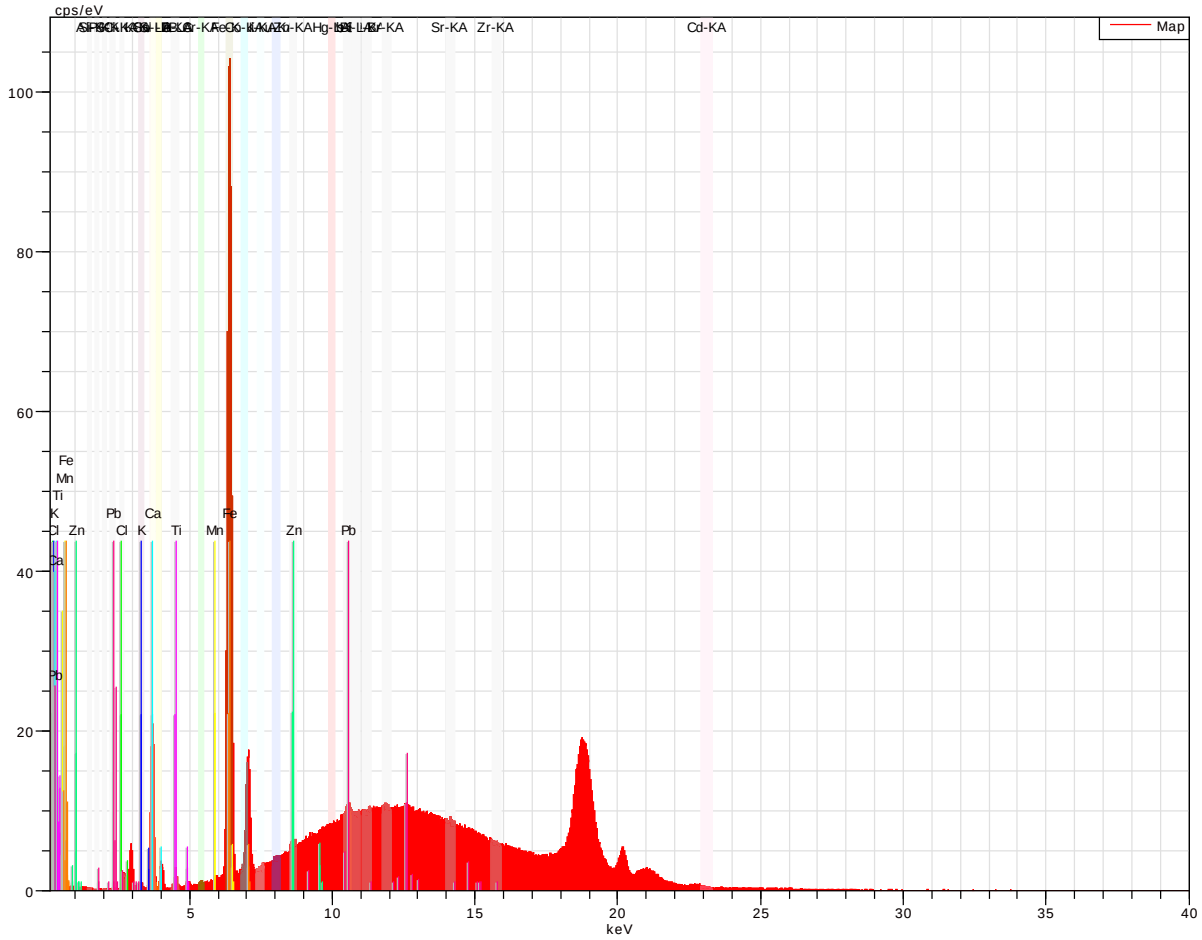
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	79982	82.09	80.98
S	16	4281	13.49	16.63
Pb	82	5389	1.39	0.27
Fe	26	5368	1.31	0.93
Sr	38	3766	0.82	0.37
K	19	389	0.48	0.48
Ti	22	424	0.37	0.31
Zn	30	349	0.05	0.03
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Bone black

Spectrum:

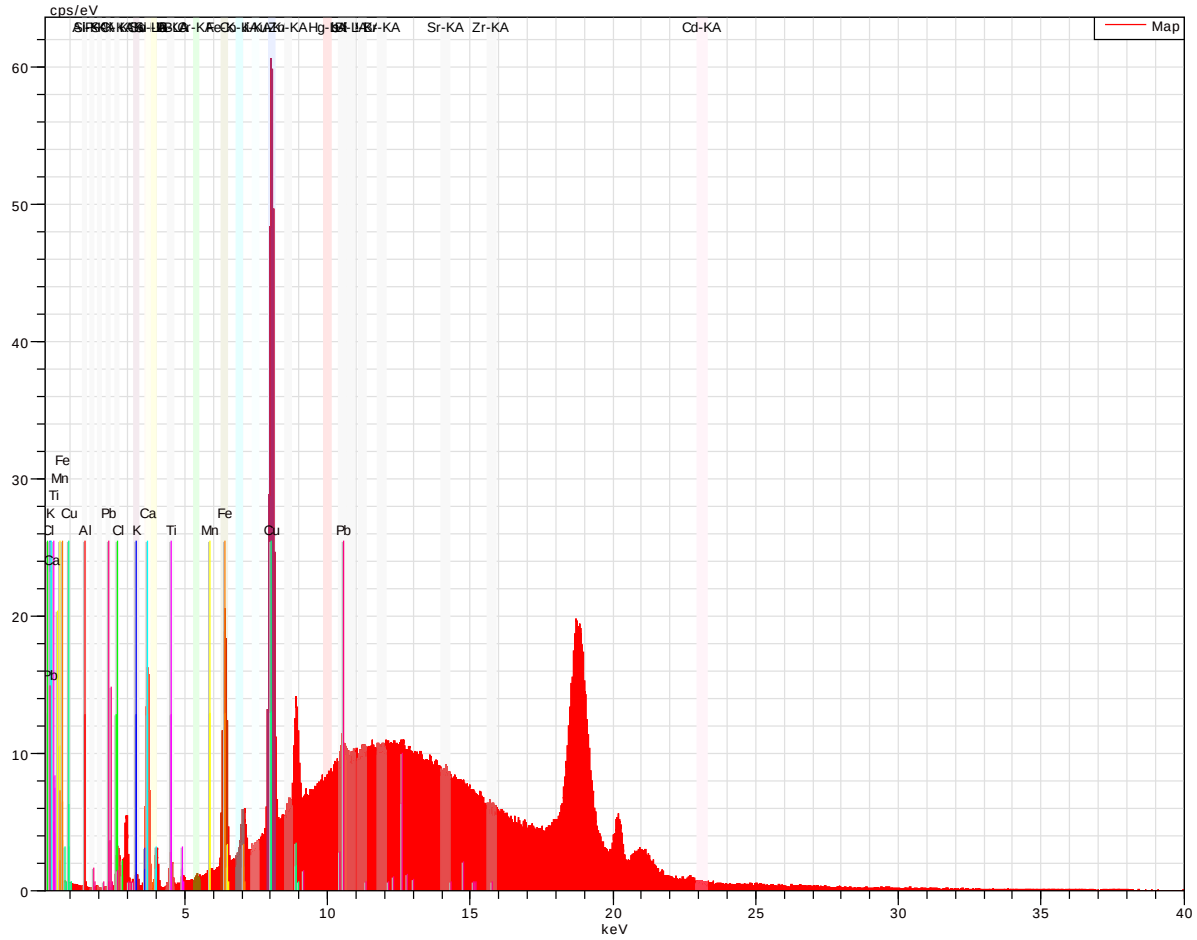
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	71364	81.13	81.54
P	15	769	9.25	12.02
Fe	26	22593	6.67	4.81
Pb	82	3753	1.28	0.25
Ti	22	687	0.70	0.59
Zn	30	2533	0.47	0.29
K	19	340	0.45	0.46
Mn	25	152	0.06	0.04
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Prussian blue

Spectrum:

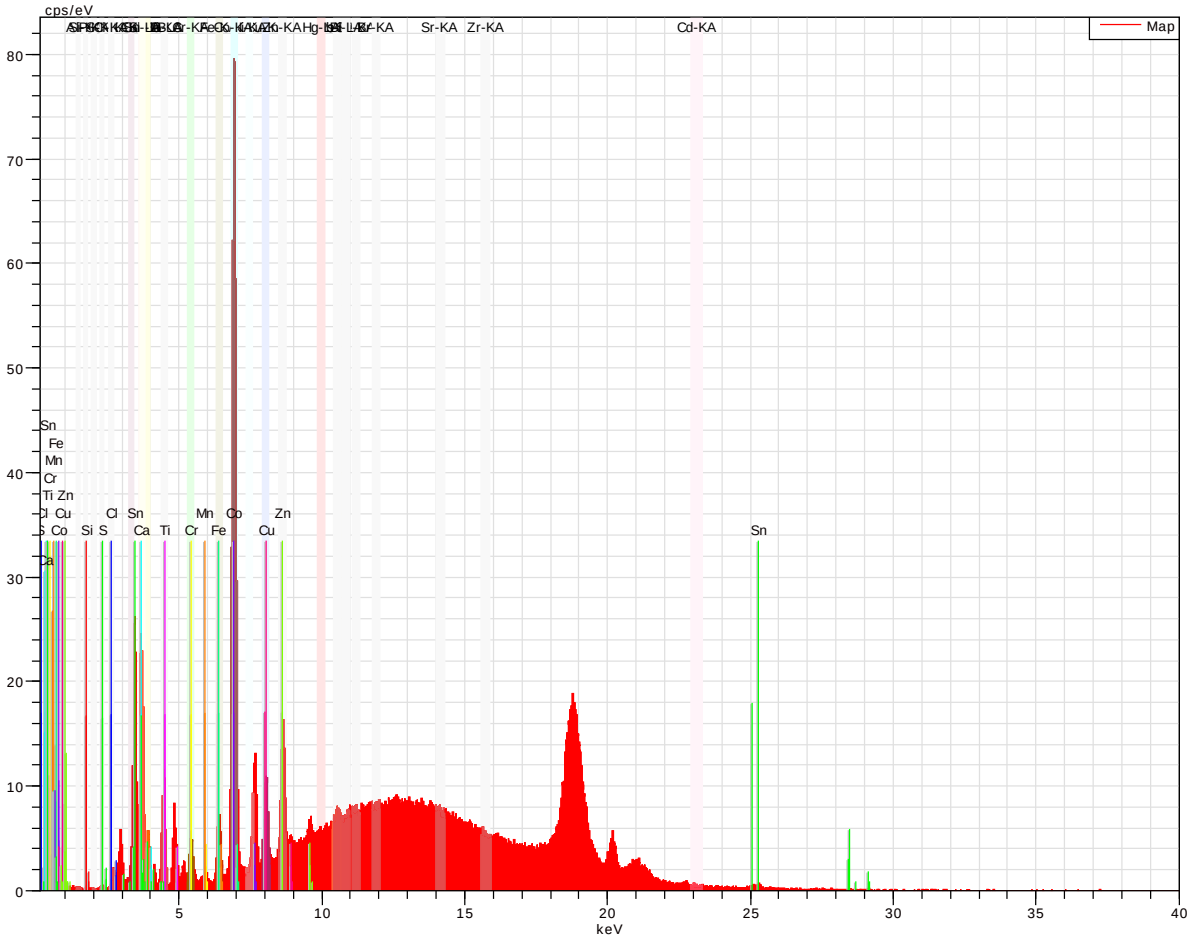
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Fe	26	131950	56.31	49.91
Ca	20	20034	36.39	44.95
Pb	82	3495	3.10	0.74
Ti	22	2498	2.34	2.42
K	19	412	1.09	1.37
Zn	30	1293	0.61	0.46
Mn	25	351	0.17	0.16
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Phthalo blue

Spectrum:

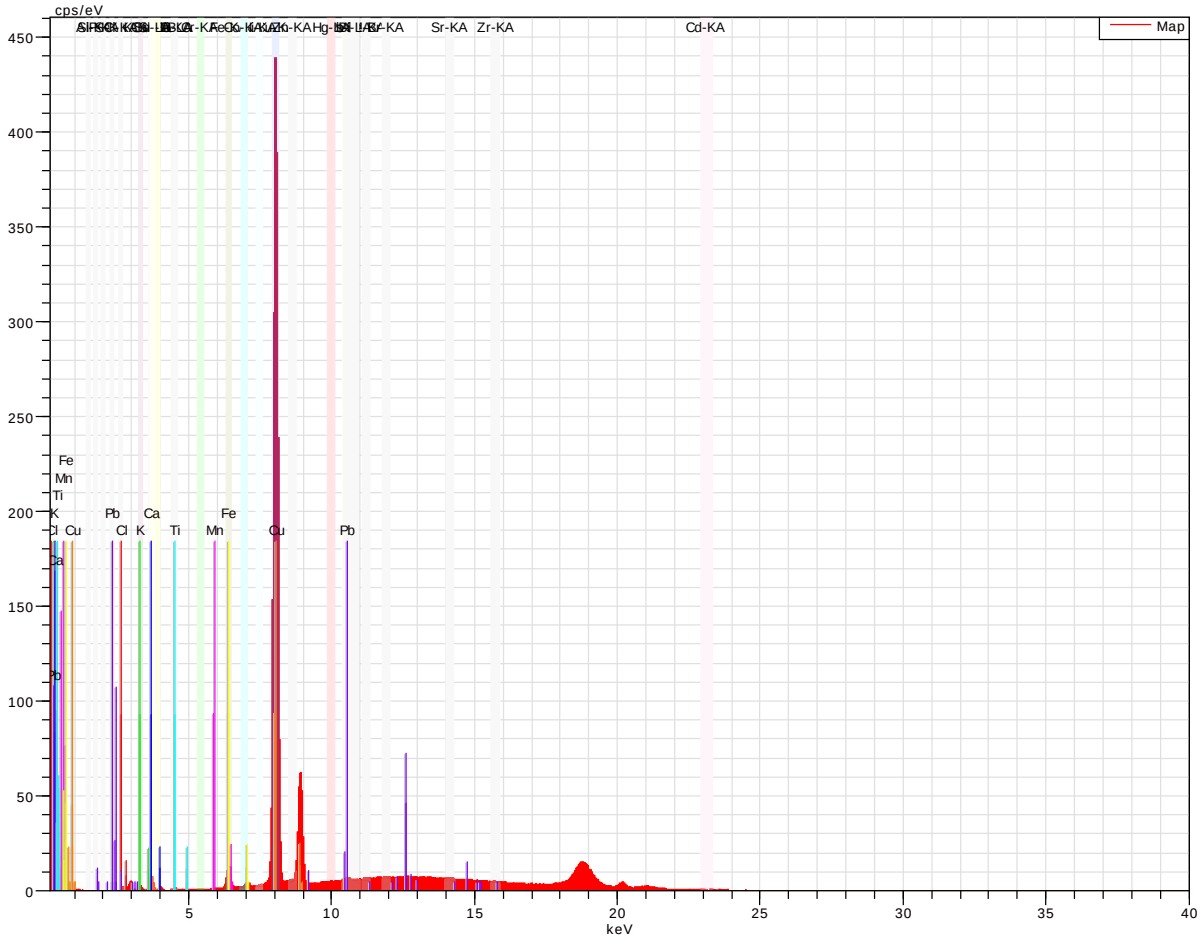
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Al	13	39	39.45	52.42
Ca	20	15512	28.30	25.31
Cu	29	74104	14.80	8.35
Cl	17	1311	6.80	6.87
Fe	26	22182	5.42	3.48
K	19	731	2.06	1.89
Ti	22	2356	1.90	1.42
Pb	82	2746	1.19	0.21
Mn	25	274	0.08	0.06
		Total:	100.00	100.00



Cobalt blue

Spectrum:

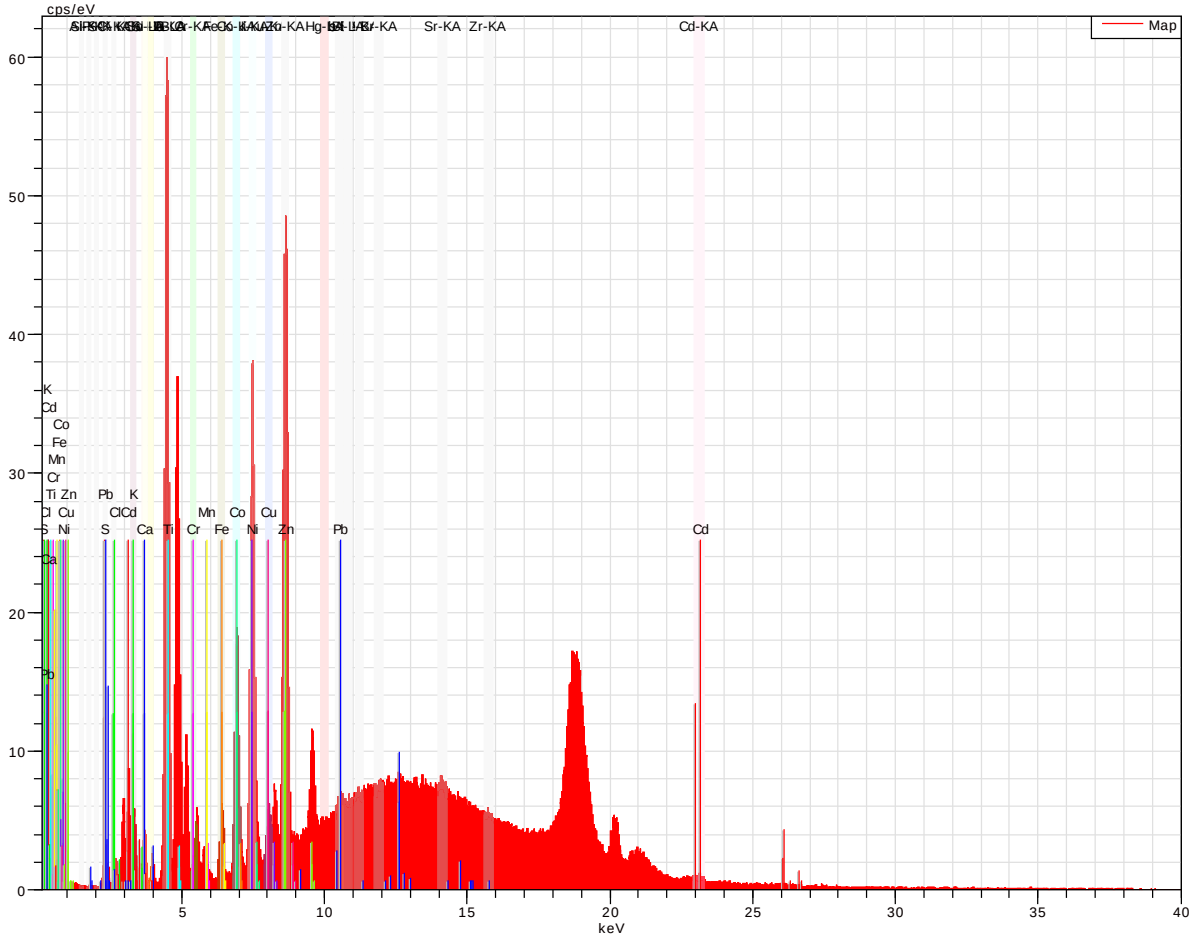
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Co	27	76712	28.71	25.98
Sn	50	530	23.37	10.50
Si	14	74	11.78	22.36
Ca	20	5310	11.45	15.23
Ti	22	7546	8.24	9.18
Zn	30	13366	5.24	4.27
Cu	29	8278	3.46	2.90
Fe	26	5412	2.27	2.16
Cr	24	3865	2.19	2.24
S	16	155	1.79	2.98
Cl	17	218	1.39	2.09
Mn	25	243	0.11	0.11
	Total:		100.00	100.00



Verdigris

Spectrum:

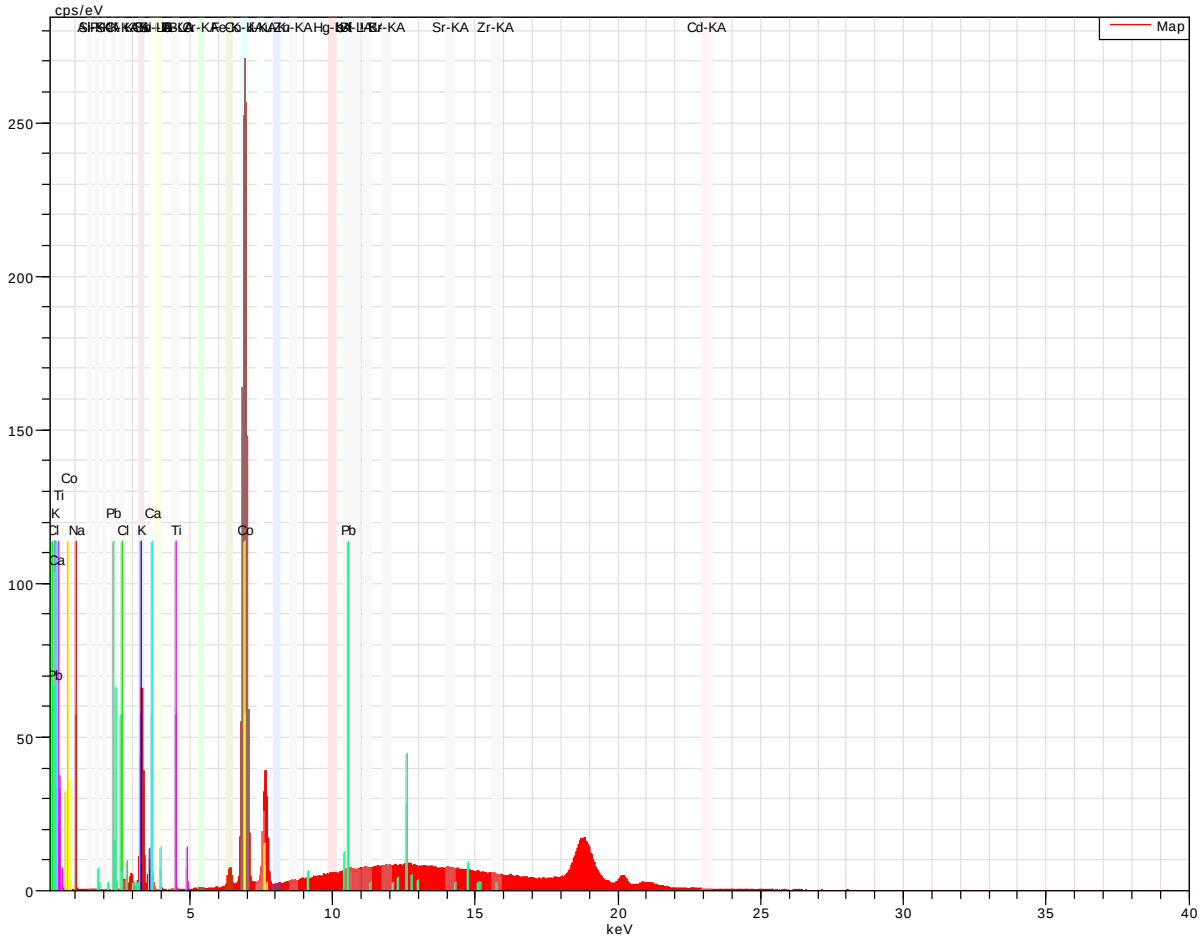
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Cu	29	692440	88.20	84.43
Ca	20	8622	6.28	9.53
K	19	2064	2.42	3.77
Pb	82	2572	1.47	0.43
Fe	26	16503	1.28	1.39
Ti	22	1313	0.32	0.41
Mn	25	320	0.03	0.03
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Cadmium green

Spectrum:

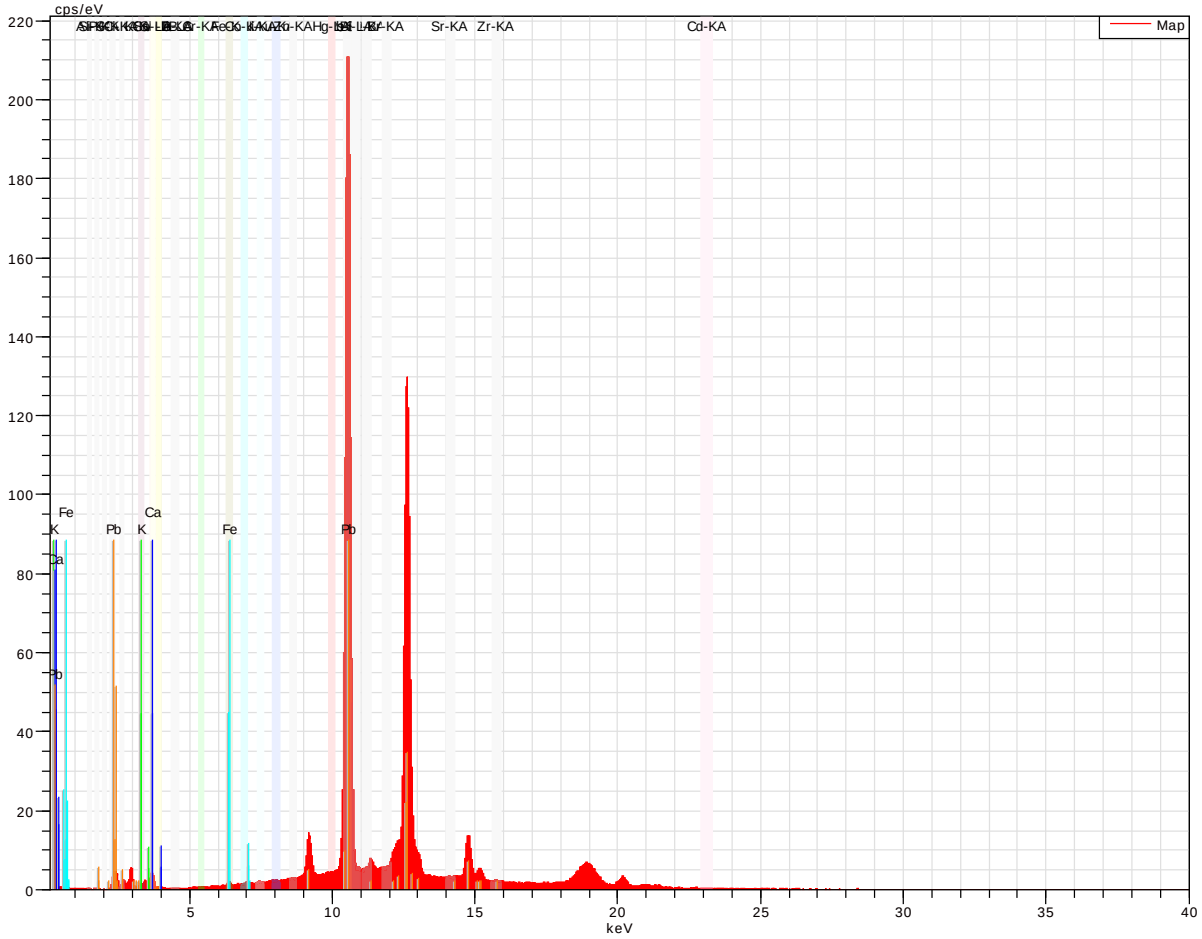
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ti	22	49866	39.36	42.46
Zn	30	44811	14.77	11.67
S	16	1390	12.35	19.90
Cd	48	485	10.35	4.75
Ni	28	33352	9.83	8.65
Co	27	16050	5.42	4.75
Ca	20	1797	3.54	4.56
Fe	26	4675	1.74	1.61
Pb	82	1505	1.09	0.27
Cu	29	2572	0.80	0.65
Cr	24	672	0.39	0.39
Mn	25	778	0.36	0.34
Cl	17	0	0.00	0.00
K	19	0	0.00	0.00



Cobalt yellow

Spectrum:

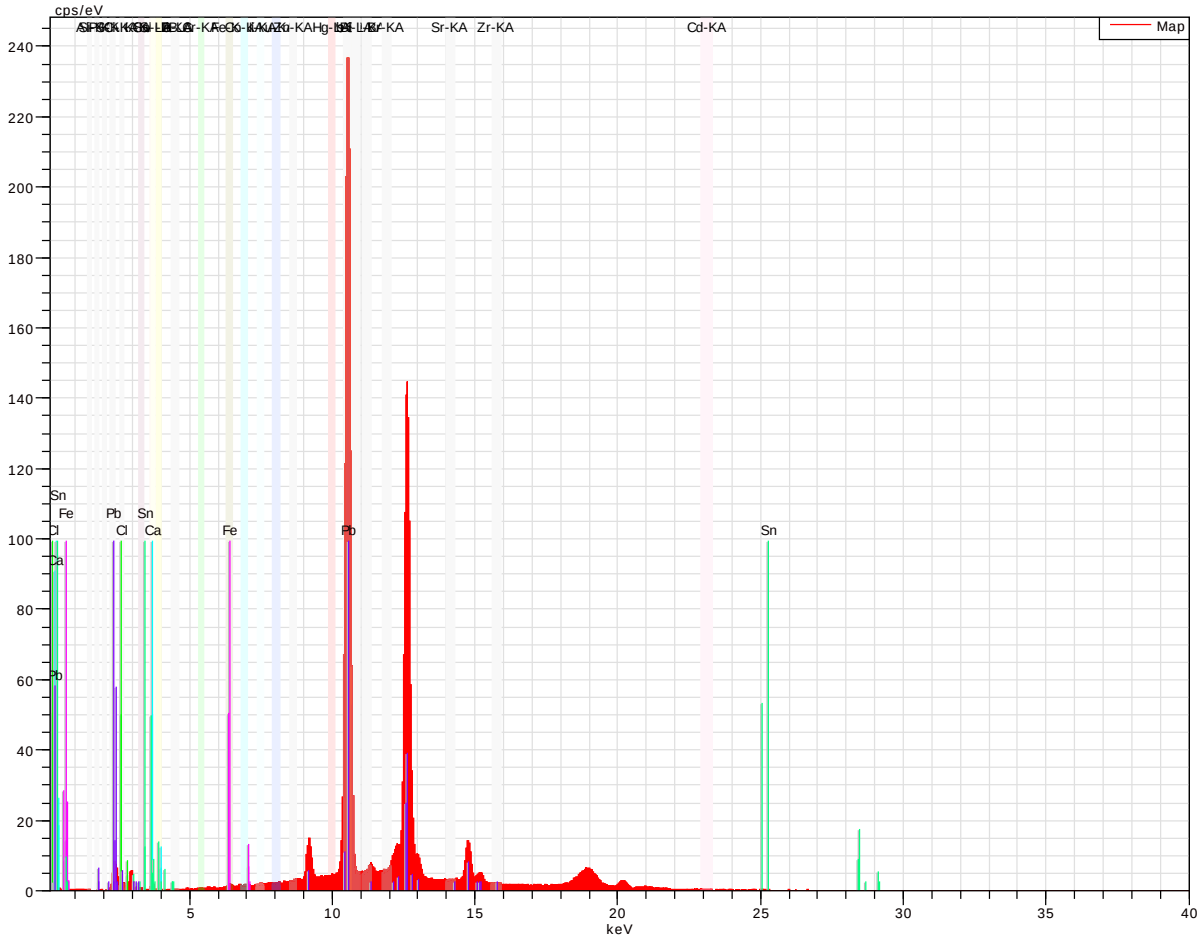
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
K	19	50500	54.30	63.56
Co	27	288122	41.74	32.41
Ca	20	2478	3.31	3.78
Pb	82	1712	0.50	0.11
Ti	22	366	0.15	0.15
Na	11	0	0.00	0.00
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Lead tin yellow II

Spectrum:

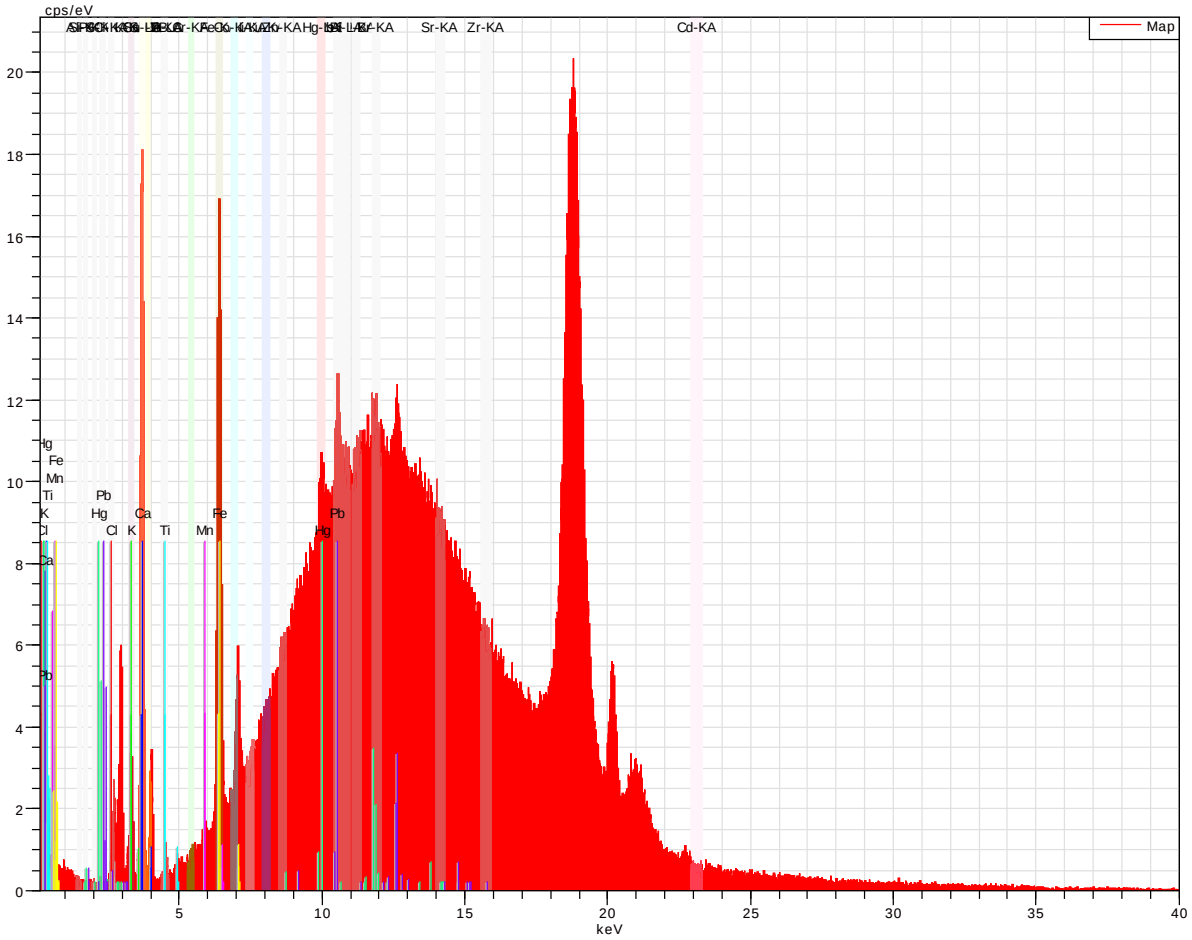
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Pb	82	445393	95.04	78.71
Ca	20	2817	3.68	15.76
K	19	556	1.20	5.27
Fe	26	720	0.08	0.26
	Total:		100.00	100.00



Massicot

Spectrum:

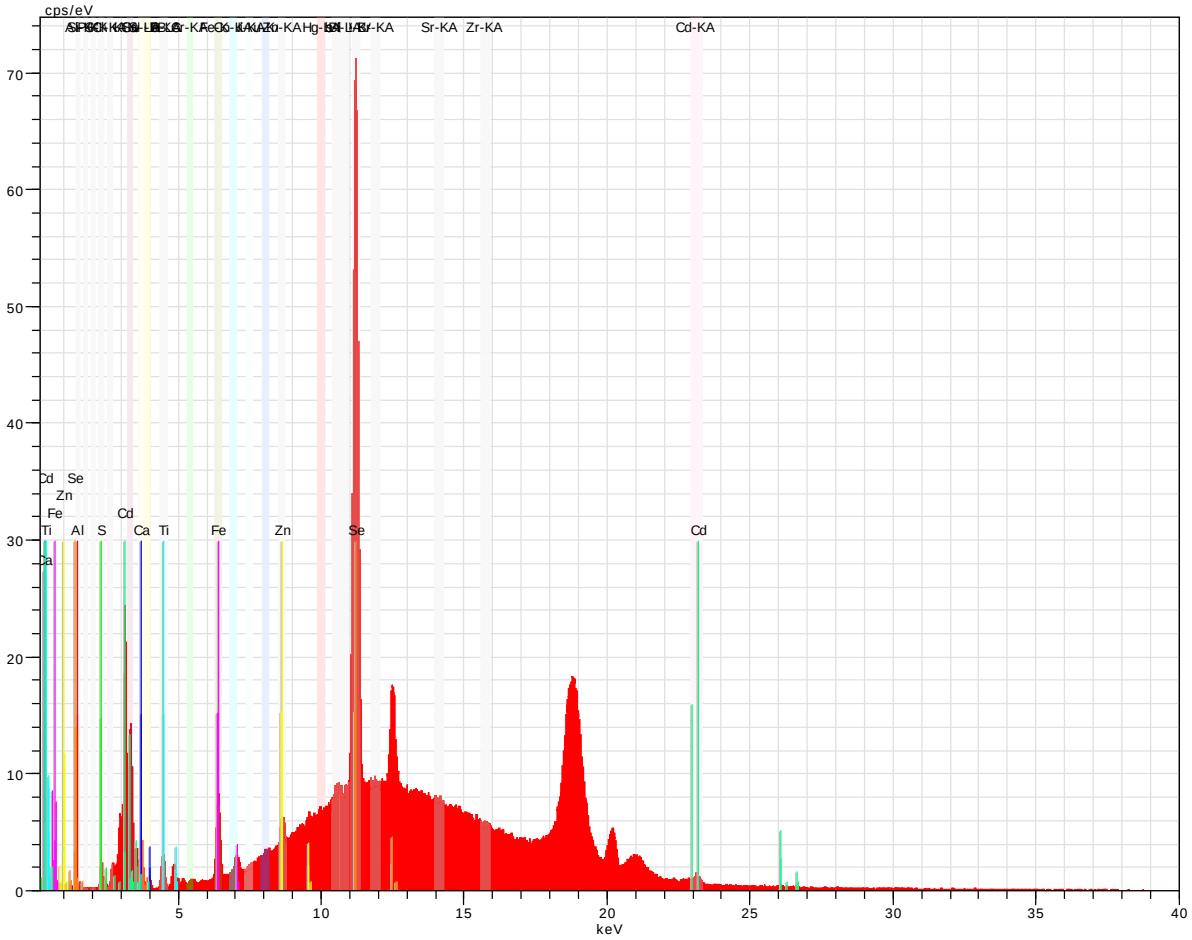
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Pb	82	453146	94.44	86.88
Sn	50	161	4.18	6.72
Ca	20	1009	1.28	6.08
Fe	26	831	0.09	0.32
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Carmine lake

Spectrum:

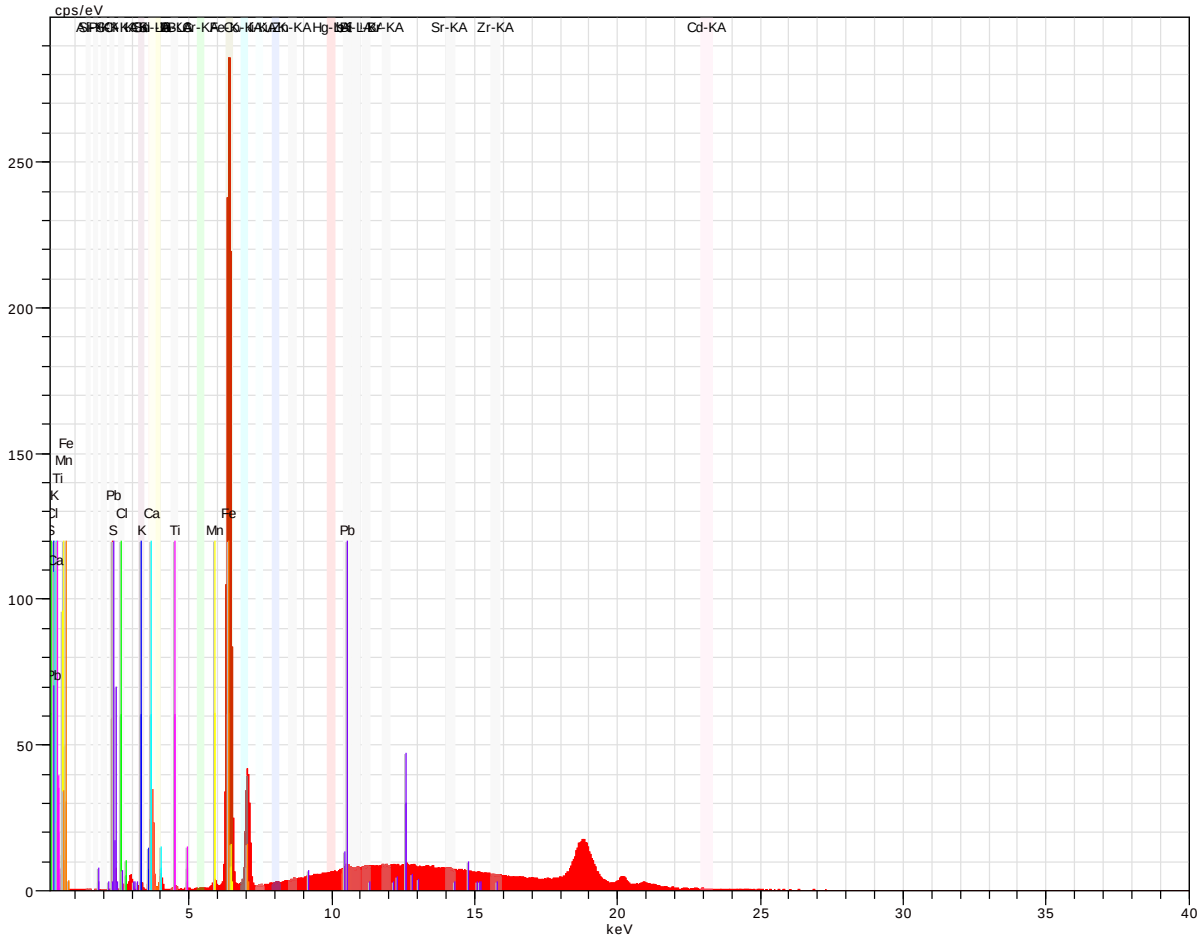
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	14598	63.81	71.39
Fe	26	16267	13.47	10.81
K	19	2342	11.77	13.50
Pb	82	4511	5.04	1.09
Hg	80	3434	3.41	0.76
Ti	22	696	1.86	1.75
Cl	17	52	0.42	0.53
Mn	25	208	0.22	0.18
	Total:		100.00	100.00



Cadmium red

Spectrum:

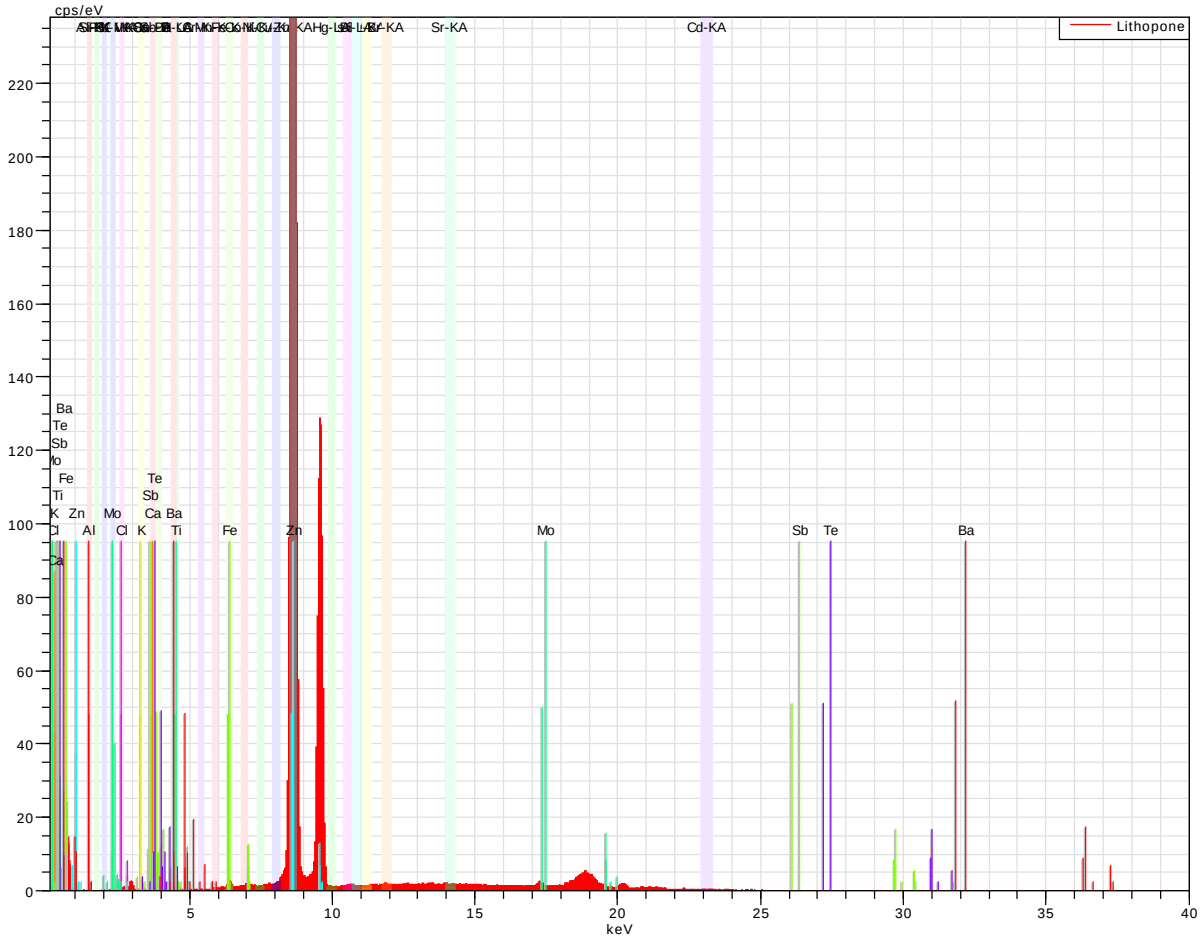
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Al	13	82	48.95	69.09
Cd	48	2480	20.18	6.84
Se	34	157095	14.53	7.01
S	16	1603	9.64	11.45
Ca	20	2620	3.29	3.12
Ti	22	3920	1.66	1.32
Fe	26	12518	1.47	1.00
Zn	30	3942	0.27	0.16
	Total:		100.00	100.00



Burnt sienna

Spectrum:

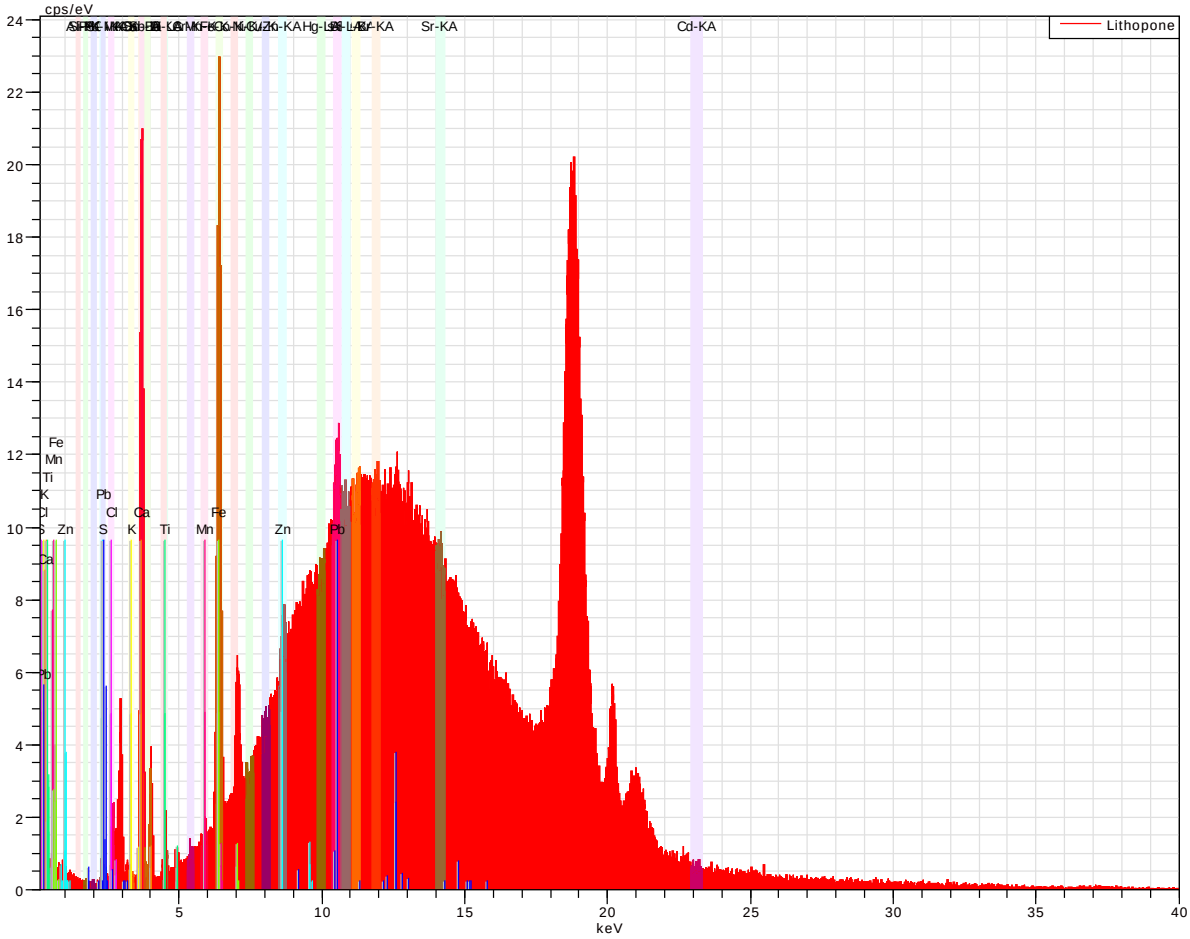
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Fe	26	361828	68.08	61.52
Ca	20	33396	26.48	33.34
K	19	2071	2.42	3.13
Pb	82	3458	1.53	0.37
Ti	22	1685	0.61	0.64
Mn	25	2704	0.56	0.52
S	16	69	0.30	0.47
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Zinc white

Spectrum:

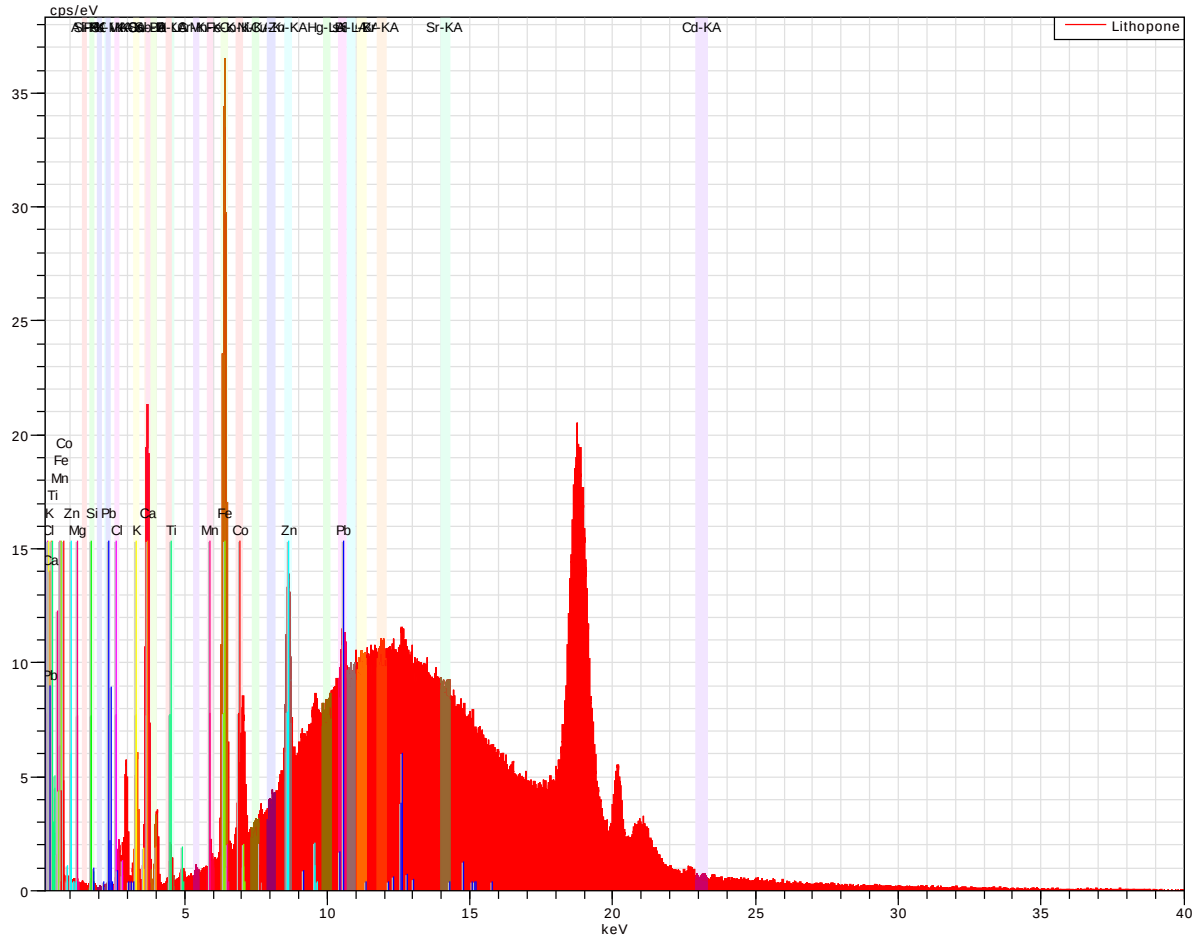
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Zn	30	1076095	69.15	51.81
Al	13	51	24.70	44.86
Te	52	99	2.57	0.99
Sb	51	76	1.31	0.53
Ba	56	6	1.12	0.40
Ca	20	1078	0.50	0.61
K	19	393	0.31	0.39
Cl	17	115	0.21	0.29
Fe	26	1708	0.08	0.07
Ti	22	360	0.05	0.06
Mo	42	0	0.00	0.00
	Total:		100.00	100.00



Vine black

Spectrum:

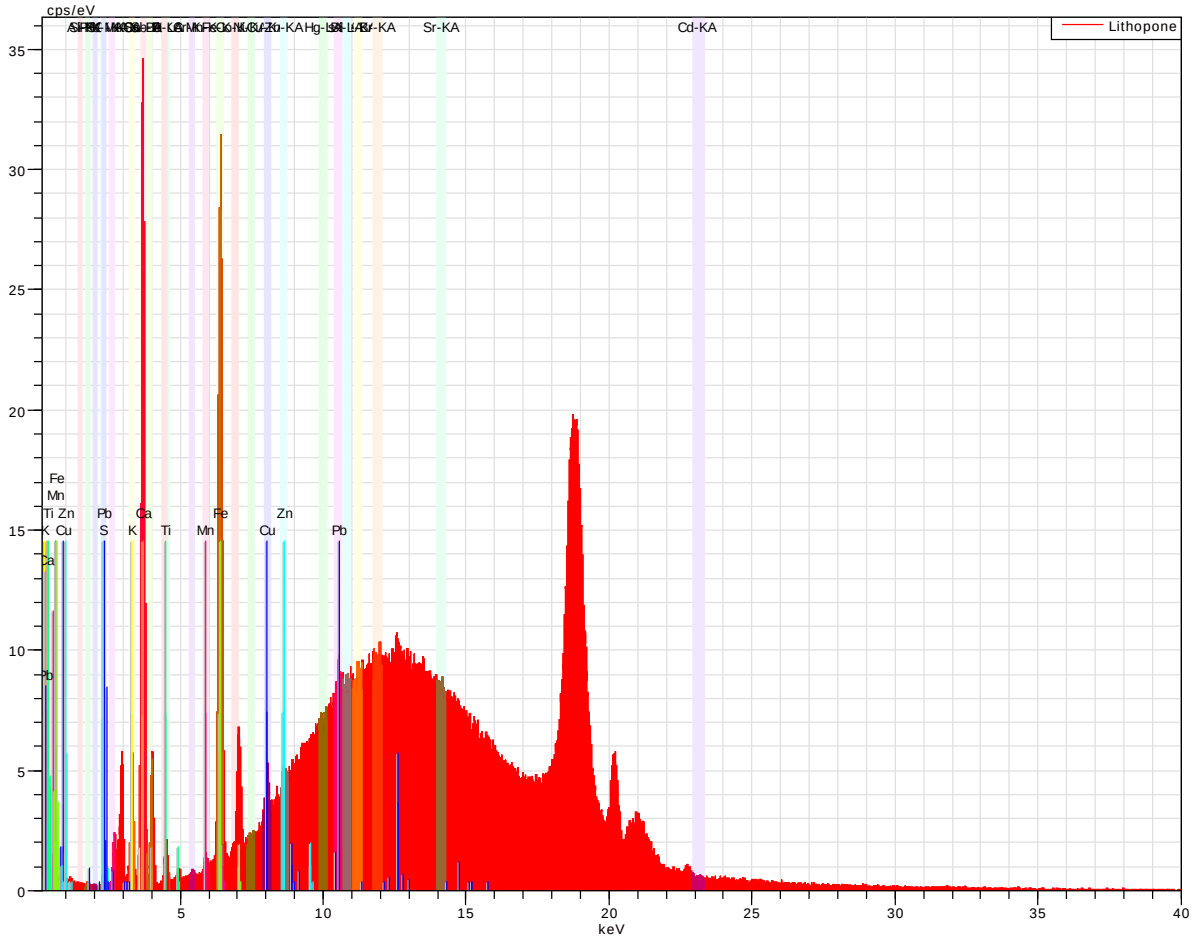
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	13366	66.05	73.20
Fe	26	17116	19.73	15.69
Pb	82	3242	5.25	1.13
S	16	217	3.88	5.38
Ti	22	1053	3.68	3.41
Zn	30	862	0.73	0.50
K	19	71	0.45	0.51
Mn	25	153	0.22	0.18
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Maya blue

Spectrum:

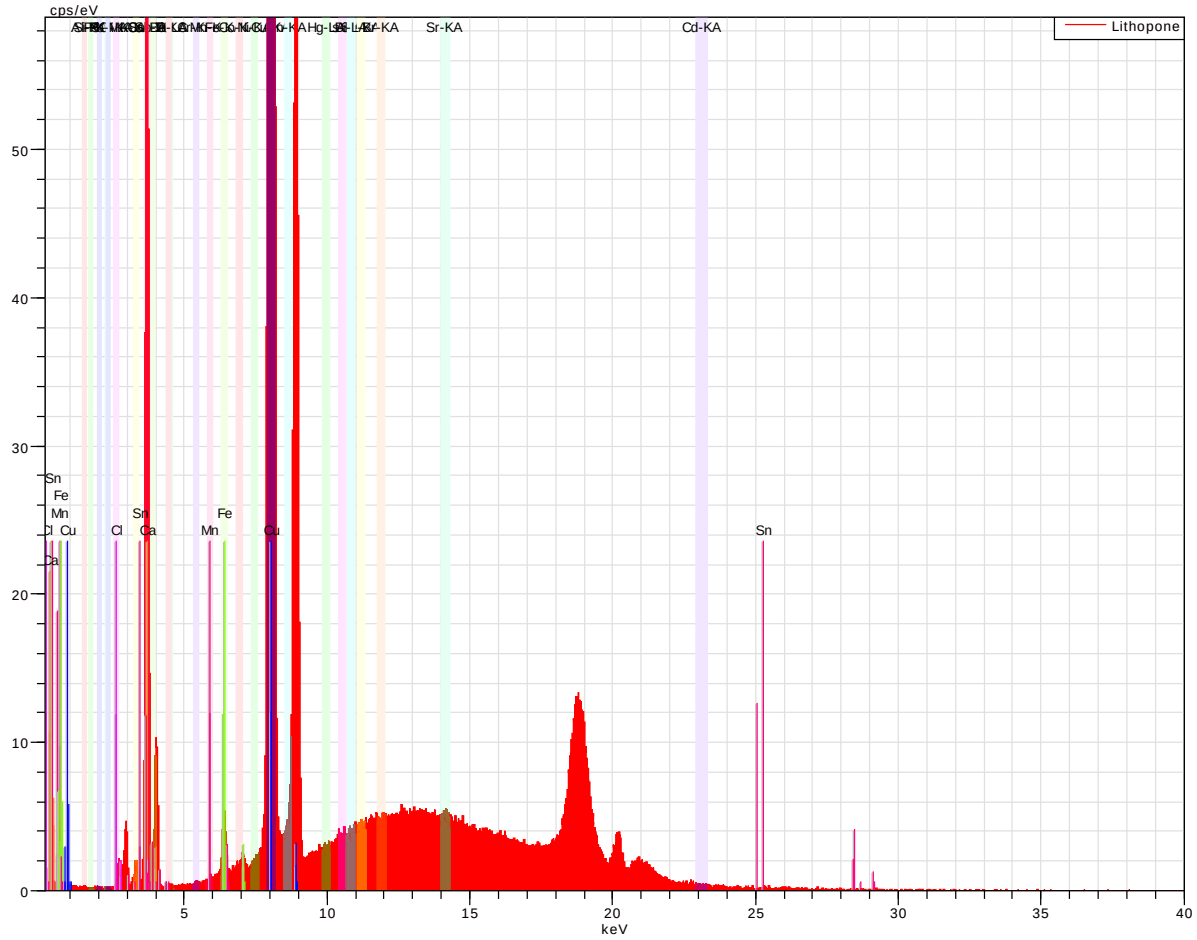
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	16820	46.94	48.84
Fe	26	35502	17.01	12.70
K	19	4214	13.87	14.79
Si	14	93	11.93	17.71
Zn	30	10258	3.72	2.38
Pb	82	3969	2.81	0.57
Ti	22	1508	2.22	1.93
Co	27	2602	1.09	0.77
Mn	25	684	0.41	0.31
Mg	12	0	0.00	0.00
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Ultramarine nat.

Spectrum:

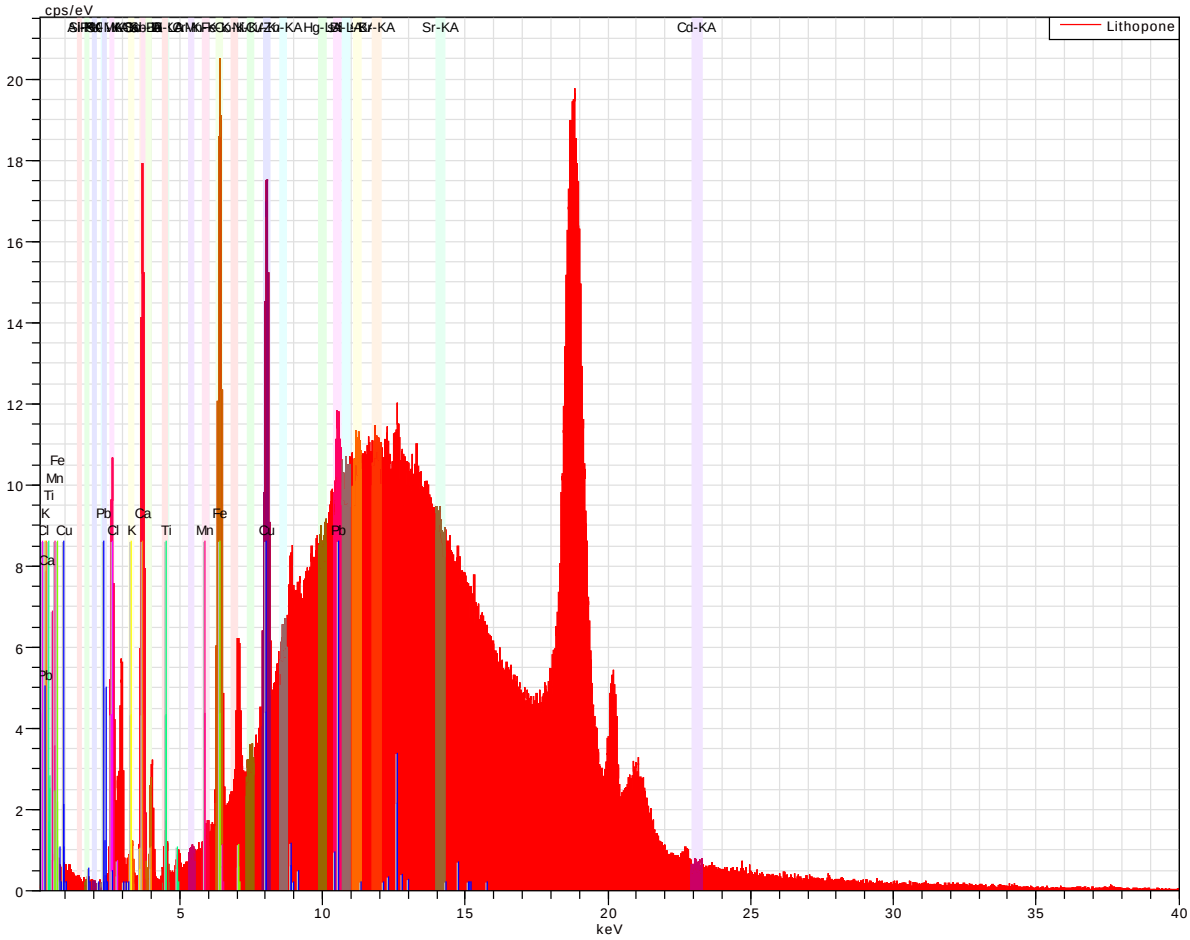
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	33967	66.39	70.60
Fe	26	37666	16.13	12.31
K	19	4726	10.09	11.00
Ti	22	1912	2.58	2.29
S	16	322	1.95	2.59
Pb	82	2856	1.60	0.33
Cu	29	2618	0.86	0.58
Mn	25	495	0.27	0.21
Zn	30	448	0.14	0.09
	Total:		100.00	100.00



Blue bice

Spectrum:

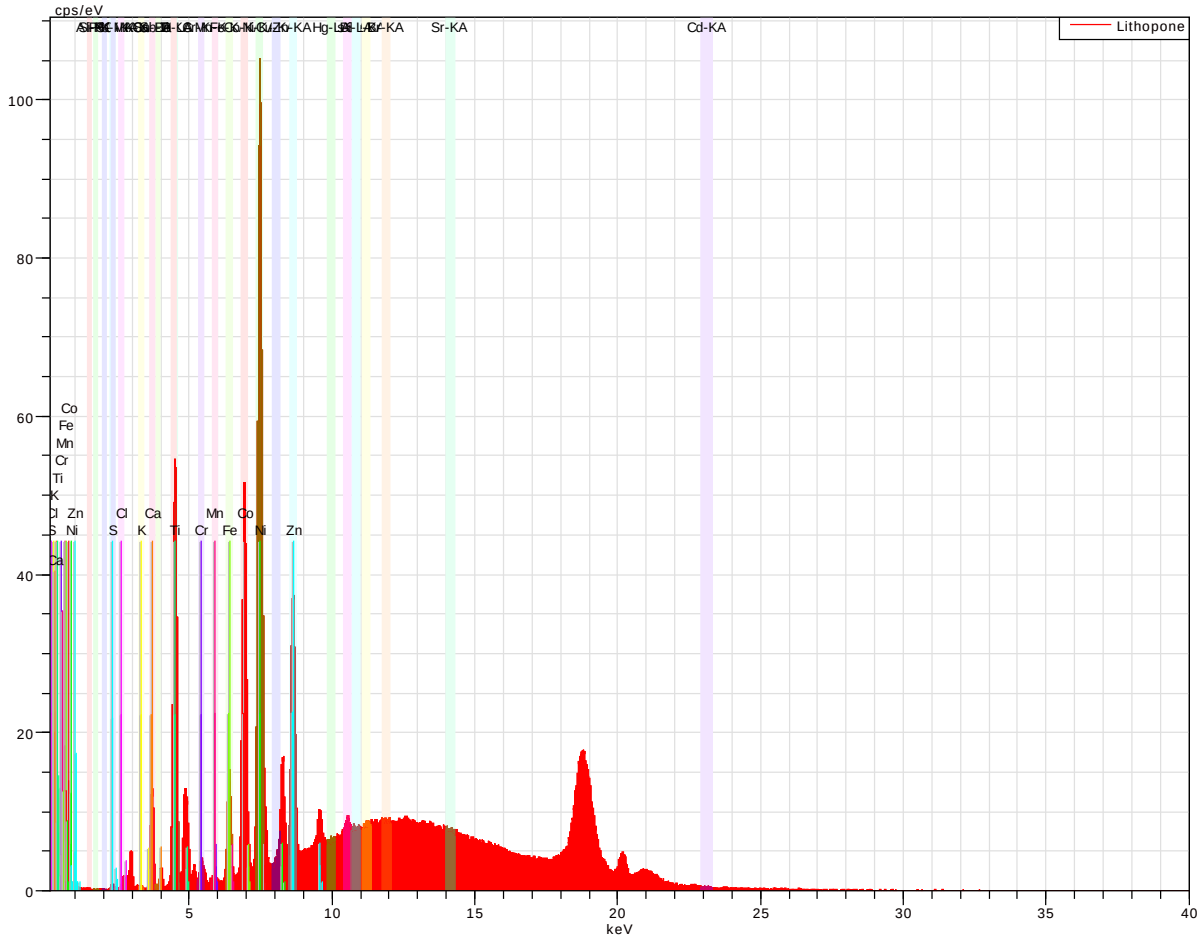
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Cu	29	526385	66.19	55.80
Ca	20	44160	31.88	42.61
Sn	50	55	1.05	0.47
Cl	17	209	0.49	0.75
Fe	26	3676	0.38	0.37
Mn	25	85	0.01	0.01
	Total:		100.00	100.00



Phthalo green

Spectrum:

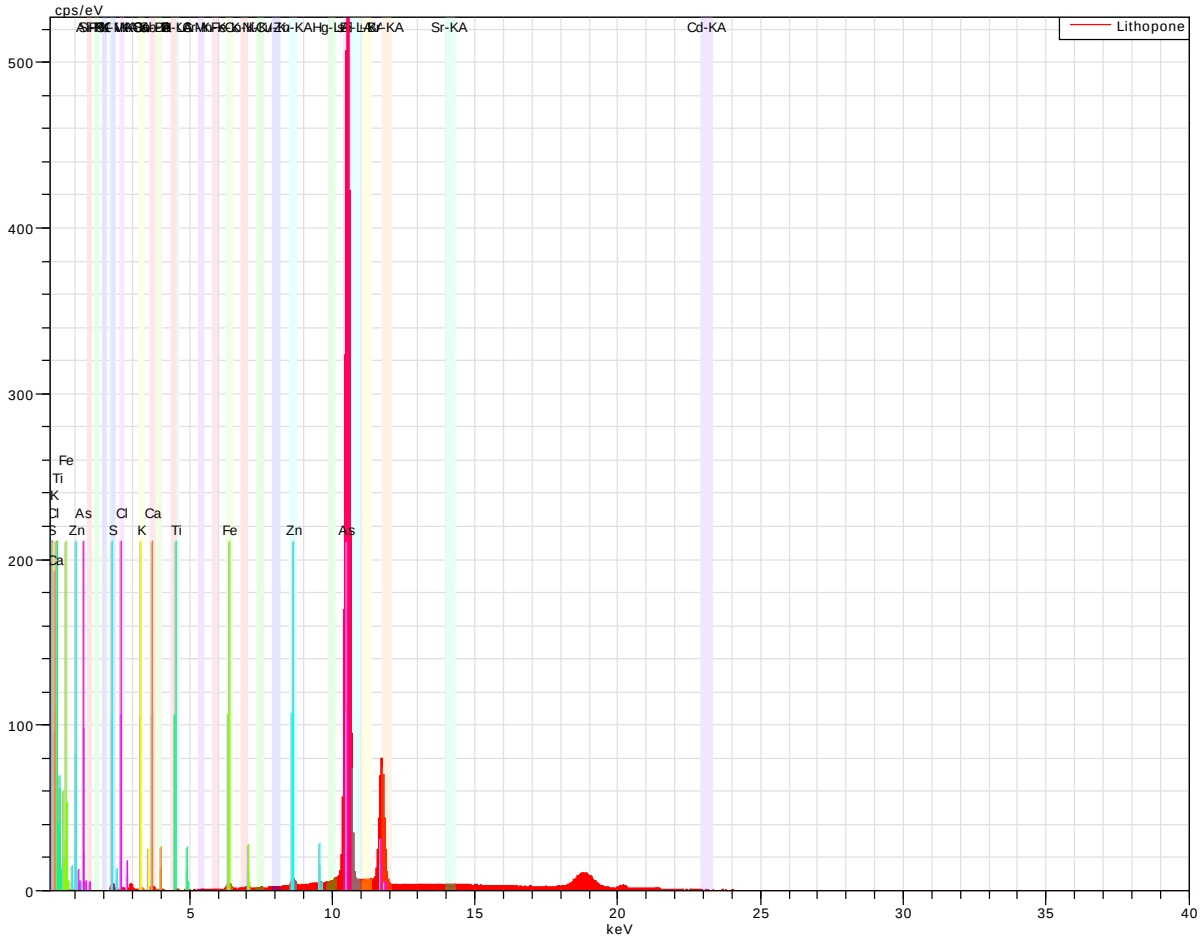
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	13737	43.74	44.65
Cl	17	6445	35.17	40.59
Fe	26	19602	9.20	6.74
Cu	29	15185	5.33	3.43
K	19	514	2.44	2.55
Pb	82	3499	2.23	0.44
Ti	22	1129	1.76	1.50
Mn	25	206	0.12	0.09
	Total:		100.00	100.00



Cobalt green

Spectrum:

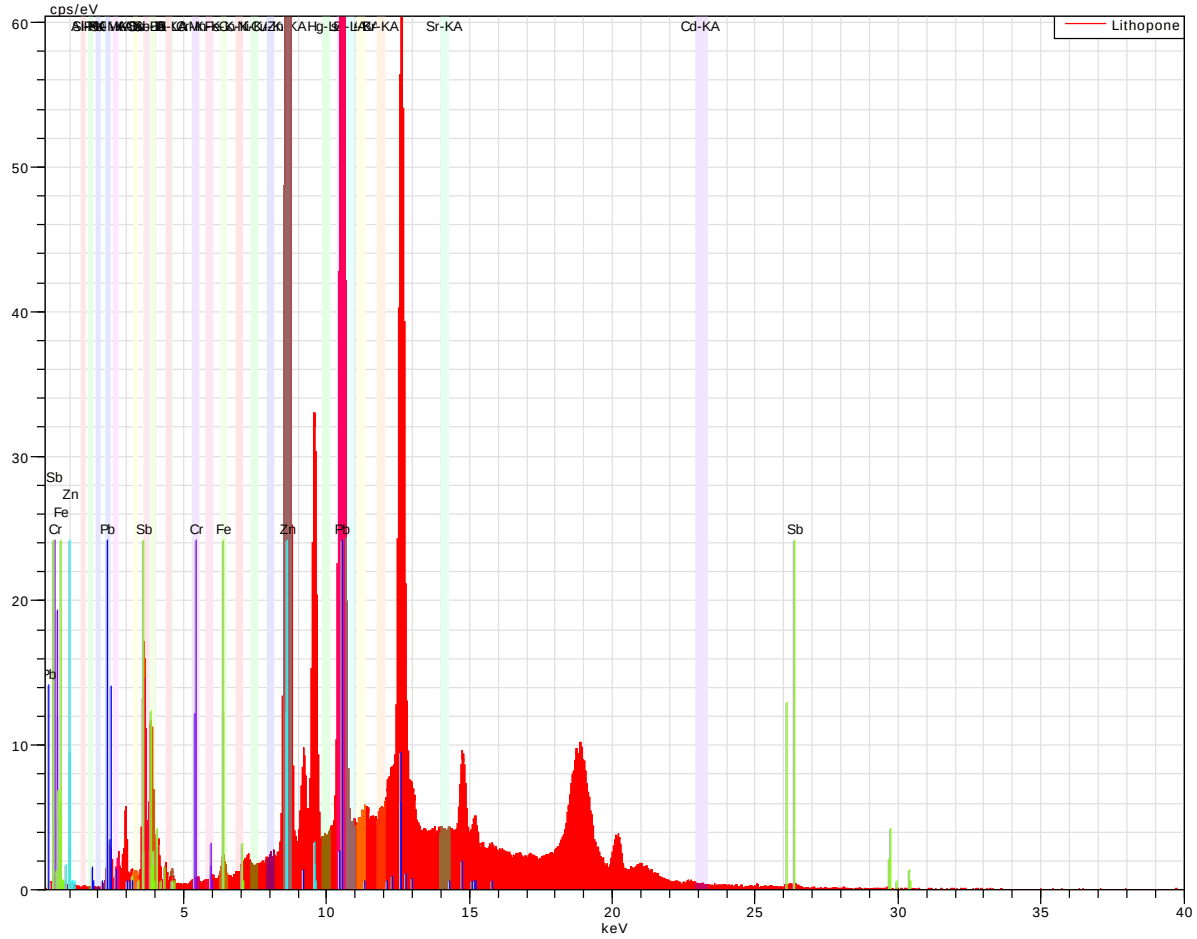
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ti	22	62405	28.01	30.22
Ni	28	126650	25.94	22.83
Co	27	60858	13.39	11.74
Ca	20	12183	12.72	16.40
Zn	30	43515	12.35	9.76
Fe	26	16128	3.50	3.23
S	16	338	2.10	3.38
Cl	17	256	0.86	1.26
Cr	24	2762	0.85	0.85
K	19	89	0.15	0.20
Mn	25	541	0.14	0.13
	Total:		100.00	100.00



Orpigment

Spectrum:

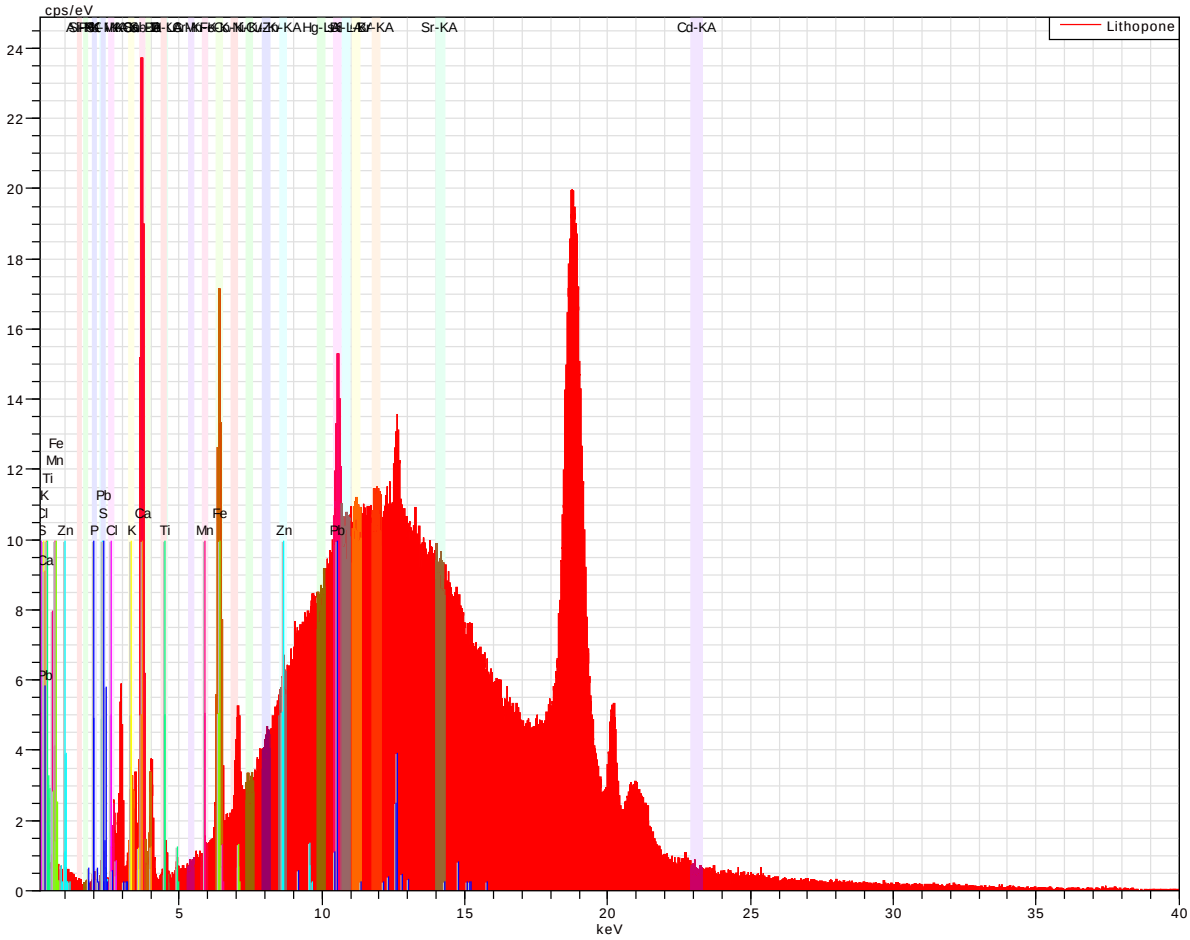
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
As	33	815718	80.94	65.55
S	16	2917	15.11	28.58
Ca	20	2379	1.84	2.79
K	19	845	1.11	1.72
Cl	17	159	0.47	0.81
Fe	26	4249	0.28	0.30
Zn	30	5080	0.19	0.18
Ti	22	264	0.06	0.08
	Total:		100.00	100.00



Naples yellow

Spectrum:

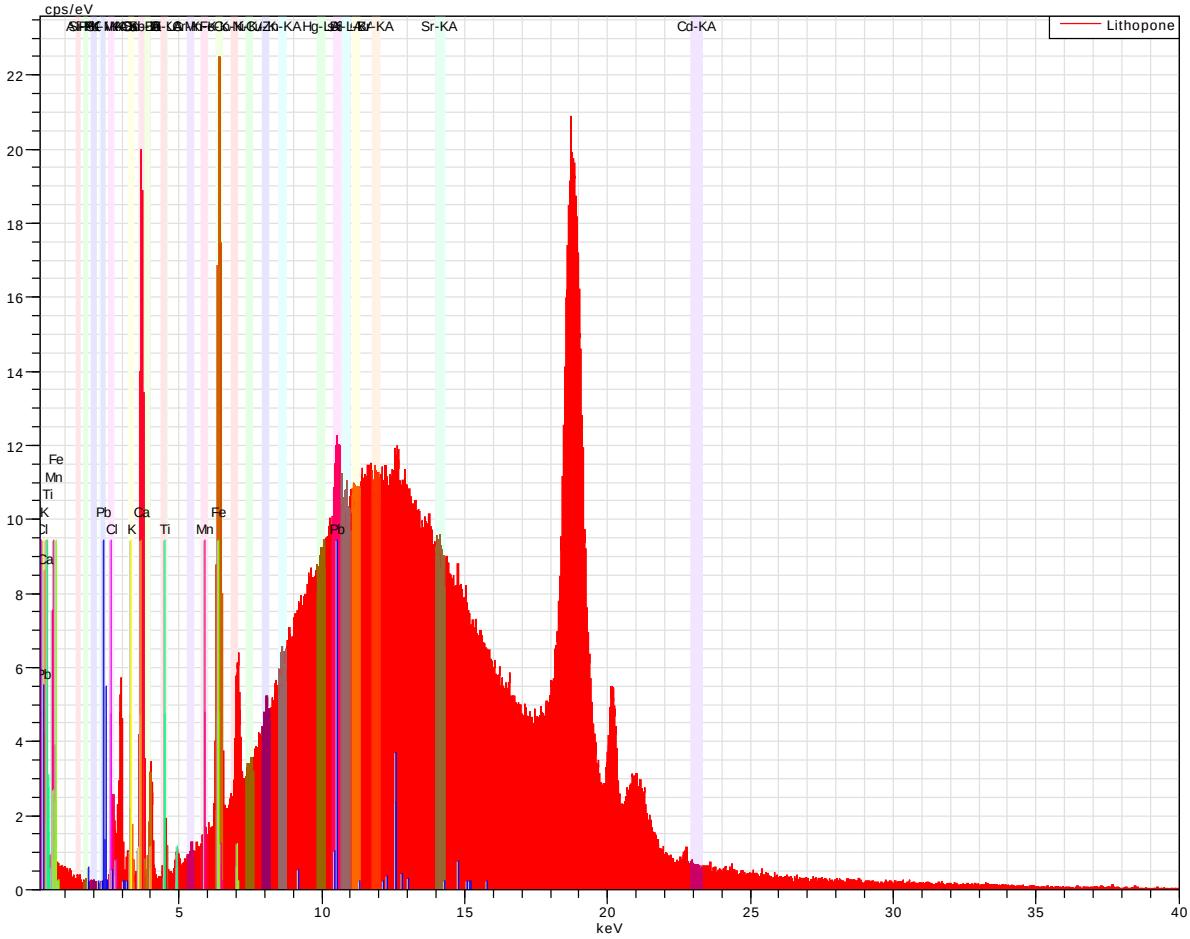
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Pb	82	199041	55.46	34.06
Sb	51	595	23.13	24.17
Zn	30	222150	21.12	41.11
Fe	26	1552	0.21	0.48
Cr	24	340	0.07	0.18
		Total:	100.00	100.00



Yellow lake reseda

Spectrum:

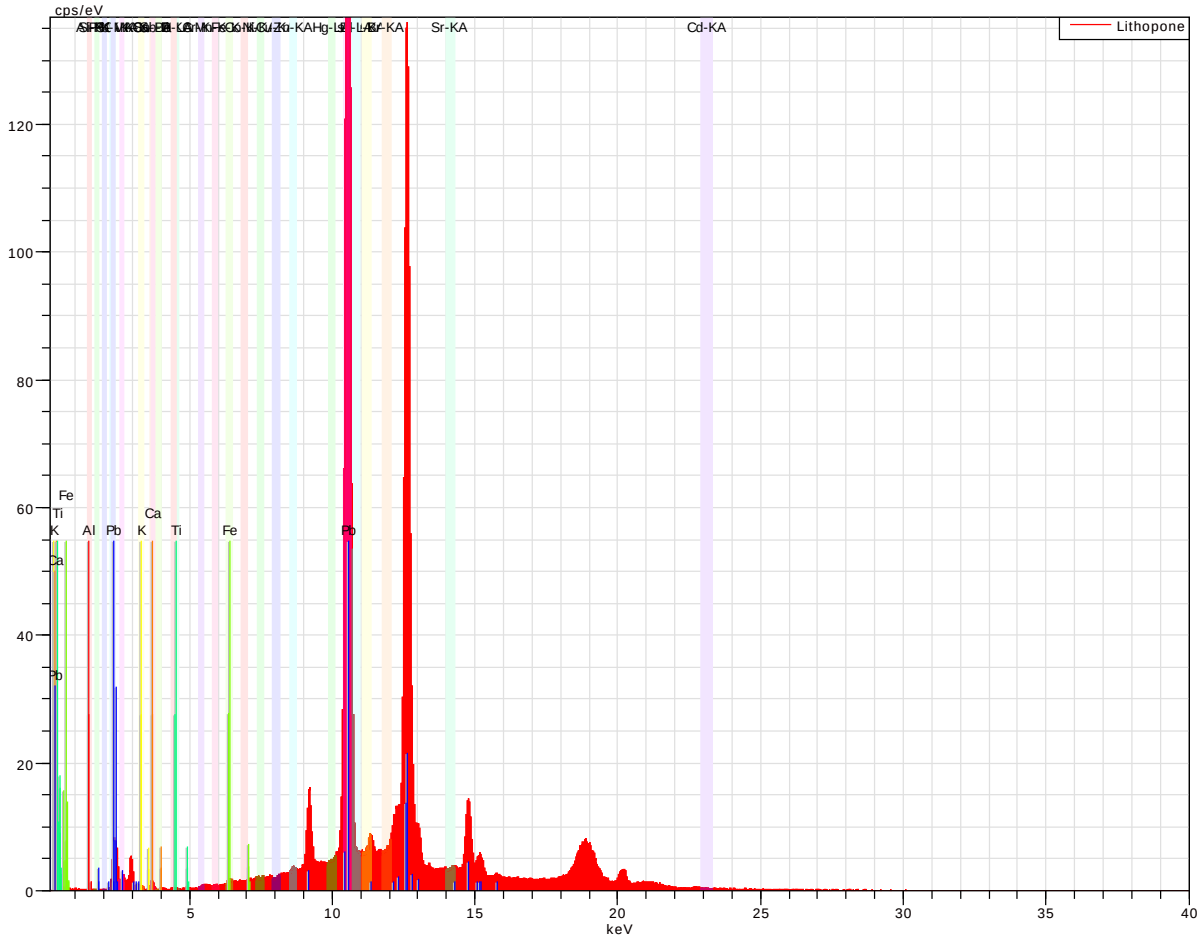
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	18451	63.20	67.76
Fe	26	15799	10.09	7.76
K	19	1861	7.85	8.63
Pb	82	9406	7.66	1.59
P	15	187	5.96	8.26
S	16	281	3.05	4.09
Ti	22	899	1.90	1.71
Zn	30	523	0.22	0.14
Mn	25	87	0.07	0.06
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Lac dye

Spectrum:

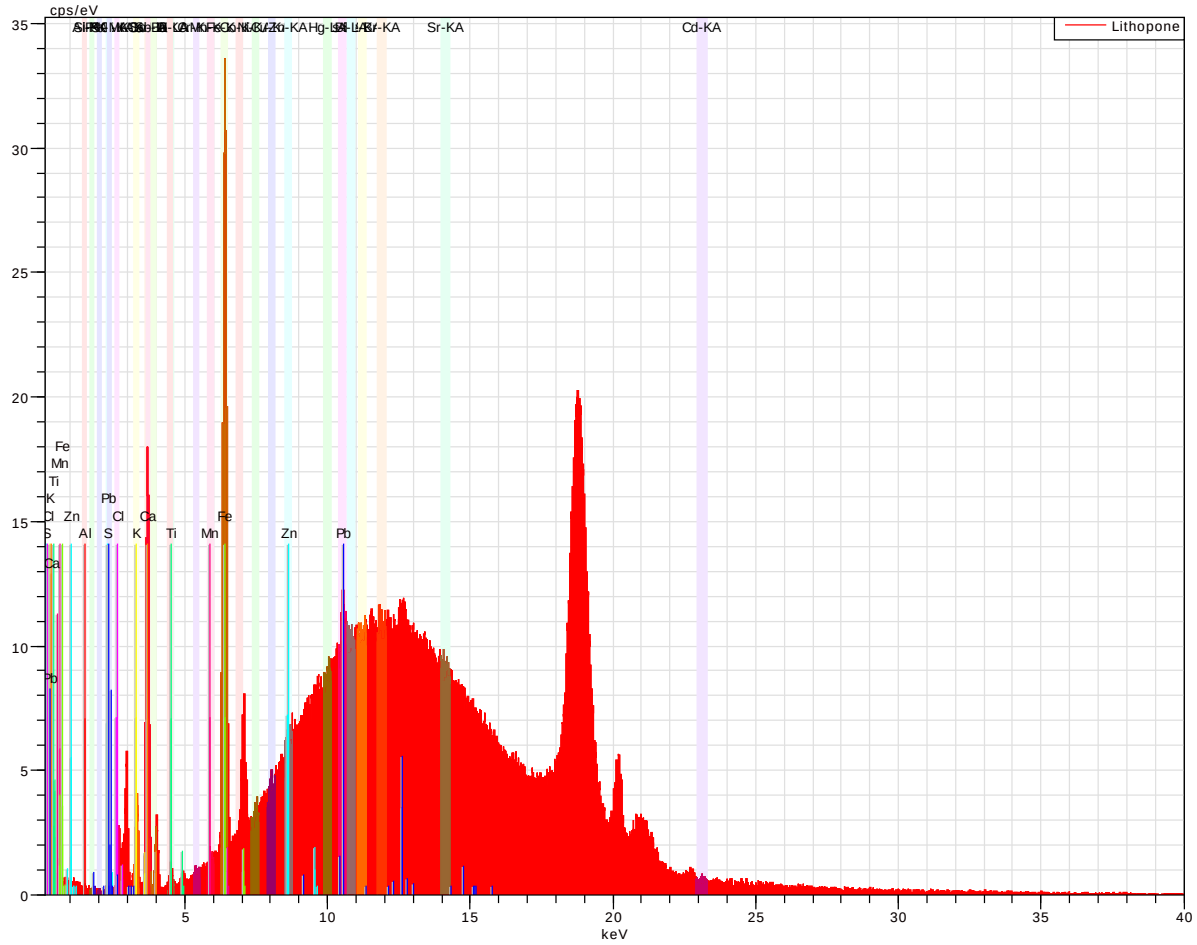
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	16813	65.65	73.25
Fe	26	22340	19.64	15.72
K	19	1170	5.48	6.27
Pb	82	4400	5.34	1.15
Ti	22	1345	3.60	3.36
Mn	25	271	0.30	0.24
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Red lead

Spectrum:

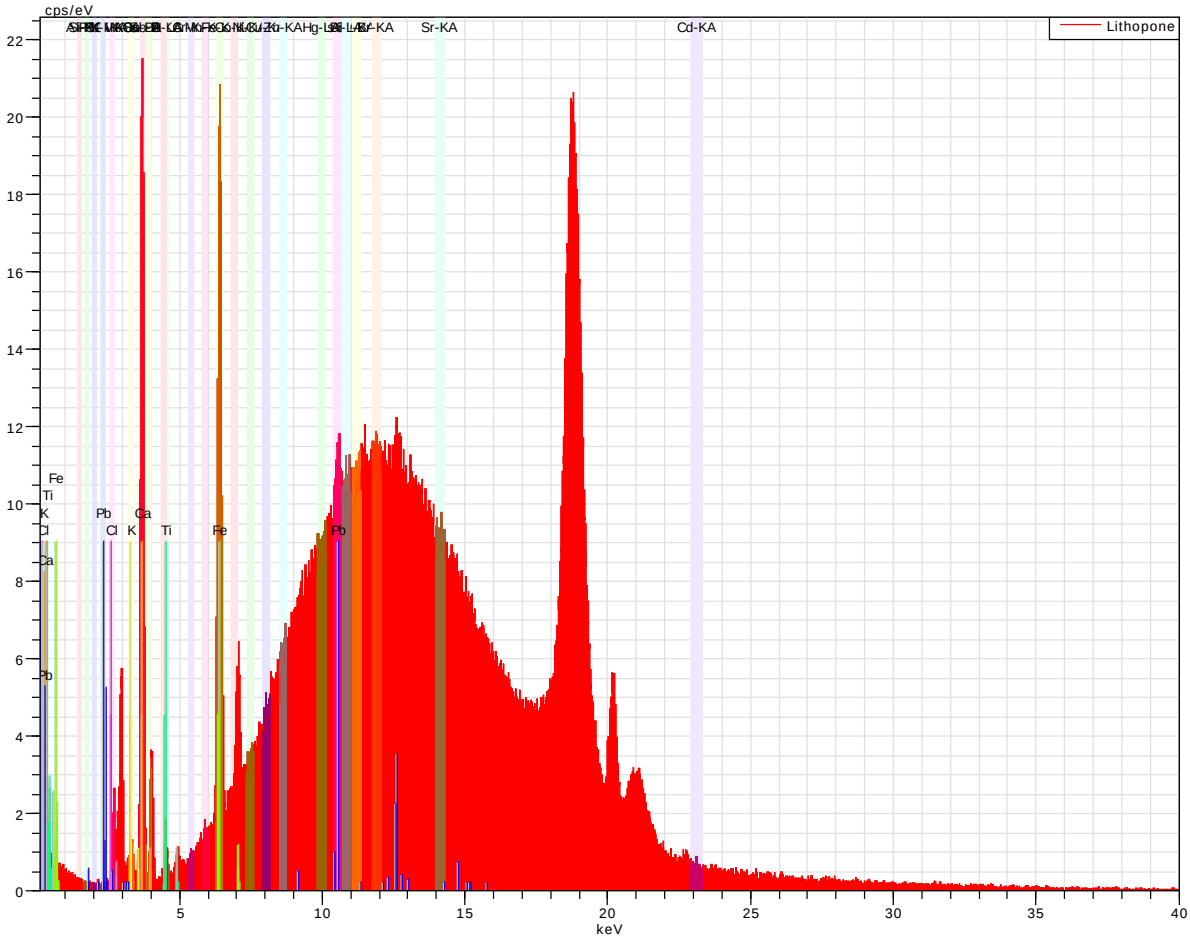
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Pb	82	513573	88.07	50.32
Al	13	28	10.10	44.32
Ca	20	1187	1.27	3.76
K	19	250	0.45	1.35
Fe	26	722	0.07	0.14
Ti	22	126	0.04	0.10
	Total:		100.00	100.00



Van Dyck brown

Spectrum:

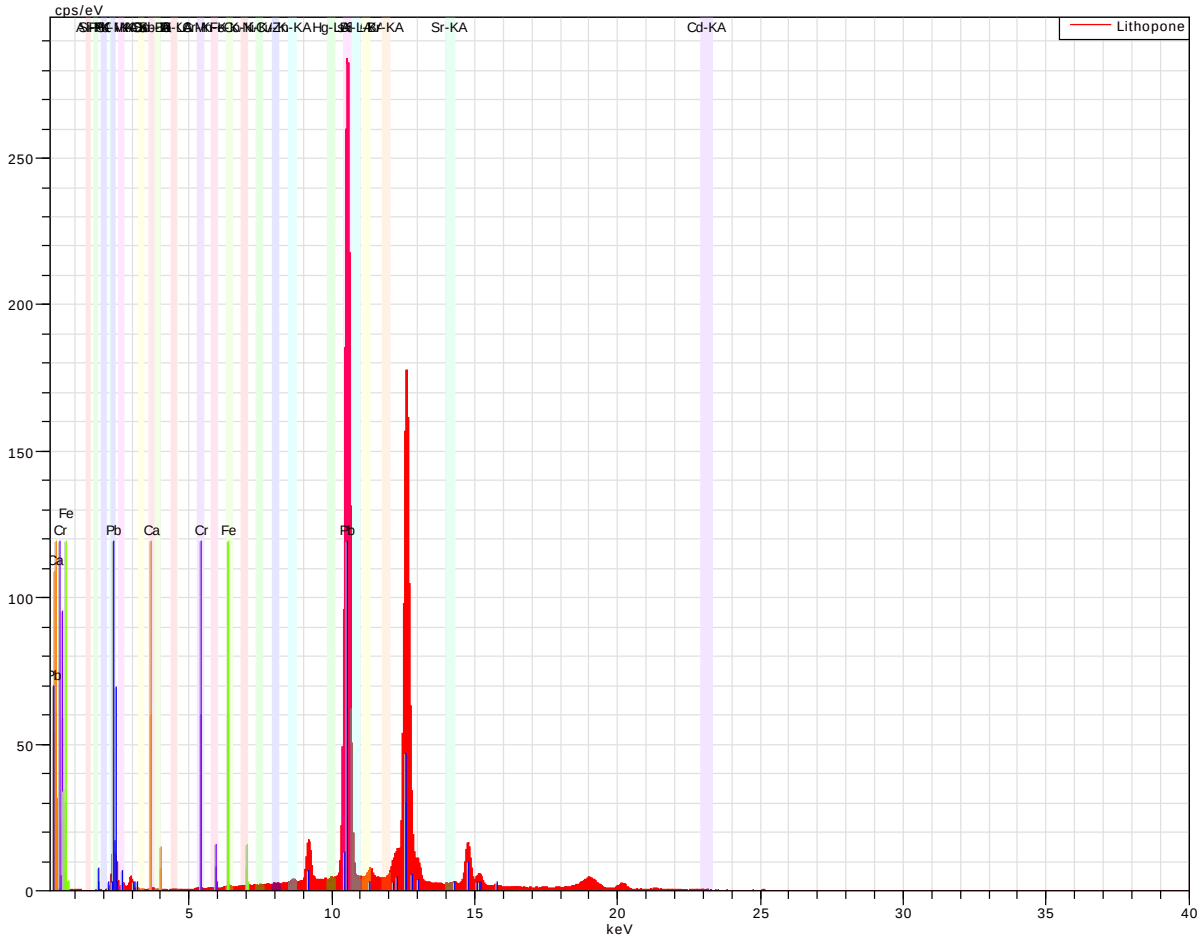
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	11746	54.56	61.03
Fe	26	28824	26.69	21.42
K	19	2177	11.72	13.43
Pb	82	2766	3.83	0.83
Ti	22	613	1.66	1.55
S	16	59	0.89	1.25
Zn	30	513	0.38	0.26
Mn	25	243	0.28	0.23
Al	13	0	0.00	0.00
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Gum Arabic

Spectrum:

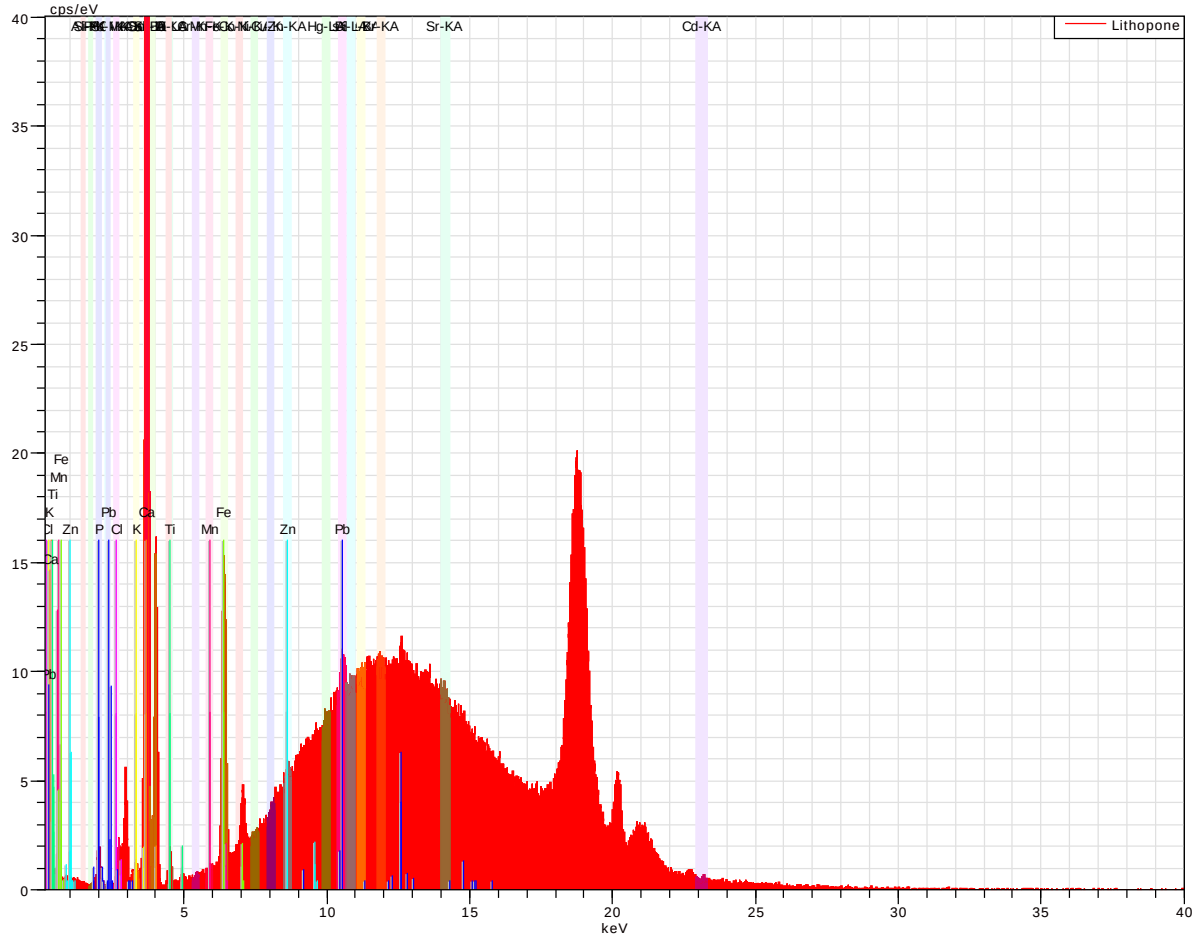
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	17155	69.32	76.44
Fe	26	19746	19.29	15.27
Pb	82	3153	4.18	0.89
Ti	22	1220	3.64	3.36
K	19	741	3.57	4.03
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Lead white

Spectrum:

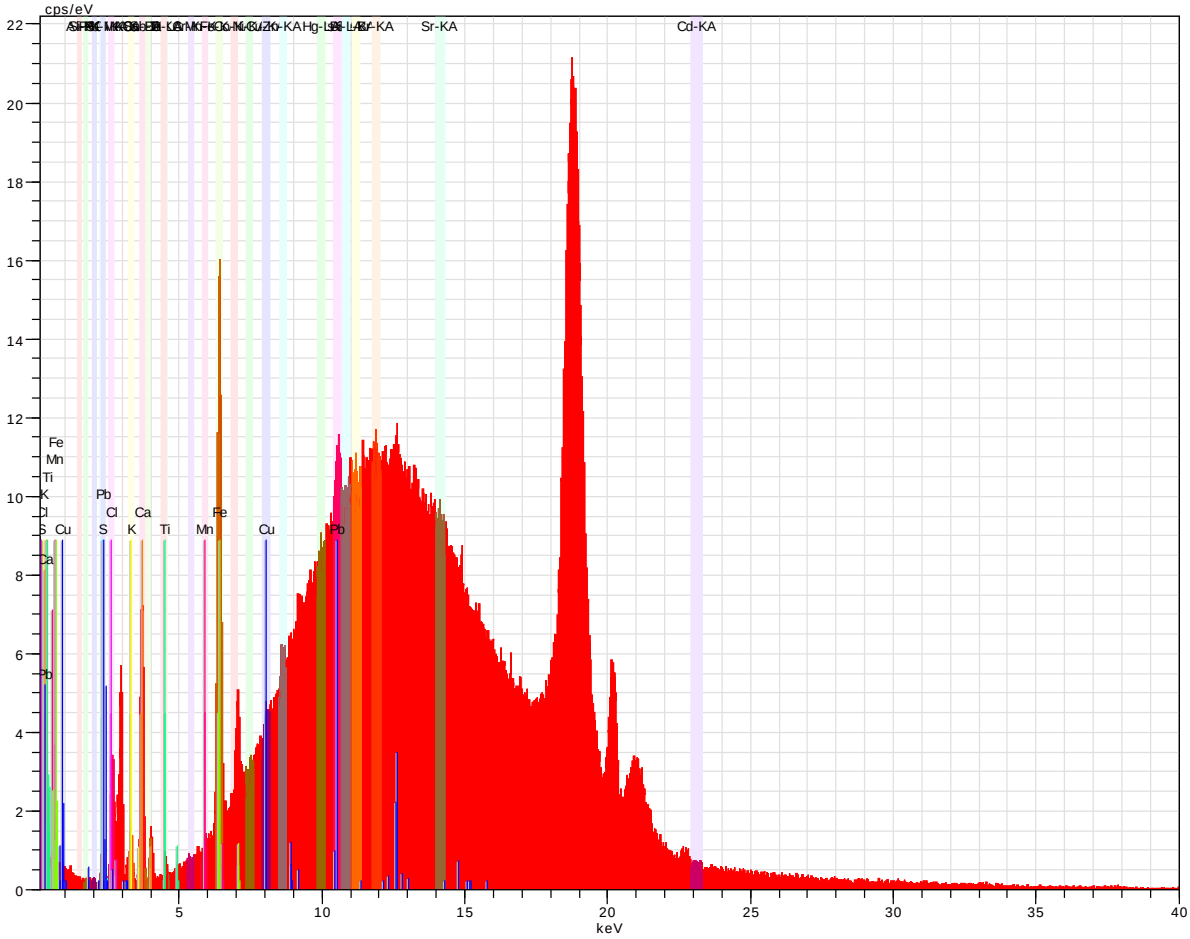
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Pb	82	565391	99.63	98.22
Ca	20	266	0.29	1.46
Fe	26	557	0.05	0.19
Cr	24	204	0.03	0.12
	Total:		100.00	100.00



Ivory black

Spectrum:

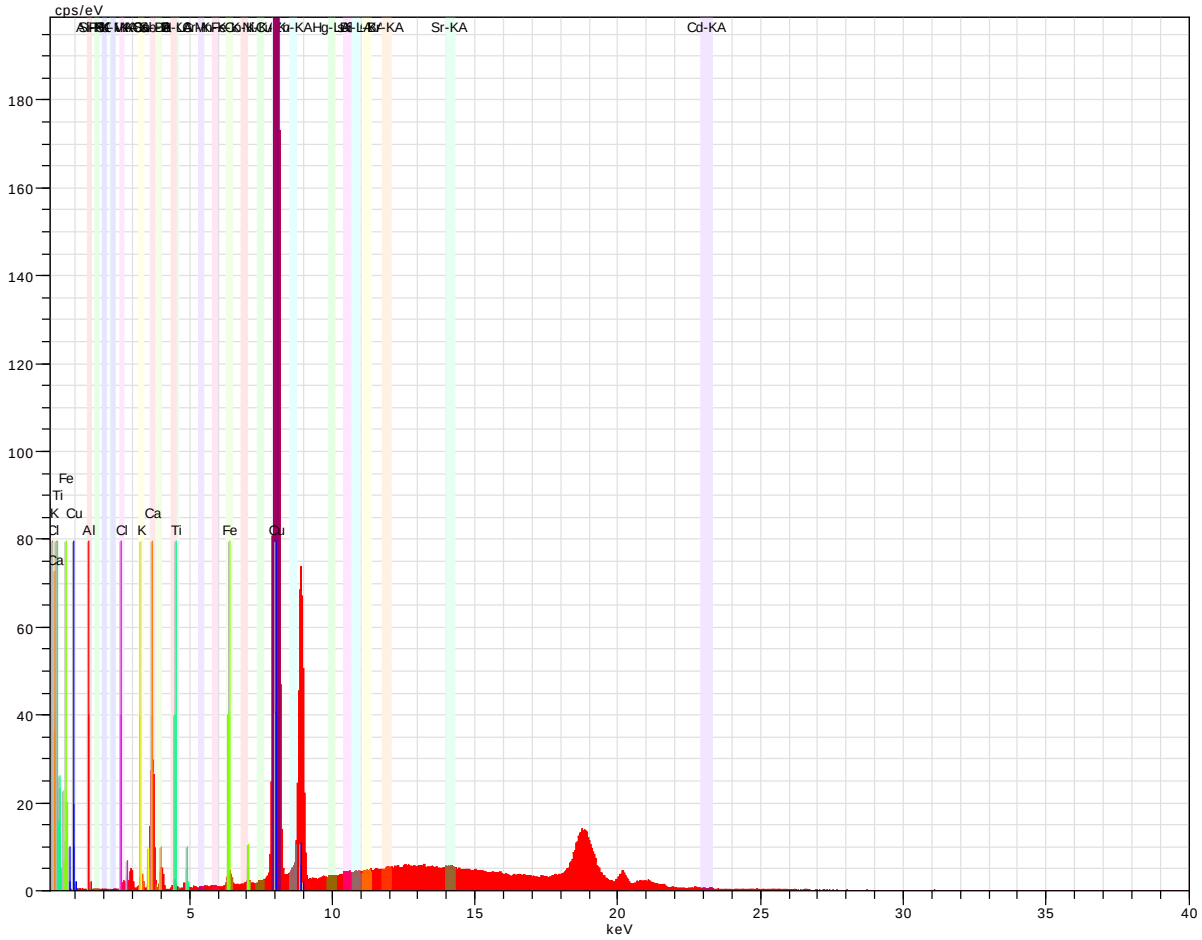
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	86410	82.52	81.53
P	15	1132	11.05	14.12
Fe	26	14937	3.73	2.65
Ti	22	1403	1.23	1.02
Pb	82	3402	0.93	0.18
K	19	387	0.42	0.43
Zn	30	449	0.07	0.04
Mn	25	162	0.05	0.04
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Indigo

Spectrum:

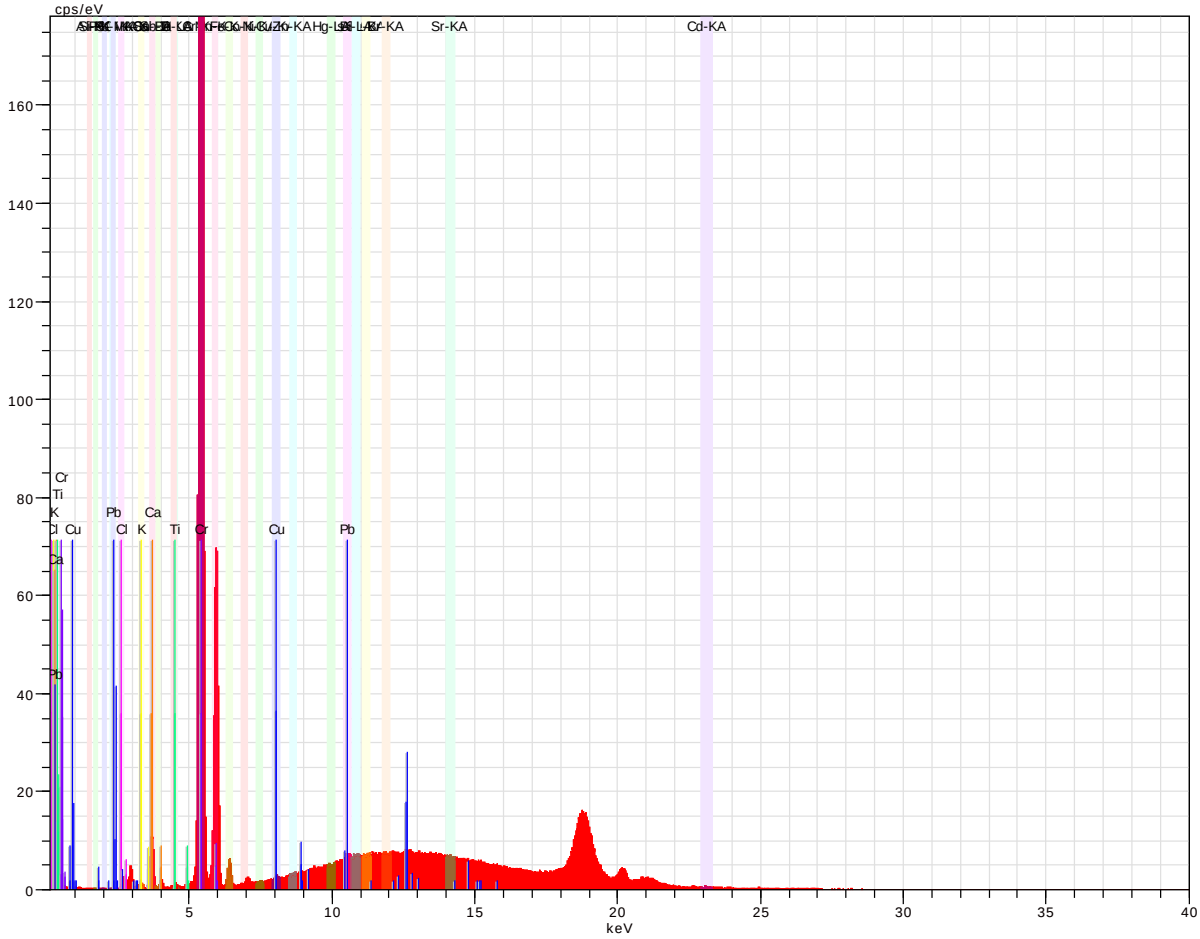
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	6058	42.28	44.45
Cl	17	1542	20.20	24.01
Fe	26	15715	16.45	12.41
K	19	942	8.99	9.69
S	16	288	5.28	6.93
Pb	82	3544	5.03	1.02
Ti	22	401	1.33	1.17
Cu	29	280	0.23	0.15
Mn	25	167	0.22	0.17
		Total:	100.00	100.00



Egyptian blue

Spectrum:

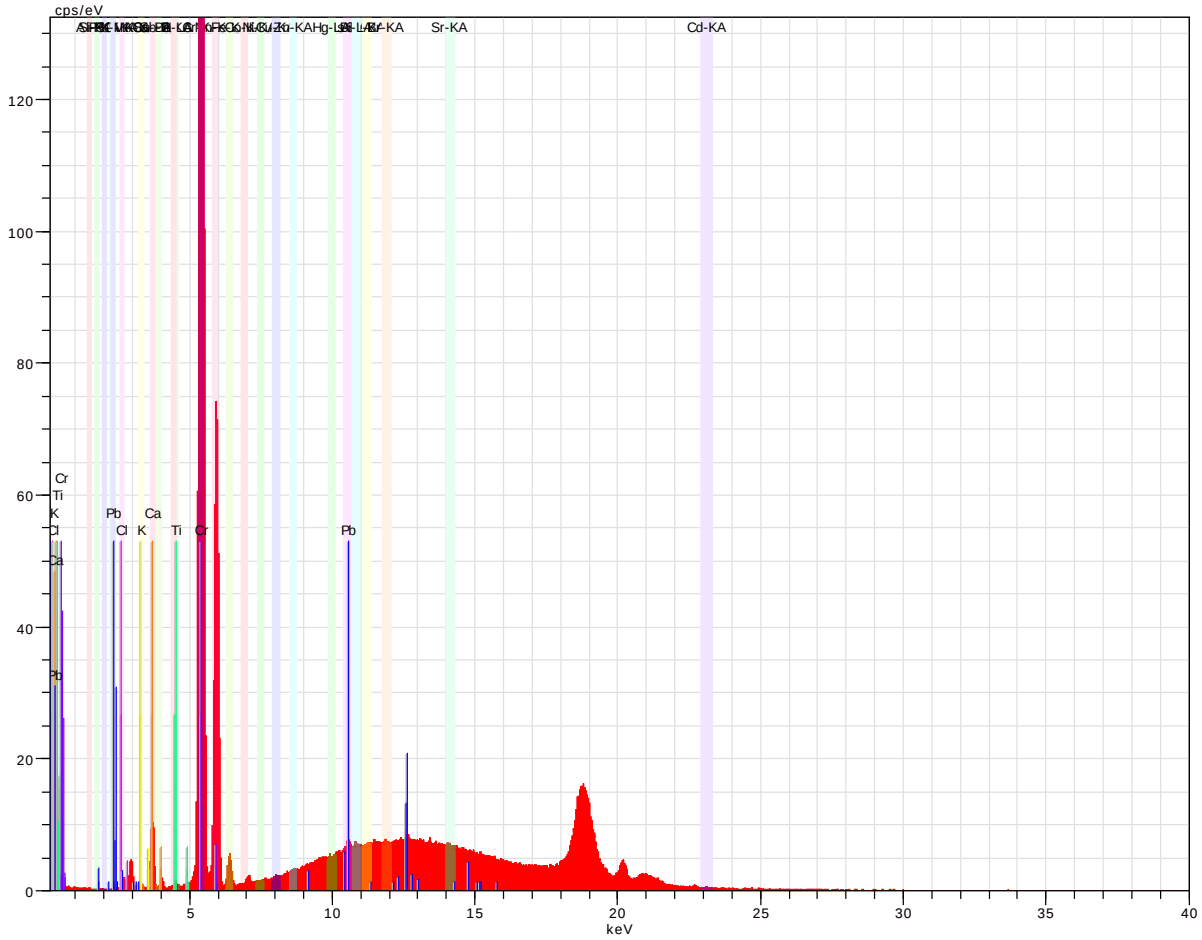
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Cu	29	507328	51.55	34.44
Al	13	43	27.73	43.63
Ca	20	22408	16.78	17.78
K	19	2191	2.59	2.81
Cl	17	242	0.63	0.75
Ti	22	1419	0.41	0.36
Fe	26	3534	0.31	0.23
	Total:		100.00	100.00



Viridian

Spectrum:

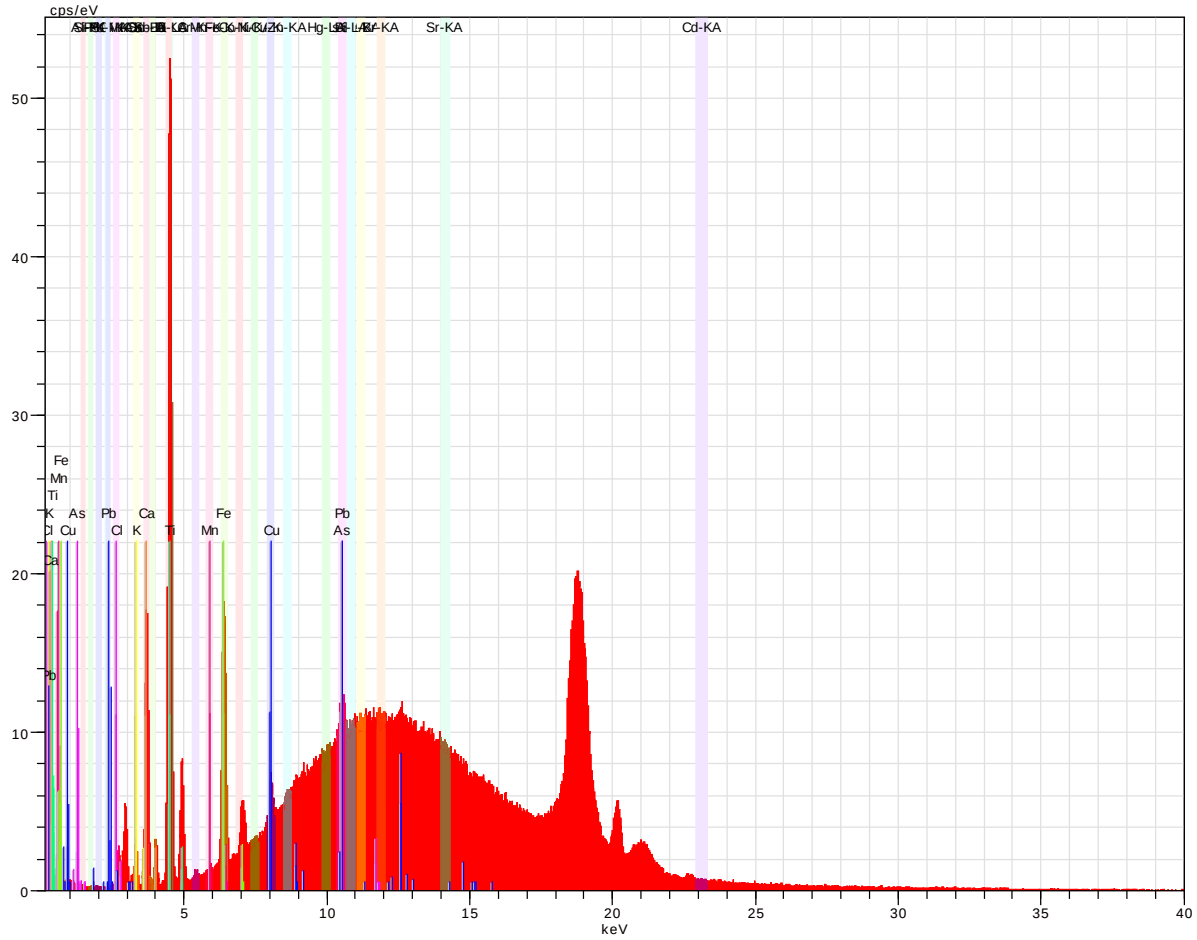
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Cr	24	446218	94.05	93.14
Ca	20	7938	4.30	5.52
K	19	836	0.71	0.94
Pb	82	1608	0.69	0.17
Cu	29	559	0.14	0.12
Ti	22	519	0.10	0.11
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Chrome green

Spectrum:

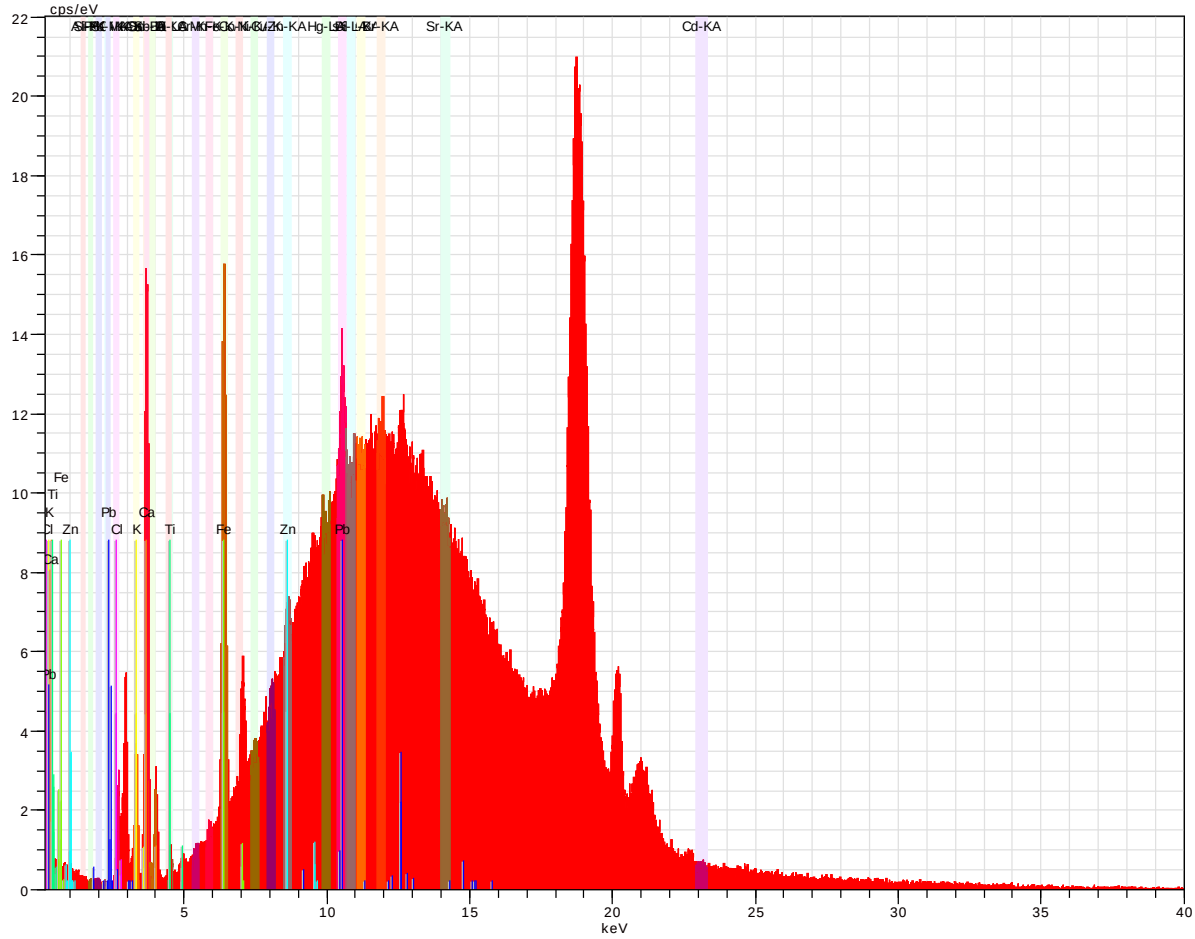
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Cr	24	476132	94.97	94.26
Ca	20	7740	3.91	5.03
Pb	82	1675	0.69	0.17
K	19	382	0.31	0.40
Ti	22	650	0.12	0.13
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Saffron

Spectrum:

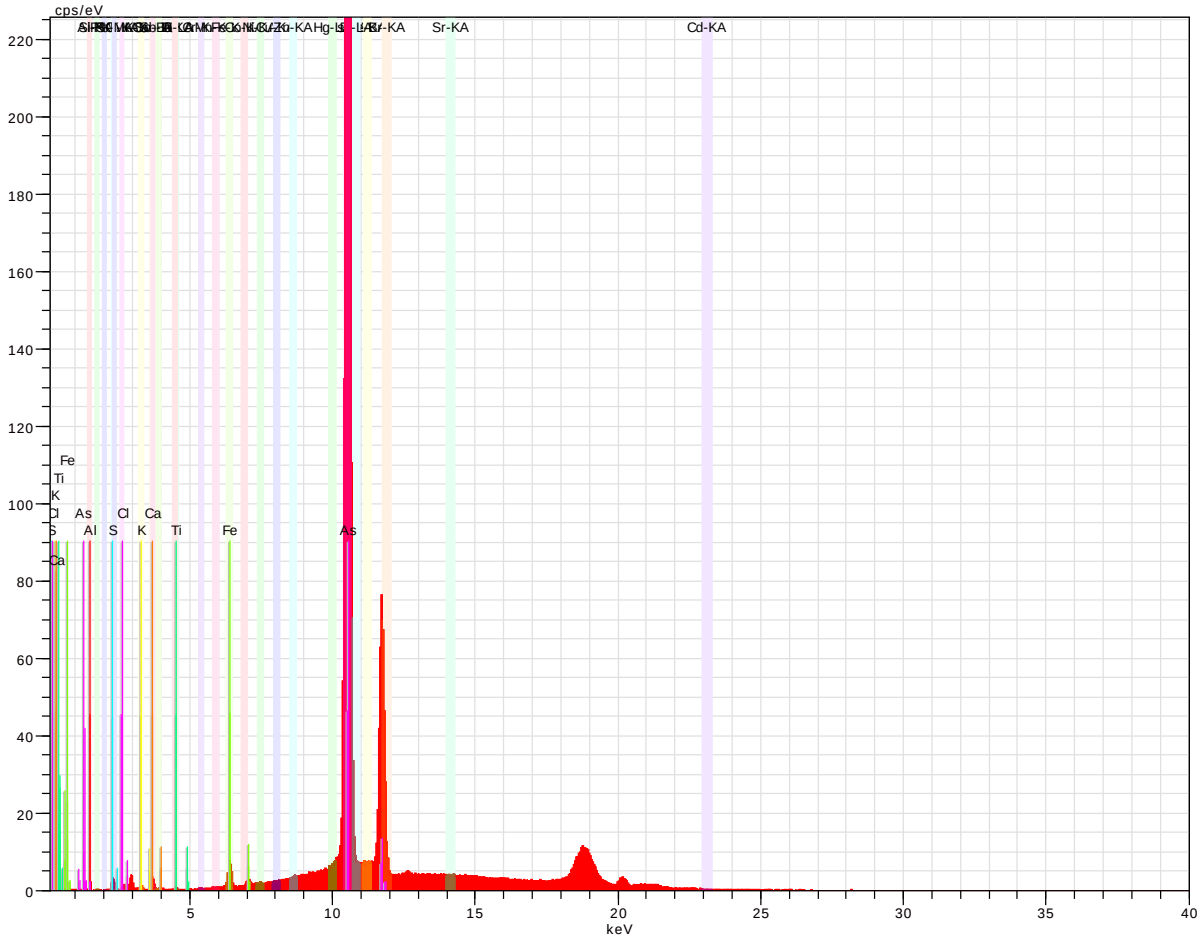
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ti	22	51193	53.79	52.20
Ca	20	15075	27.22	31.56
Fe	26	18453	10.13	8.43
K	19	2084	5.04	5.99
Pb	82	2669	1.82	0.41
Cu	29	3071	1.21	0.89
As	33	1779	0.66	0.41
Mn	25	180	0.13	0.11
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Gambosse

Spectrum:

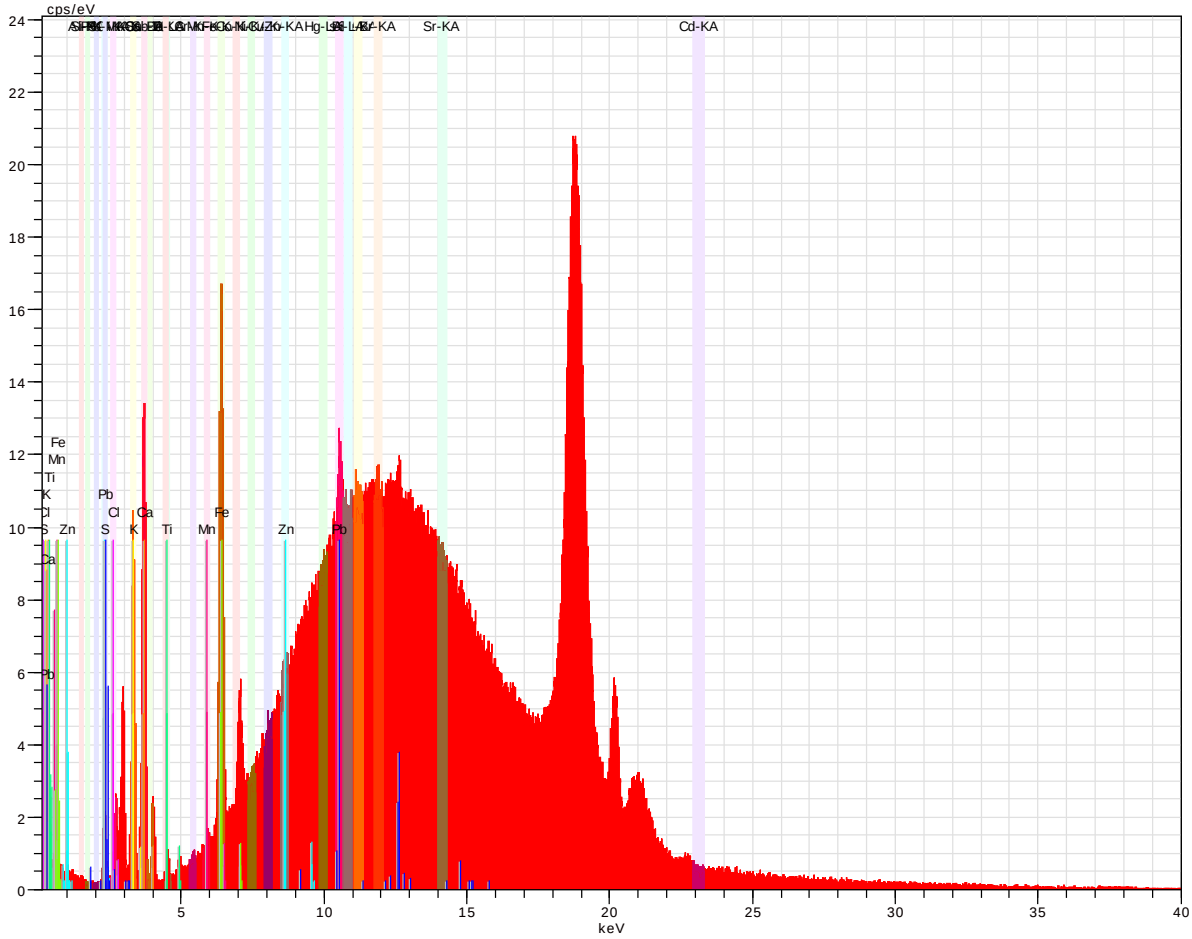
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	13265	63.35	70.49
Fe	26	15395	13.96	11.15
K	19	2380	12.79	14.59
Pb	82	6026	7.32	1.58
Ti	22	603	1.77	1.65
Zn	30	1300	0.81	0.55
Cl	17	0	0.00	0.00
	Total:		100.00	100.00



Realgar

Spectrum:

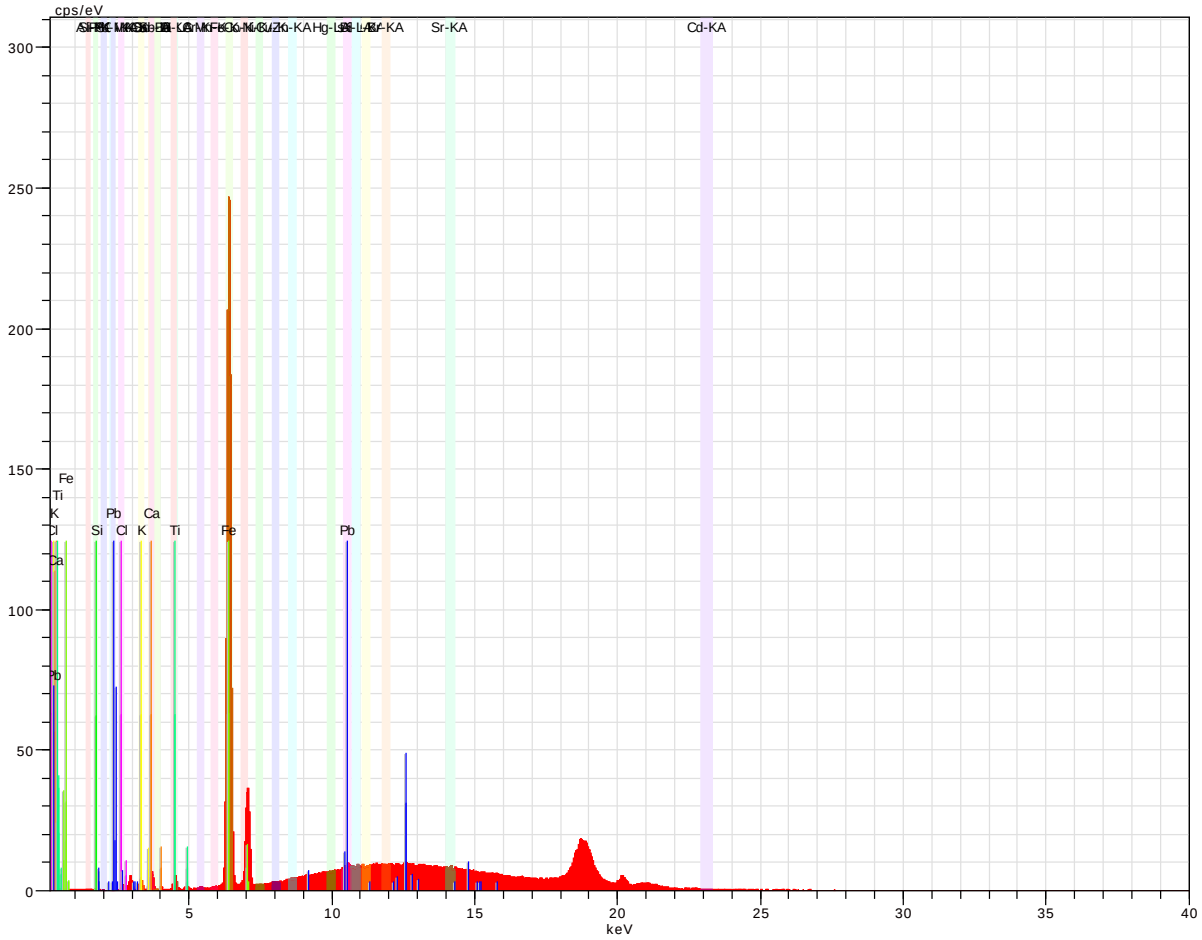
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
As	33	717857	64.37	41.72
Al	13	30	20.46	36.81
S	16	1977	10.40	15.75
Ca	20	3191	2.45	2.97
K	19	946	1.23	1.53
Cl	17	170	0.50	0.69
Fe	26	7365	0.48	0.41
Ti	22	512	0.12	0.12
	Total:		100.00	100.00



Madder lake

Spectrum:

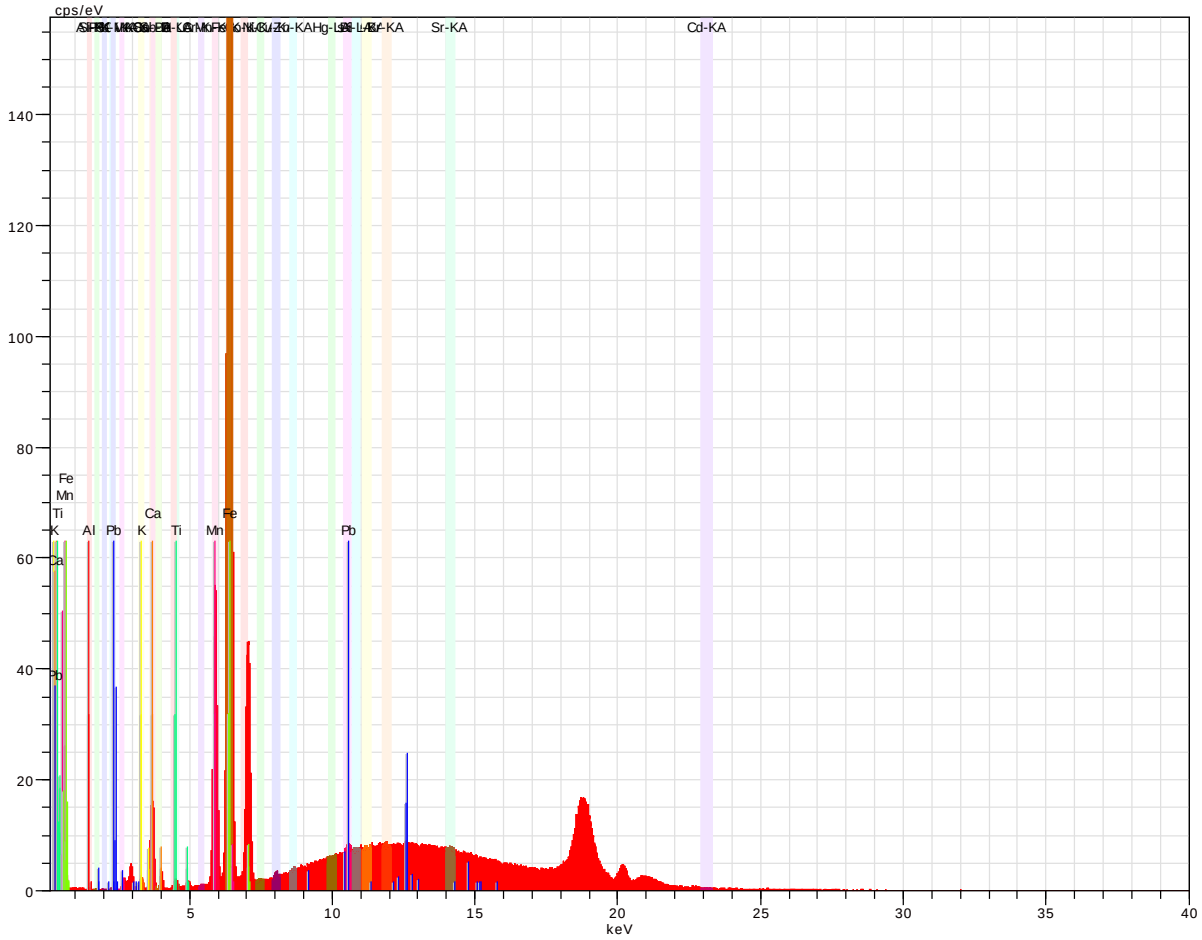
El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Ca	20	12329	47.49	49.00
K	19	8015	29.33	31.02
Fe	26	18195	10.23	7.58
S	16	970	7.98	10.29
Pb	82	4640	3.19	0.64
Ti	22	734	1.38	1.19
Zn	30	617	0.23	0.14
Mn	25	252	0.18	0.14
Cl	17	0	0.00	0.00
		Total:	100.00	100.00



Red ochre

Spectrum:

El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Fe	26	256036	62.10	49.51
Si	14	232	21.76	34.49
Ca	20	4916	6.33	7.04
K	19	2973	5.84	6.65
Ti	22	4596	2.05	1.91
Pb	82	3241	1.92	0.41
Cl	17	0	0.00	0.00
	Total:		100.00	100.00

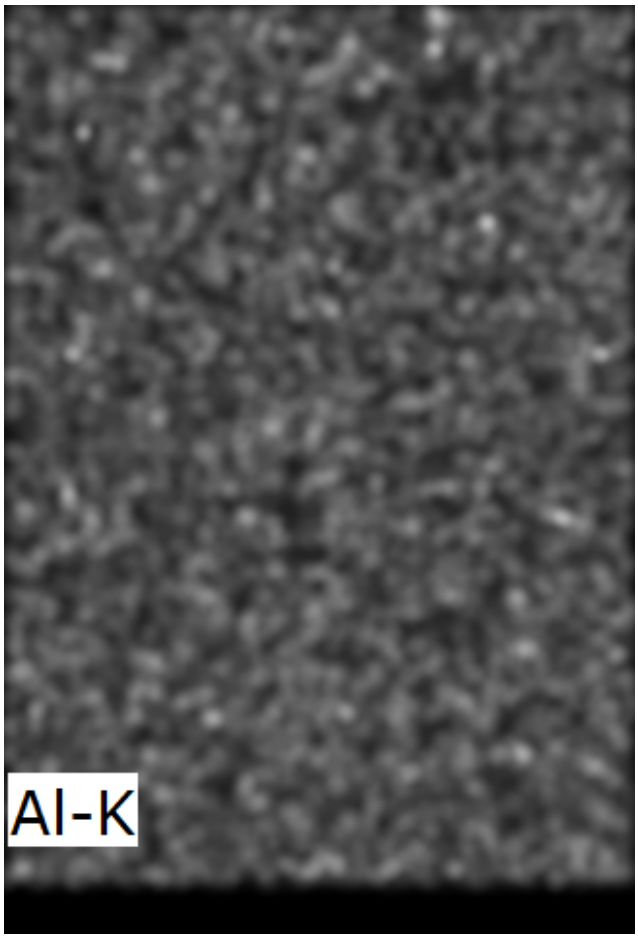


Raw umber

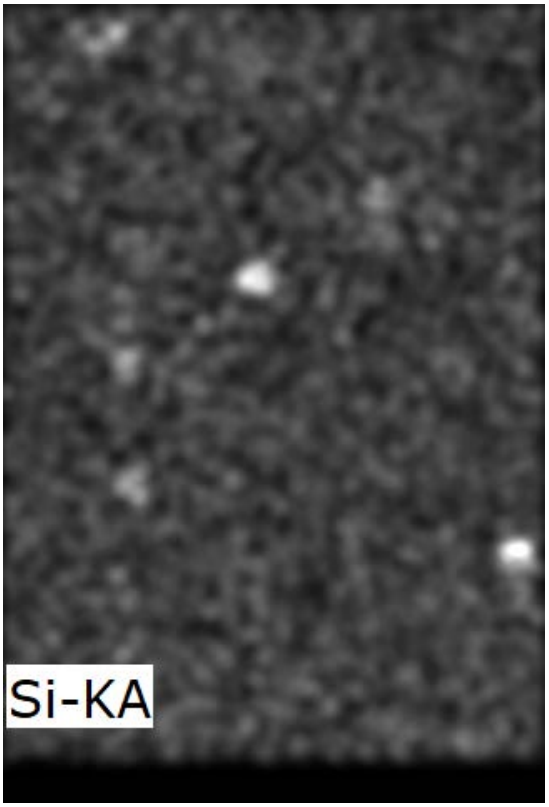
Spectrum:

El	AN	Net	norm. C [wt.%]	Atom. C [at.%]
Fe	26	319917	64.66	55.94
Mn	25	49776	10.94	9.63
Ca	20	12538	10.84	13.07
Al	13	12	10.23	18.32
K	19	1394	1.89	2.33
Pb	82	1760	0.95	0.22
Ti	22	1475	0.48	0.49
	Total:		100.00	100.00

The elements and the counts per pigment



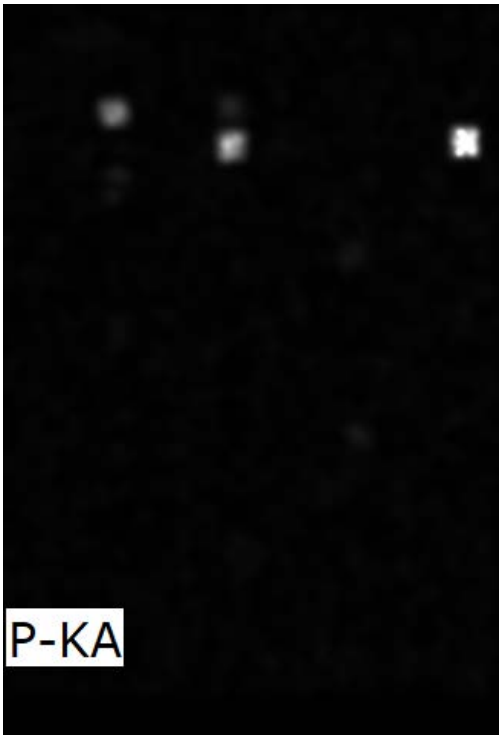
Al-K,
Too little counts per pigment



Si-KA,

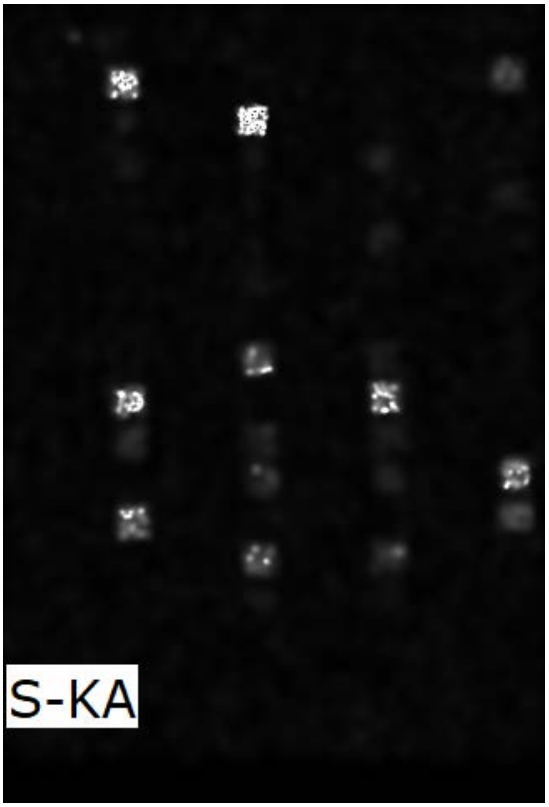
All counts below 1

Counts	Area	Si-KA
Red ochre	196	0,9
Cobalt blue	182	0,87
Yellow ochre	210	0,53



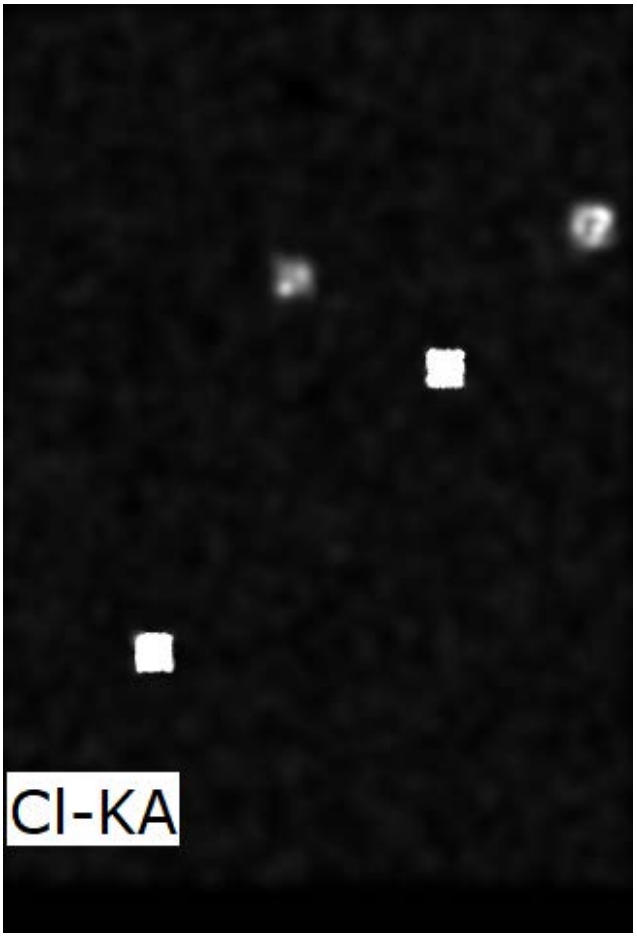
P-KA,

Counts	Area	P-KA
Ivory black	195	4,48
Bone black	196	2,95
Chalk	210	2,06



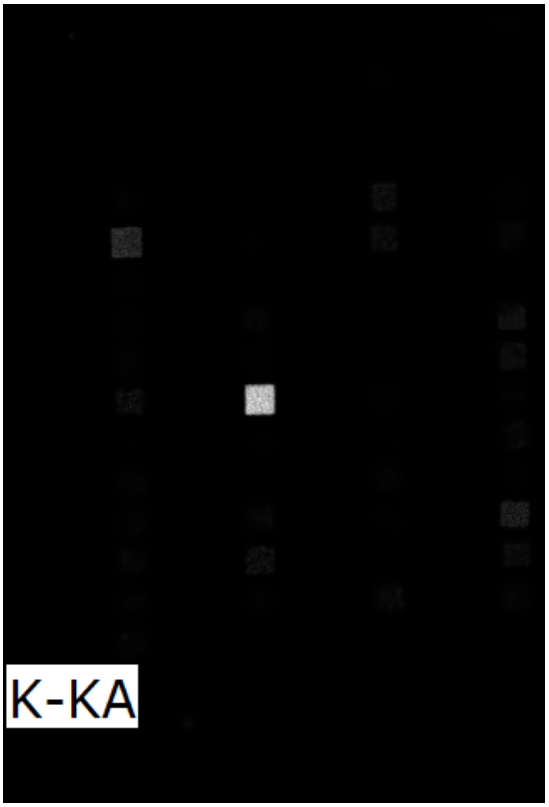
S-KA,

Counts	Area	S-KA
Gypsum	196	12,47
Cadmium yellow	256	7,24
Lithopone	240	7,1
Orpigment	225	6,27
Realgar	210	5,72
Vermillion	238	4,98
Cadmium green	169	3,85
Cadmium red	240	3,8



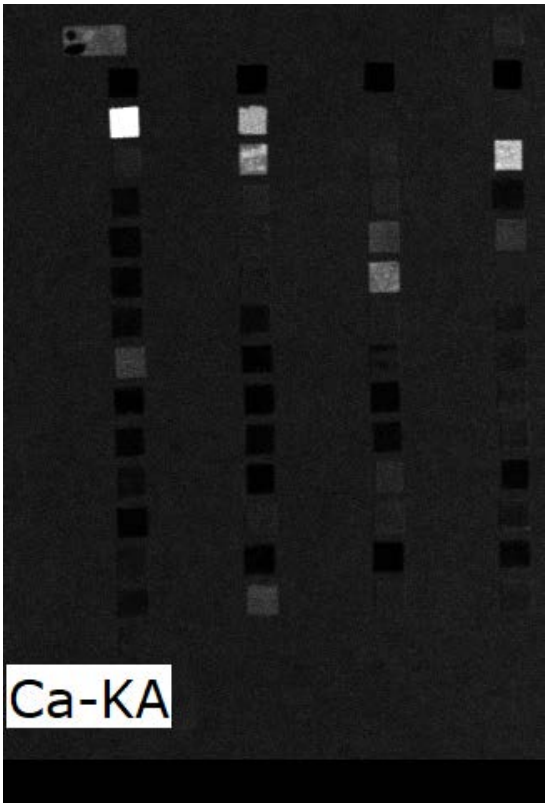
Cl-KA,

Counts	Area	Cl-KA
Phthalo green	196	20,8
Alizarin	240	18,3
Indigo	210	3,3
Phthalo blue	225	2,68



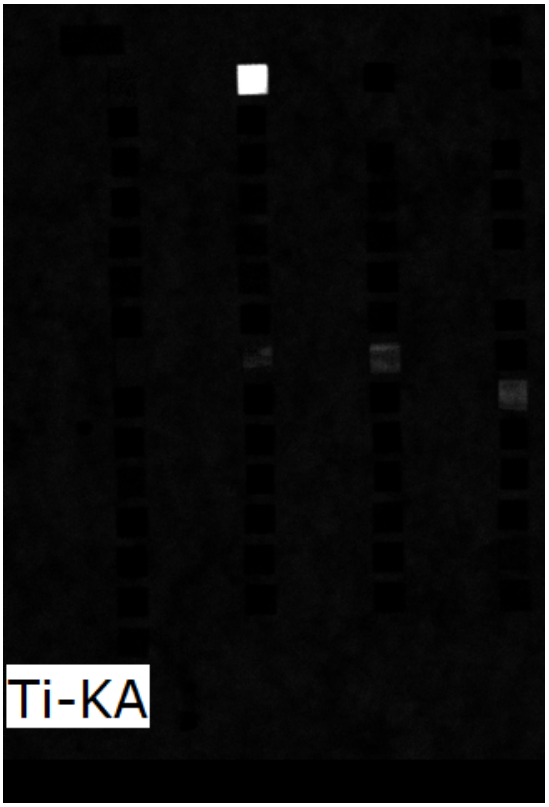
K-KA,

Counts	Area	K-KA
Cobalt yellow	196	196,9
Smalt	210	38,06
Madder lake	224	25,16



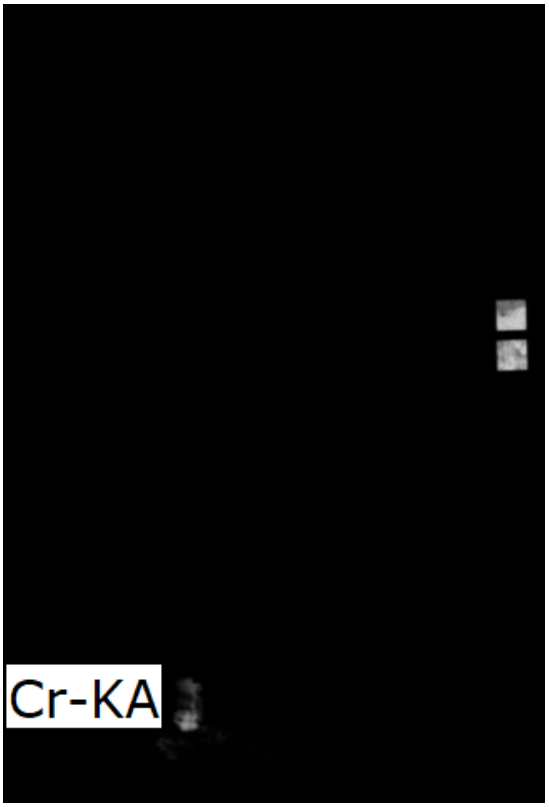
Ca-KA,

Counts	Area	Ca-KA
Chalk	210	728,65
Ivory black	195	339,36
Gypsum	196	311,62
Bone black	196	281,06
Blue bice	168	201,21
Ultramarine nat.	240	107,81
Burnt sienna	240	106,62
Green earth	182	104,52
Egyptian blue	182	92,81
Yellow lake reseda	196	70,51
Gum Arabic	196	66,23
Vine black	156	64,76
Maya blue	196	64,39
Lamp black	210	62,72
Prussian blue	240	62,36
Lac dye	210	60,14
Carmine lake	195	55,73
Phthalo green	196	52,82
Van Dyck brown	169	52,7
Saffron	210	52,44
Raw umber	182	51,37
Phthalo blue	225	50,9



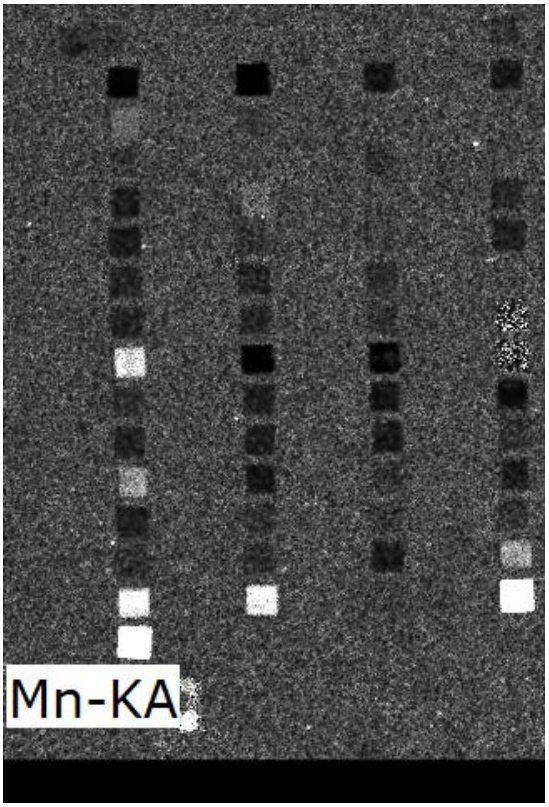
Ti-KA,

	Counts	Area	Ti-KA
Titanium white	196	1834,1	
Saffron	210	194,23	
Cobalt green	224	167,79	
Cadmium green	169	97,62	



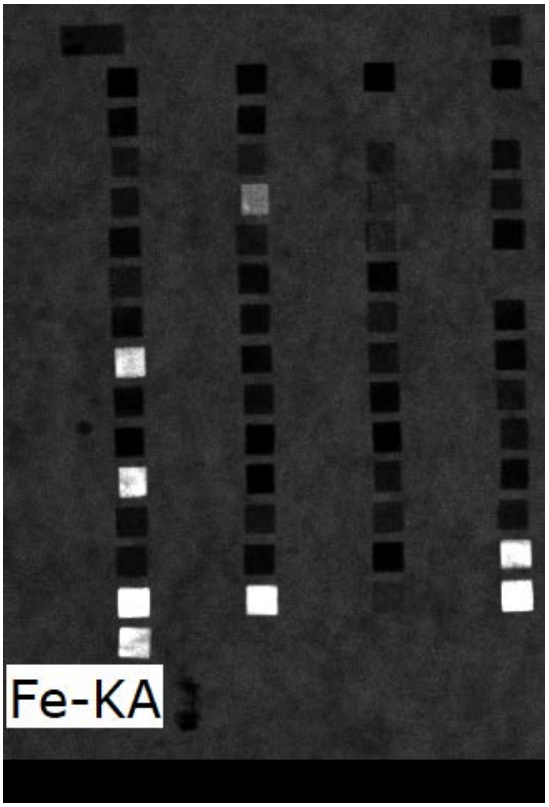
Cr-KA,

	Counts	Area	Cr-KA
Chrome green	182	2030,1	
Viridian	180	1918,6	



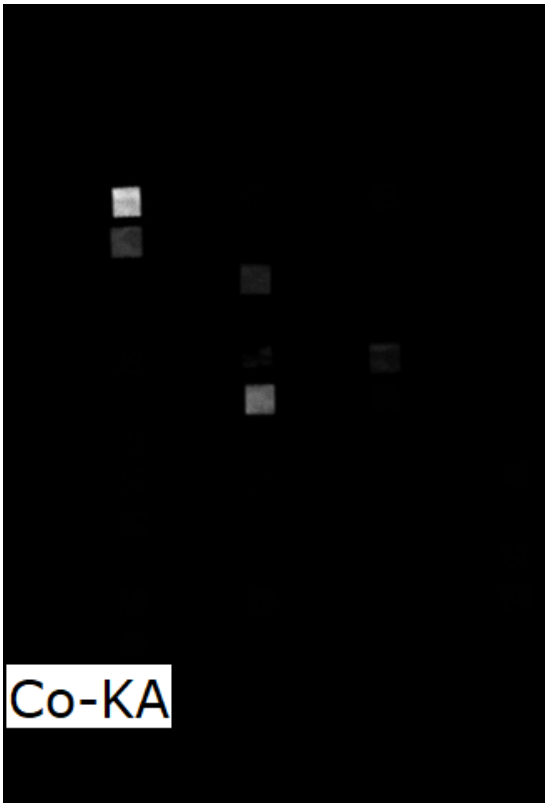
Mn-KA,

Counts	Area	Mn-KA
Raw umber	182	243,3
Burnt umber	182	170,53
Raw sienna	224	31,29
Burnt sienna	240	30,8
Green earth	182	25,5
Red ochre	196	17,32
Yellow ochre	210	16,84
Chalk	210	11,51
Prussian blue	240	11,31
Chrome green	182	9,9
Viridian	180	9,5



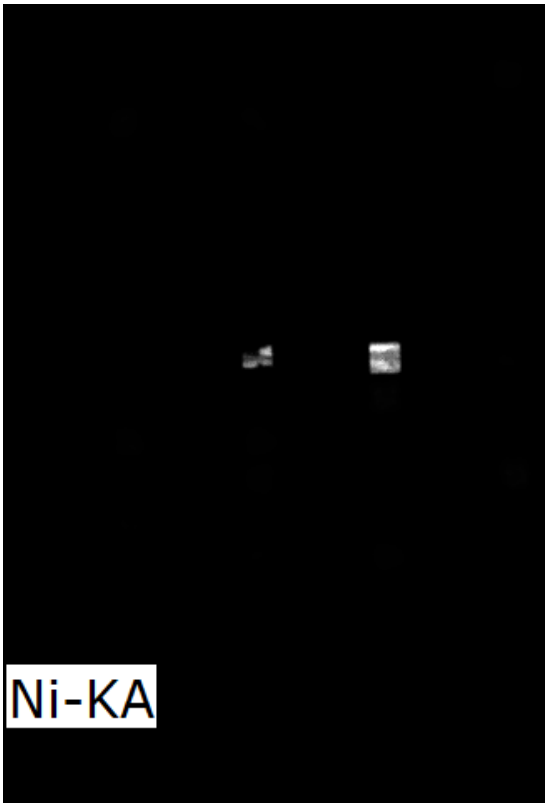
Fe-KA,

Counts	Area	Fe-KA
Raw sienna	224	1880,2
Raw umber	182	1408,7
Burnt sienna	240	1198,1
Red ochre	196	1036,3
Burnt umber	182	1013,5
Yellow ochre	210	951,16
Green earth	182	837,58
Prussian blue	240	434,84
Maya blue	196	142,56
Van Dyck brown	169	134,44
Ultramarine nat.	240	123,04



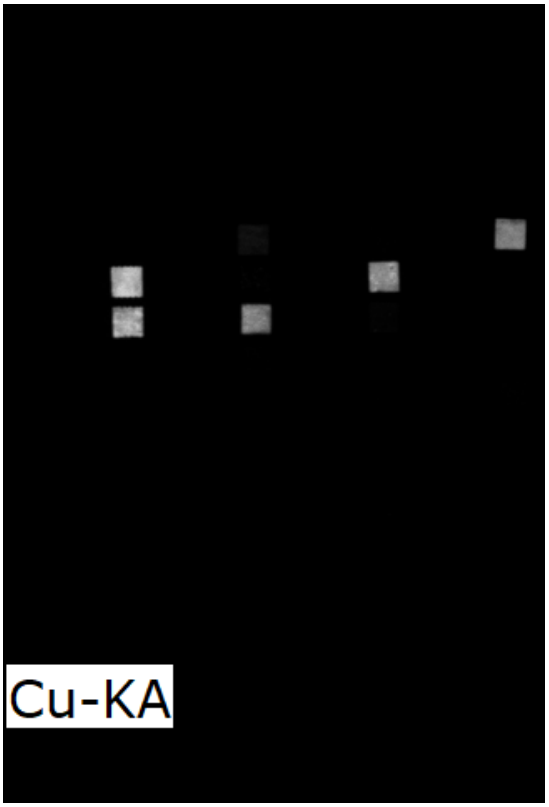
Co-KA,

	Counts	Area	Co-KA
Cobalt violet	192	2221,3
Cobalt yellow	196	1192,8
Smalt	210	635,67
Cobalt blue	182	344,8
Cobalt green	224	214,37



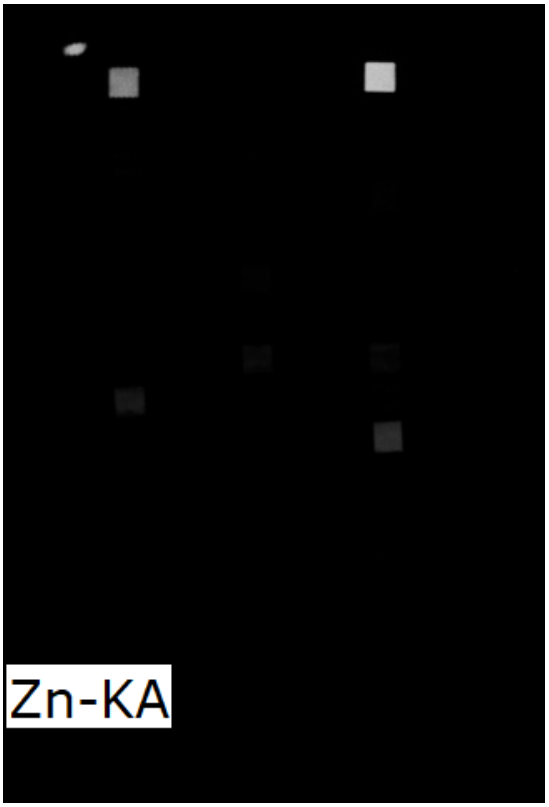
Ni-KA,

	Counts	Area	Ni-KA
Cobalt green		224	466,2
Cadmium green		169	162,3



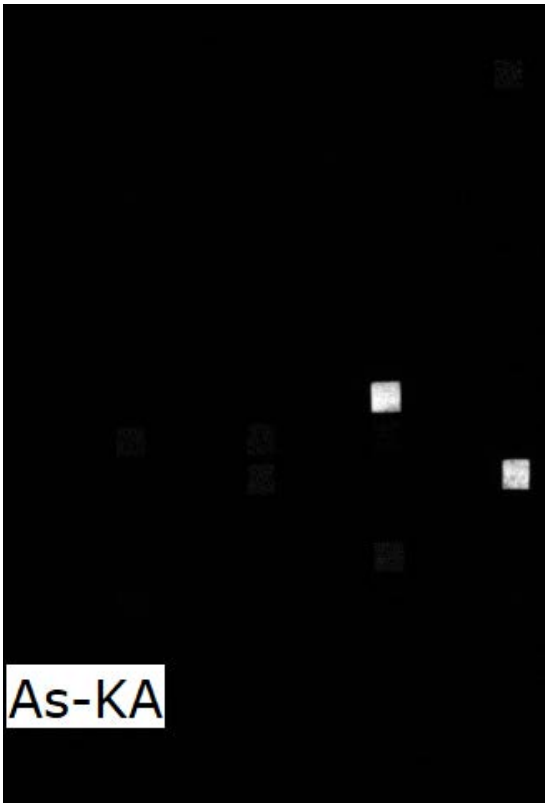
Cu-KA,

	Counts	Area	Cu-KA
Azurite		210	3377,5
Malachite		182	3048,9
Blue bice		168	2582
Egyptian blue		182	2277,4
Verdigris		270	2122,5



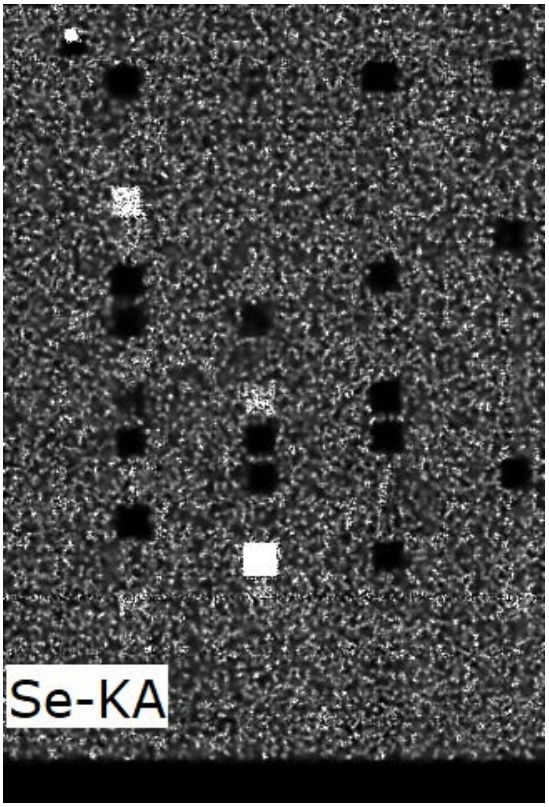
Zn-KA,

	Counts	Area	Zn-KA
Zinc white	195	4574	
Lithopone	240	2749,7	
Naples yellow	182	1005,7	
Cadmium yellow	256	459,89	



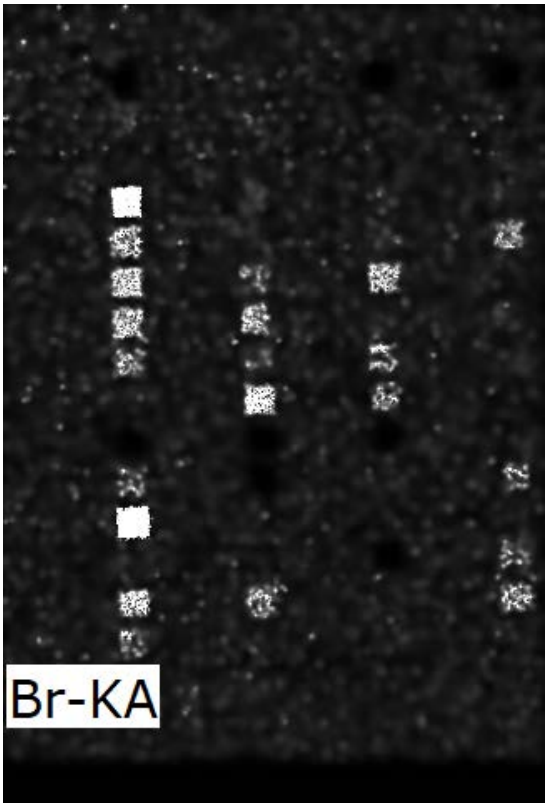
As-KA,

	Counts	Area	As-KA
Orpigment	225	2580,1	
Realgar	210	2446,9	



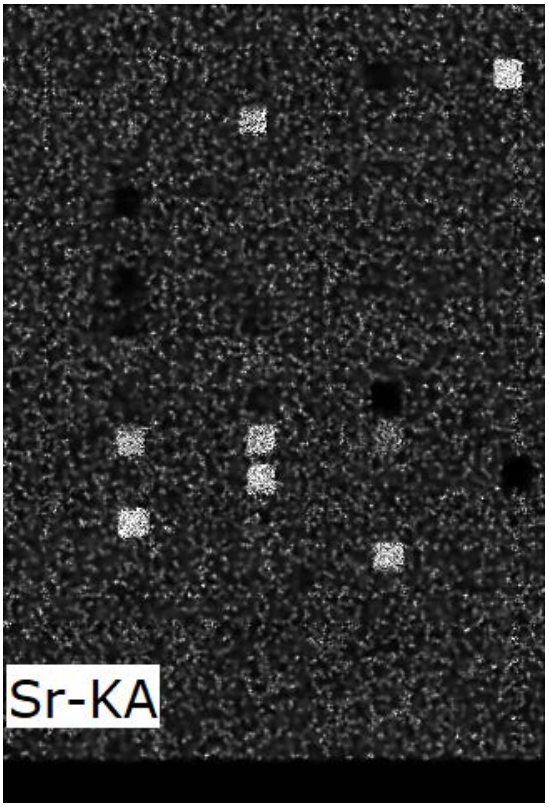
Se-KA,

Counts	Area	Se-KA
Cadmium red	240	361,28
Cobalt violet	192	18,84
Cobalt yellow	196	11,84
Raw sienna	224	8,7
Burnt sienna	240	8,18
Smalt	210	7,48
Raw umber	182	7,26



Br-KA,

Counts	Area	Br-KA
Vermillion	238	101,65
Cobalt violet	192	35,76
Cobalt yellow	196	18,59
Raw sienna	224	14,1
Azurite	210	13,58
Malachite	182	12,35
Smalt	210	11,53
Blue bice	168	11,37
Verdigris	270	9,26
Egyptian blue	182	8,25
Green earth	182	7,99
Raw umber	182	7,96
Burnt sienna	240	7,86
Cobalt green	224	7,75
Orpigment	225	7,13
Burnt umber	182	6,62
Realgar	210	6,58
Yellow ochre	210	5,9
Cobalt blue	182	5,77
Red ochre	196	5,54
Cadmium green	169	4,48

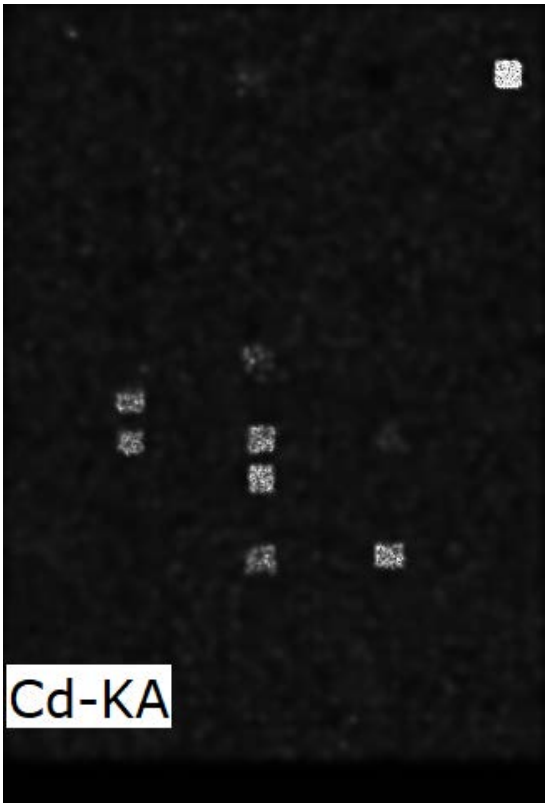


Sr-KA,

Counts	Area	Sr-KA
Lead white	180	22,93
Vermillion	238	20,79
Massicot	180	20,23
Red lead	210	18,77
Lead tin yellow II	196	17,46
Lead tin yellow I	195	17,12
Gypsum	196	15,8
Naples yellow	182	9,22

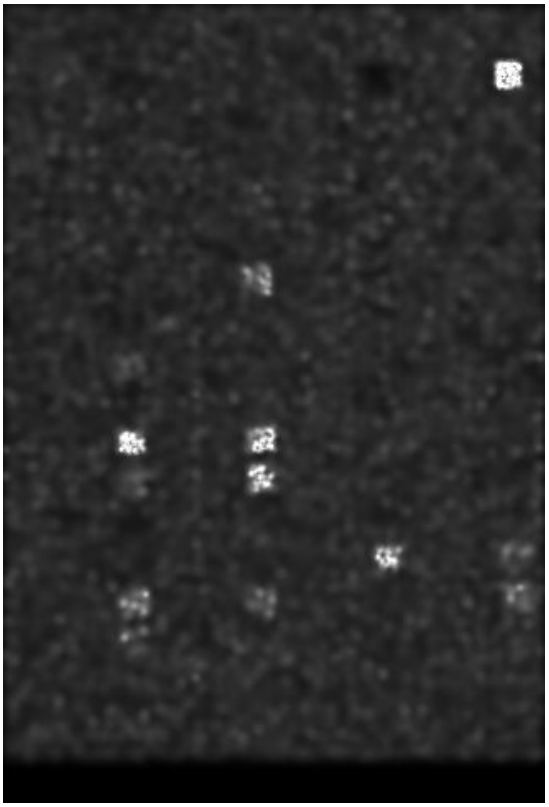
Mo-KA,

	Counts	Area	Mo-KA
Zinc white	195		53,09
Lithopone	240		9,43



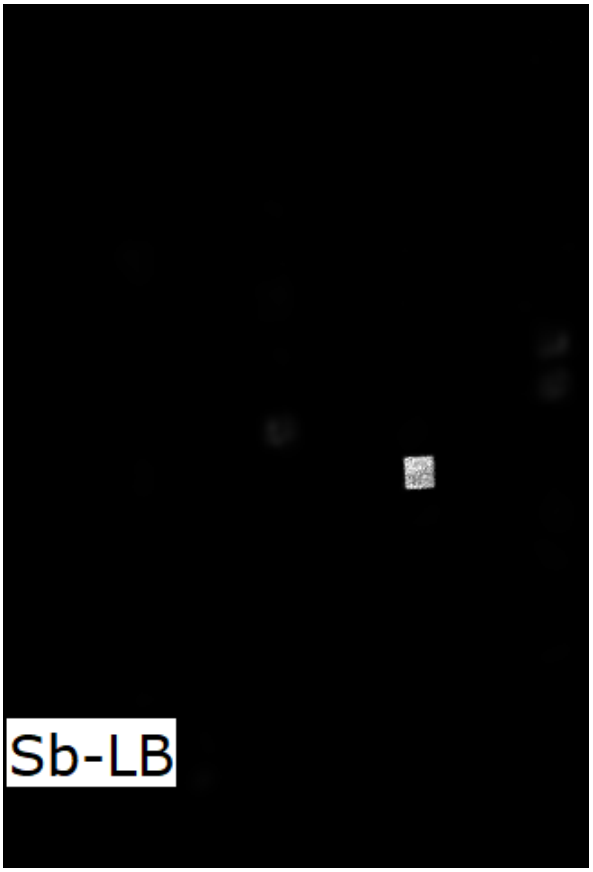
Cd-KA,

	Counts	Area	Cd-KA
Lead white		180	22,23
Massicot		180	12,7
Red lead		210	11,99
Lead tin yellow II		196	10,41
Lead tin yellow I		195	9,09
Cadmium yellow		256	7,6
Cadmium red		240	7,48
Cadmium green		169	4,81
Naples yellow		182	3,08
Titanium white		196	2,94



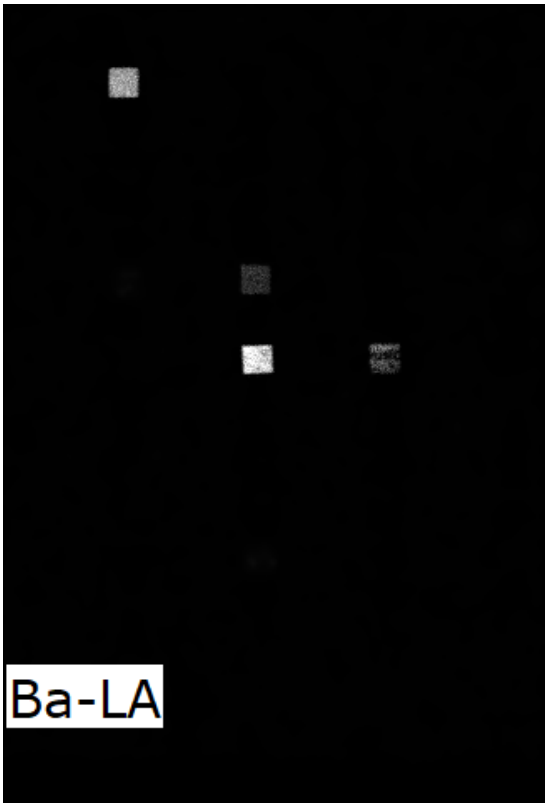
Sn-LB,

Counts	Area	Sn-LB
Cobalt blue	182	45,09
Cobalt yellow	196	14,91
Lead tin yellow I	195	8,56
Chrome green	182	7,1
Viridian	180	6,62
Cadmium yellow	256	3,8
Cadmium red	240	3,66
Yellow lake reseda	196	3,05
Lead tin yellow II	196	2,35



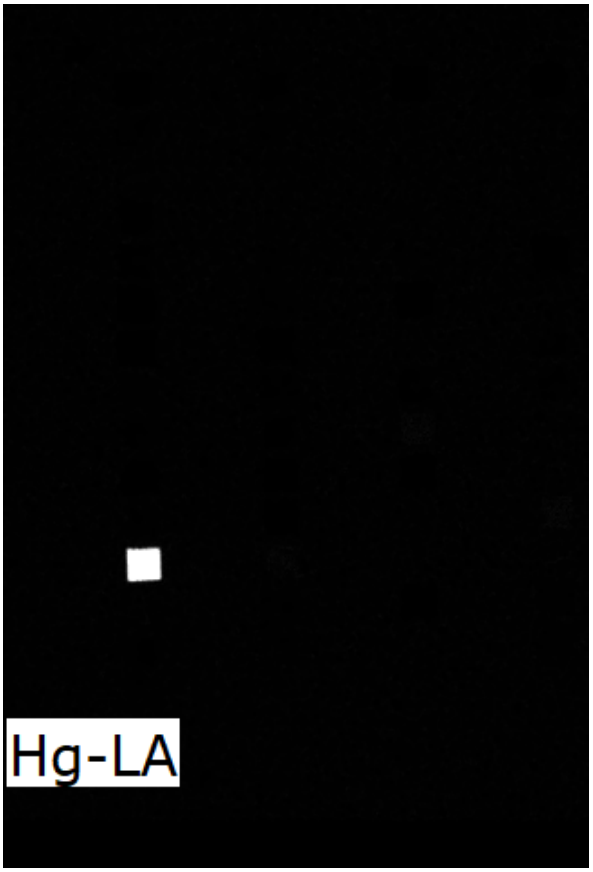
Sb-LB,

	Counts	Area	Sb-LB
Naples yellow	182	34,7	



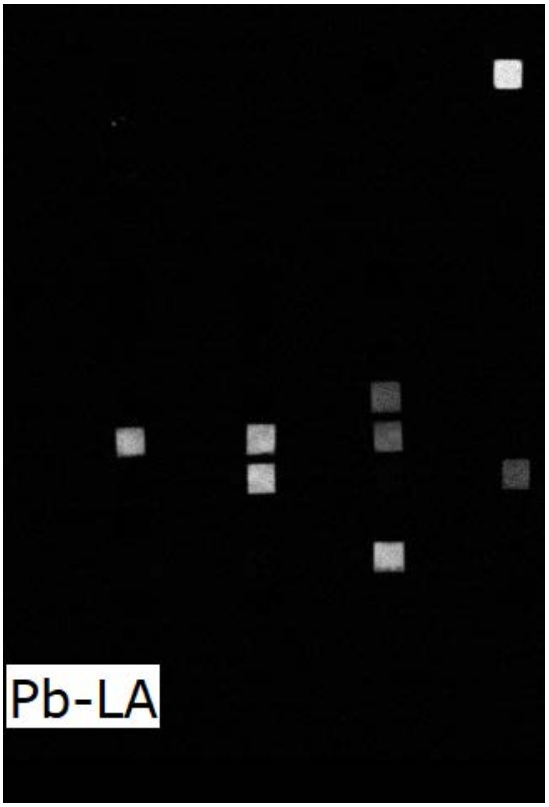
Ba-LA,

	Counts	Area	Ba-LA
Cadmium green	169	153,6	
Lithopone	240	98,16	
Cobalt green	224	39,42	
Cobalt blue	182	29,36	



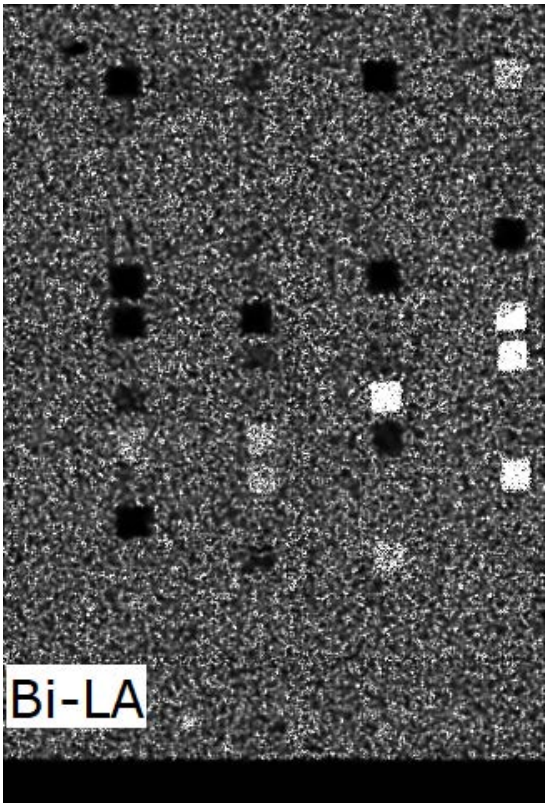
Hg-LA,

	Counts	Area	Hg-LA
Vermillion		238	1074



Pb - LA

	Counts	Area	Pb-LA
Lead white		180	1551,8
Massicot		180	1233,5
Red lead		210	1181,2
Lead tin yellow II		196	1118,7
Lead tin yellow I		195	1060,6
Naples yellow		182	528,83
Orpigment		225	473,51
Realgar		210	441,31



Bi-LA,

Counts	Area	Bi-LA
Chrome green	182	32,35
Viridian	180	28,85
Orpigment	225	26,92
Realgar	210	26,46
Red lead	210	13,16
Lead white	180	12,95
Lead tin yellow II	196	11,54
Massicot	180	10,73
Lead tin yellow I	195	9,76

Bruker Nano GmbH, Germany

M4 Tornado 1.5

Quantification results
ROI sum
Date: 01/29/2021

Counts	Area	Video 1	Al-K	Si-KA	P-KA	S-KA	Cl-KA	K-KA	Ca-KA	Ti-KA	Cr-KA	Mn-KA	Fe-KA	Co-KA	Ni-KA	Cu-KA	Zn-KA	As-KA	Se-KA	Br-KA	Sr-KA	Mo-KA	Cd-KA	Sn-LB	Sb-LB	Ba-LA	Hg-LA	Pb-LA	Bi-LA
Lithopone	240	53531	0.84	0.15	0.05	7.1	0.16	0.16	5.82	29.73	0.16	0.83	16.96	0.03	0	0.04	2749.7	0.31	0.13	0.21	5.29	9.43	1.34	0	0	98.16	0.29	3.11	0.2
Chalk	210	44627	0.79	0.16	2.06	0.98	0.22	0	728.65	0.06	0.01	11.51	16.84	2.64	3.08	1.09	2.98	7.28	4.92	3.3	6.58	1.21	1.54	0	0	0	2.46	28.46	4.57
Lamp black	210	10971	1.01	0.22	0.1	0.84	0.18	0.03	62.72	4.91	1.04	6.42	79.99	2.2	0.8	1.34	15.7	9.28	5.2	1.61	3.52	1.94	1.34	0.01	0.03	0.2	5.35	14.5	5.9
Cobalt violet	192	12415	0.73	0.22	0.33	0.31	0.27	2.07	17.66	3.48	0.77	3.54	70.41	2221.3	0	0	0.09	15.41	18.84	35.76	0.69	1.97	1.26	0.03	0.04	0.13	0.47	2.82	6.75
Smalt	210	13851	0.65	0.33	0.03	0.35	0.15	38.06	11.14	1.09	0.92	3.04	26.3	635.67	0.07	0.02	0.12	8.89	7.48	11.53	3.94	1.67	1.5	1.41	0.35	0.16	1.55	14.04	5.41
Azurite	210	14439	0.48	0.23	0.04	0.25	0.11	1.38	8.73	4.54	0.82	4.16	77.78	0	0	3377.5	0.02	0.57	0.06	13.58	1.04	0.59	1.26	0.02	0.04	3.45	0	1.06	0
Malachite	182	28166	0.71	0.36	0.05	0.23	0.13	1.6	15.29	1.29	1.2	4.08	29.81	0	0	3048.9	0	1.16	0.23	12.35	1.94	0.69	1.1	0.02	0.05	0.17	0	1.87	0.09
Green earth	182	15843	1.03	0.49	0.19	0.37	0.14	3.03	104.52	40.12	2.63	25.5	837.58	8.87	0.11	0.38	0.59	9.47	6.48	7.99	5.81	1.93	1.54	0.01	0.03	0.46	2.78	8.7	5.23
Cadmium yellow	256	51823	0.76	0.2	0.04	7.24	0.09	10.54	7.92	1.01	1.39	5.55	26.09	0.36	0.08	0.36	459.89	4.95	2.11	2.03	3.13	2.08	7.6	3.8	0.02	0.04	2.02	8.36	2.68
Lead tin yellow I	195	52710	0.49	0.18	0.04	1.64	0.24	0.54	10.18	0.86	0.91	3.9	4.22	5.89	3	0.93	0.68	96.57	0.09	0.02	17.12	0.52	9.09	8.56	0.12	0.2	0.09	1060.58	9.76
Yellow ochre	210	25077	0.63	0.53	0.08	0.2	0.18	3.89	23.52	7.87	2.84	16.84	951.16	7.85	0.02	0.11	0.36	9.35	6.9	5.9	4.33	1.98	1.58	0.02	0.01	0.47	2.81	7.78	5.2
Vermillion	238	20778	0.46	0.24	0.03	4.98	0.21	3.16	7.56	2.42	1.4	3.64	61.02	8.41	1.15	0.31	0.2	1.64	0.01	101.65	20.79	0.34	1.3	0.06	0.04	0.26	1073.7	0.87	0
Alizarin	240	17633	0.72	0.14	0	0.26	18.3	4.63	36.17	2.44	1.6	5.51	57.91	1.42	0.74	1.48	3.34	8.2	5.21	1.89	4.6	1.94	1.53	0.04	0.05	0.05	5.75	14.86	6.24
Raw sienna	224	21442	0.79	0.26	0.04	0.31	0.25	3.33	26.67	2.96	3.04	31.29	1880.2	14.63	0.01	0	0.11	26.57	8.7	14.1	3.52	1.71	1.33	0.02	0.07	0.44	1.91	6.88	7.2
Burnt umber	182	12670	0.79	0.27	0.1	0.39	0.2	3.93	47.26	3.6	1.49	170.53	1013.5	8.11	0.03	0.52	0.9	12.26	6.39	6.62	5.82	1.89	1.65	0.13	0.11	0.11	3.13	9.08	6.12
Titanium white	196	59483	0.72	0.35	0.02	0.41	0.01	0	0.55	1834.1	0	0	9.92	0.61	0.31	0.24	1.42	5.85	2.89	2.53	3.67	1.7	2.94	0	0	0	1.3	7.98	3.31
Gypsum	196	49043	0.73	0.18	0.59	12.47	0.21	0.03	311.62	0.66	0.28	6.63	21.48	2.49	1.87	0.7	2.82	9.18	4.8	2.97	15.8	1.37	1.43	0	0.01	0.01	2.64	15.7	4.35
Bone black	196	8352	0.88	0.14	2.95	0.74	0.3	0	281.06	0.91	0.57	7.98	90.55	1.92	0.72	0.92	10.24	8.44	5.13	1.78	3.94	1.75	1.99	0.02	0.01	0	4.7	14.04	5.61
Prussian blue	240	10257	0.6	0.16	0.11	0.43	0.2	0.22	62.36	6.5	1.71	11.31	434.84	6.43	0.15	0.47	2.95	9.83	5.48	3.43	4.87	1.96	1.52	0.01	0.11	0.15	4.75	10.94	5.85
Phthalo blue	225	12462	0.82	0.24	0.05	0.36	2.68	0.64	50.9	7.42	1.29	5.75	76.49	1.32	0.31	270.67	2.55	8.22	4.6	2.14	4.43	2.07	1.54	0.01	0.06	0.14	3.2	10.54	4.8
Cobalt blue	182	19844	0.62	0.87	0.08	0.7	0.18	0.08	46.73	8.54	15.9	4.36	29.58	344.8	0.15	29.74	54.57	9.14	6.57	5.77	4.58	1.51	1.55	45.09	0.35	29.36	2.04	7.48	4.78
Verdigris	270	21640	0.66	0.22	0.04	0.32	0.31	4.12	23.36	3.15	1.21	4.78	44.27	0	0	2122.5	0.14	2.82	1.17	9.26	2.84	1.26	1.3	0.1	0.08	0.18	0.03	5.06	0.42
Cadmium green	169	19874	0.63	0.19	0.04	3.85	0.22	2	5.02	97.62	0.07	0.08	23.64	74.64	162.3	8.89	219.32	6.05	4.08	4.48	6.54	1.51	4.81	0.12	0	153.6	1.63	7.69	2.88
Cobalt yellow	196	38945	0.51	0.17	0.01	0.21	0.16	196.9	4.59	0.97	1.1	3.62	43.45	1192.8	0.03	0	0	11.82	11.84	18.59	2.62	1.75	1.48	14.91	3.06	0.2	1.17	5.21	5.8
Lead tin yellow II	196	47120	0.48	0.24	0.04	1.35	0.24	1.28	9.32	0.41	1.42	3.52	3.73	4.69	2.44	0.8	0.54	98.05	0	0.02	17.46	0.4	10.41	2.35	0.09	0.07	0.16	1118.66	11.54
Massicot	180	25868	0.37	0.17	0.03	1.74	0.21	0.36	3.12	0.41	1.21	2.35	4.24	5.39	2.45	0.58	0.59	124.24	0.01	0.06	20.23	0.48	12.7	0.02	0.02	0.08	0.04	1233.47	10.73
Carmine lake	195	12144	0.84	0.15	0.06	0.31	0.21	5.95	55.73	1.79	1.37	5.79	65.06	1.32	0.75	1.37	2.83	8.7	4.41	2.12	4.84	1.67	1.55	0.05	0.04	0.03	12.98	16.19	6.29
Cadmium red	240	17307	0.88	0.22	0.02	3.8	0.16	11.92	6.77	2.96	1.75	5.44	29.41	3.92	1.07	1.71	8.65	2.7	361.28	1.19	5.93	1.56	7.48	3.66	0.03	3.52	2.73	21.4	2.89
Burnt sienna	240	14636	0.73	0.25	0.15	0.79	0.15	1.98	106.62	3.87	1.89	30.8	1198.1	10.09	0.02	0.04	0.22	12	8.18	7.86	4.16	1.73	1.71	0.05	0.06	0.06	3.33	7.83	6.32
Zinc white	195	54671	0.35	0.26	0.06	0.26	0.29	0.87	4.05	1.69	0.39	2.59	3.73	0	0	0	4574	0	0	0	1.34	53.09	0.58	0.05	0.06	0.22	0	0.26	0
Vine black	156	10971	0.49	0.24	0.06	1.24	0.33	0.07	64.76	4.3	1.55	6.22	85.95	1.34	0.39	1.24	6.64	12.17	4.44	1.41	5.17	1.58	1.92	0.02	0.01	0.09	4.82	12.74	7.06
Maya blue	196	14574	0.59	0.41	0.06	0.43	0.2	12.95	64.39	4.28	1.53	8.66	142.56	11.06	0.42	0.74	42.28	7.34	5.01	2.58	5.02	2.11	1.61	0.14	0.04	0.11	4.2	16.37	5.47
Ultramarine nat.	240	16828	0.62	0.35	0.1	1.13	0.39	9.73	107.81	4.3	1.28	7.34	123.04	2.9	0.63	6.56	2.7	9.2	5.48	2.83	4.22	1.76	1.81	0.05	0.06	0.03	3.97	10.15	6.03
Blue bice	168	28282	0.8	0.17	0.32	0.35	0.17	0.25	201.21	0.1	0.45	5.49	13.29	0	0	2582	0	1.29	0.3	11.37	3.11	0.74	1.35	0.01	0.06	0	0	2.38	0.1
Phthalo green	196	17530	0.63	0.16	0.01	0.29	20.8	0.38	52.82	3.46	1.46	5.77	78.7	1.31	0.54	61.32	3.8	9.78	5.85	2.13	4.81	2.28	1.69	0.01	0.02	0.05	4.99	12.76	5.63
Cobalt green	224	20555	0.78	0.23	0.05	1.14	0.15	0.03	37.88	167.79	4.66	1.13	59.34	214.37	466.2	0.17	154.25	9.88	5.81	7.75	4.2	2.18	1.96	0.01	0	39.42	1.67	8.33	4.15
Orpigment	225	41183	0.47	0.21	0.05	6.27	0.25	1.75	6.73	1.16	0.82	2.73	16.04	15.96	6.85	2.04	12.56	2580.1	0	7.13	0.06	0.76	1.39	0.04	0.19	0.08	13.82	473.51	26.92
Naples yellow	182	38380	0.4	0.14	0.04	1.02	0.24	0.36	14.02	0.86	1.14	3.05	5.32	0.03	0	0	1005.7	44.23	0.03	0.09	9.22	1.04	3.08	0.2	34.7	0.03	0.19	528.83	1.21
Yellow lake reseda	196	32761	0.66	0.31	0.36	1.46	0.17	3.53	70.51	2.45	1.1	5.78	63.92	1.59	0.71	1.15	4.05	10.96	5.74	2.16	4.81	2.2	1.59	3.05	0.15	0.02	4.43	26.53	6.9
Lac dye	210	12670	0.9	0.15	0.11	0.2	0.22	1.87	60.14	4.07	1.27	6.26	83.17	1.43	0.61	2.47	3.27	11.18	4.61	1.56	4.39	2.06	1.73	0.02	0.09	0.07	5.46	12.94	6.02
Red lead	210	28801	0.61	0.15	0.03	2.29	0.3	0.53	3.22	0.67	1.4	3.11	3.75	3.91	2.49	0.25	1.95	154.55	0.12	0.01	18.77	0.47	11.99	0.02	0	0.1	0.13	1181.23	13.16
Van Dyck brown	169	11539	1.02	0.22	0.06	0.68	0.33	6.8	52.7	2.26	1.5	7.22	134.44	1.46	0.53	1.43	4.32	8.99	4.73	1.67	4.54	2.28	1.72	0.12	0.02	0.07	6.01	14.44	6.04
Gum Arabic	196	55356	0.72	0.22	0.02	0.39	0.21	0.93	66.23	3.64	0.9	5.78	78.69	1.59	0.55	1.72	3.84	9.06	4.16	2.26	4.21	2.28	1.71	0.02	0.04	0.09	5.27	13.99	5.11
Lead white	180	59143	0.43	0.09	0.02	2.76	0.17	0.03	0.7	0.44	1.87	2.87	3.16	4.19	2.16	0.84	1.89	114.34	0	0	22.93	0.58	22.23	0.01	0.03	0.17	0.07	1551.79	12.95
Ivory black	195	9260	0.85	0.1	4.48	0.46	0.23	0	339.36	4.02	0.3	7.88	60.04	1.54	0.68	0.83	3.45	8.35	4.67	1.72	4.89	2.17	1.86	0.03	0.05	0	4.61	13.51	5.12
Indigo	210	12409	0.72	0.23	0.02	1.05	3.3	1.69	20.72	1.3	1.22	4.72	59.62	2.04	0.86	1.5	3.18	8.64	5.01	2.26	4.93	1.68	1.81	0.03	0.03	0.09	5.46	12.99	5.6
Egyptian blue	182	16716	0.9	0.29	0.1	0.35	0.21	4.86	92.81	1.6	0.64	3.75	11.67	0	0	2277.4	0.05	1.4	0.53	8.25	4.02	1.13	1.3	0.05	0.04	1.73	0	2.84	0.16
Viridian	180	15920	0.84	0.29	0.09	0.3	0.34	11.63	42.88	0.11	1918.6	9.5	23.57	2.83	1.03	2.18	1.42	4.42	5.84	2.83	4.97	1.51	1.75	6.62	2.37	0	2.29	12.02	28.85
Chrome green	182	20733	0.77	0.25	0.11	0.37	0.14	10.27	42.29	0.04	2030.1	9.9	20.35	2.38	1.09	0.78	1.42	3.75	4.31	2.12	4.34	2.16	1.47	7.1	2.49	0	1.93	12.46	32.35
Saffron	210	42870	0.5	0.24	0.03	0.23	0.11	2.76	52.44	194.23	0.43	1.73	68.82	1.4	0.71	10.16	3.35	12.41	5.57	1.23	4.82	1.7	1.99	0	0	0.83	4.77	13.3	6.14
Gamboge	204	39314	0.48	0.24	0.08	0.2	0.2	6.24	48.29	1.8	1.25	5.58	59.05	0.93	0.66	1.69	6.31	11.73	4.85	1.62	5.48	1.85	1.85	0.08	0.05	0.04	5.38	16.81	5.51
Realgar	210	35117	0.6	0.24	0.04	5.72	0.23	1.73	10.03	1.98	1.06	3.36	28.85	13.4	6.2	1.66	0.37	2446.9	0	6.58	0.05	0.72	1.6	0.03	0.3	0.1	14.62	441.31	26.46
Madder lake	224	19932	0.77	0.19	0.04	2.68	0.18	25.16	39.4	1.94	1.39	5.95	63.77	1.47	0.64	1.52	3.63	9.97	5.1	1.78	5.04	2.25	1.42	0.61	0.19	0.07	5.78	13.42	6.2
Red ochre	196	16032	0.79	0.9	0.07	0.31	0.26	9.11	17.66	17.5	2.49	17.32	1036.3	8.66	0.01	0.05	0.24	9.73	6.2	5.54	4.44	1.55	1.57	0.05	0.01	0.69	2.44	10.04	5.71
Raw umber	182	14525	0.84	0.34	0.07	0.27	0.18	3.62	51.37	5.07	1.27	243.3	1408.7	10.01	0.04	0.04	0.27	13.64	7.26	7.96	5.84	1.31	1.64	0.09	0.09	0.09	3.34	5.62	6.29