X-ray Excitation Energies of the Elements

Based on tables of McMaster *et al.*

Energies are in KeV

Symbol	Z	Cu 29
K	→	8.979
L_I	→	1.100
L_{II}	→	0.952
L_{III}	→	0.932

H 1																	**He** 2
0.014																	0.025
Li 3	**Be** 4											**B** 5	**C** 6	**N** 7	**O** 8	**F** 9	**Ne** 10
0.055	0.112											0.188	0.284	0.402	0.537	0.686	0.867
Na 11	**Mg** 12											**Al** 13	**Si** 14	**P** 15	**S** 16	**Cl** 17	**Ar** 18
1.072	1.305											1.560	1.839	2.149	2.472	2.822	3.202
	0.063											0.087	0.118	0.153	0.193	0.238	0.287
	0.050											0.073	0.100	0.136	0.164	0.202	0.251
	0.049											0.072	0.099	0.135	0.162	0.200	0.248
K 19	**Ca** 20	**Sc** 21	**Ti** 22	**V** 23	**Cr** 24	**Mn** 25	**Fe** 26	**Co** 27	**Ni** 28	**Cu** 29	**Zn** 30	**Ga** 31	**Ge** 32	**As** 33	**Se** 34	**Br** 35	**Kr** 36
3.607	4.038	4.493	4.965	5.465	5.989	6.540	7.112	7.709	8.333	8.979	9.659	10.367	11.104	11.868	12.658	13.474	14.322
0.341	0.400	0.463	0.531	0.604	0.682	0.754	0.842	0.929	1.012	1.100	1.196	1.302	1.414	1.530	1.653	1.782	1.920
0.297	0.350	0.404	0.461	0.520	0.584	0.650	0.720	0.793	0.872	0.952	1.044	1.142	1.249	1.360	1.477	1.596	1.726
0.295	0.346	0.399	0.454	0.512	0.574	0.639	0.707	0.778	0.855	0.932	1.021	1.115	1.218	1.325	1.436	1.550	1.675
Rb 37	**Sr** 38	**Y** 39	**Zr** 40	**Nb** 41	**Mo** 42	**Tc** 43	**Ru** 44	**Rh** 45	**Pd** 46	**Ag** 47	**Cd** 48	**In** 49	**Sn** 50	**Sb** 51	**Te** 52	**I** 53	**Xe** 54
15.200	16.105	17.080	17.998	18.986	19.999	21.045	22.117	23.220	24.350	25.514	26.711	27.940	29.200	30.491	31.813	33.169	34.582
2.065	2.216	2.373	2.532	2.698	2.866	3.043	3.224	3.412	3.605	3.806	4.018	4.238	4.465	4.698	4.939	5.188	5.452
1.863	2.007	2.156	2.307	2.465	2.625	2.793	2.967	3.146	3.330	3.524	3.727	3.938	4.156	4.381	4.612	4.852	5.100
1.805	1.940	2.080	2.223	2.371	2.520	2.677	2.838	3.003	3.173	3.351	3.537	3.730	3.929	4.132	4.341	4.557	4.781
Cs 55	**Ba** 56	**La** 57	**Hf** 72	**Ta** 73	**W** 74	**Re** 75	**Os** 76	**Ir** 77	**Pt** 78	**Au** 79	**Hg** 80	**Tl** 81	**Pb** 82	**Bi** 83	**Po** 84	**At** 85	**Rn** 86
35.985	37.441	38.925	65.351	67.414	69.524	71.676	73.872	76.112	78.395	80.723	83.103	85.528	88.006	90.527			98.417
5.713	5.987	6.267	11.272	11.680	12.098	12.525	12.964	13.424	13.892	14.353	14.846	15.344	15.860	16.385			18.055
5.359	5.624	5.891	10.739	11.136	11.542	11.957	12.384	12.824	13.273	13.733	14.209	14.698	15.198	15.708			17.334
5.012	5.247	5.483	9.561	9.881	10.204	10.534	10.871	11.215	11.564	11.918	12.284	12.657	13.035	13.418			14.612
Fr 87	**Ra** 88	**Ac** 89															

Ce 58	**Pr** 59	**Nd** 60	**Pm** 61	**Sm** 62	**Eu** 63	**Gd** 64	**Tb** 65	**Dy** 66	**Ho** 67	**Er** 68	**Tm** 69	**Yb** 70	**Lu** 71
40.444	41.991	43.569	45.184	46.835	48.520	50.240	51.996	53.789	55.618	57.486	59.390	61.332	63.314
6.549	6.835	7.126	7.428	7.737	8.052	8.376	8.708	9.047	9.395	9.752	10.116	10.488	10.870
6.165	6.441	6.722	7.013	7.312	7.618	7.931	8.252	8.581	8.919	9.265	9.618	9.978	10.349
5.724	5.965	6.208	6.460	6.717	6.977	7.243	7.515	7.790	8.071	8.358	8.648	8.943	9.244
Th 90	**Pa** 91	**U** 92	**Np** 93	**Pu** 94	**Am** 95	**Cm** 96	**Bk** 97	**Cf** 98	**Es** 99	**Fm** 100	**Md** 101	**No** 102	**Lr** 103
109.649		115.603		121.760									
20.470		21.756		23.095									
19.692		20.947		22.263									
16.300		17.167		18.053									

Compilation of X-Ray Cross Sections
W. H. McMaster, N. Kerr Del Grande, J. H. Mallett, and J. H. Hubbell
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