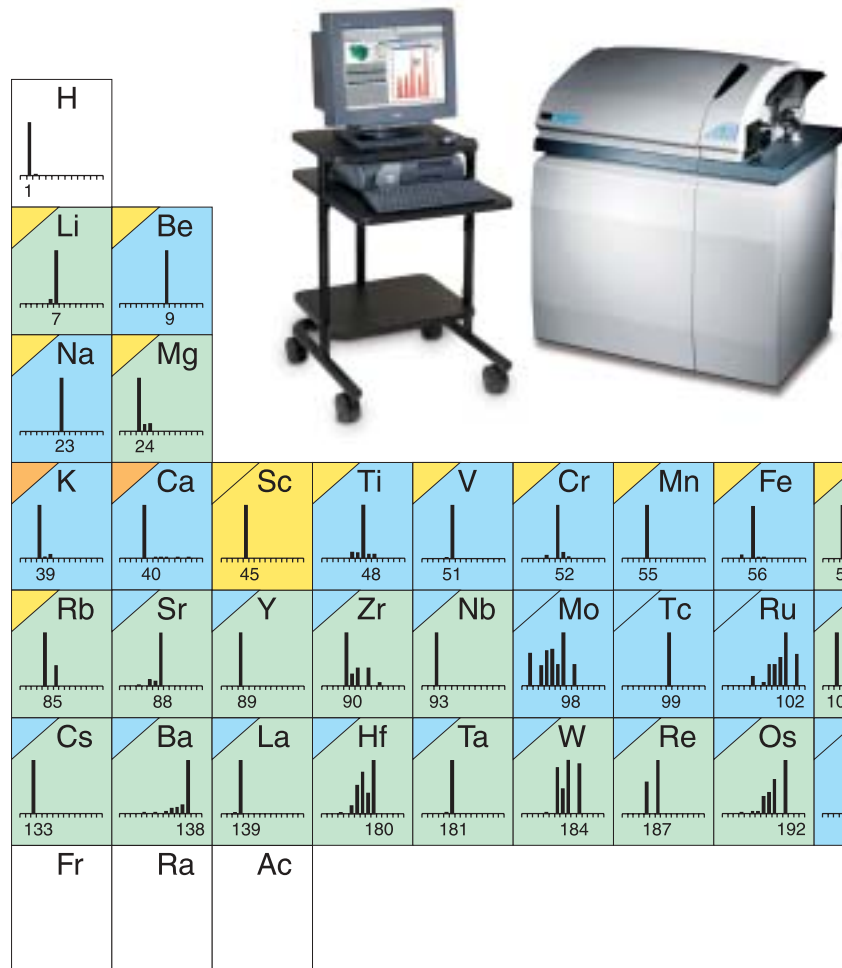


The ELAN® Series of ICP-Mass Spectrometers

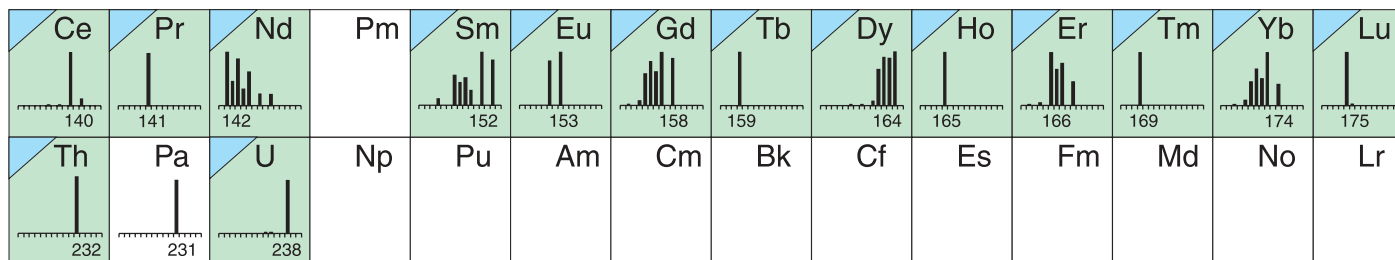
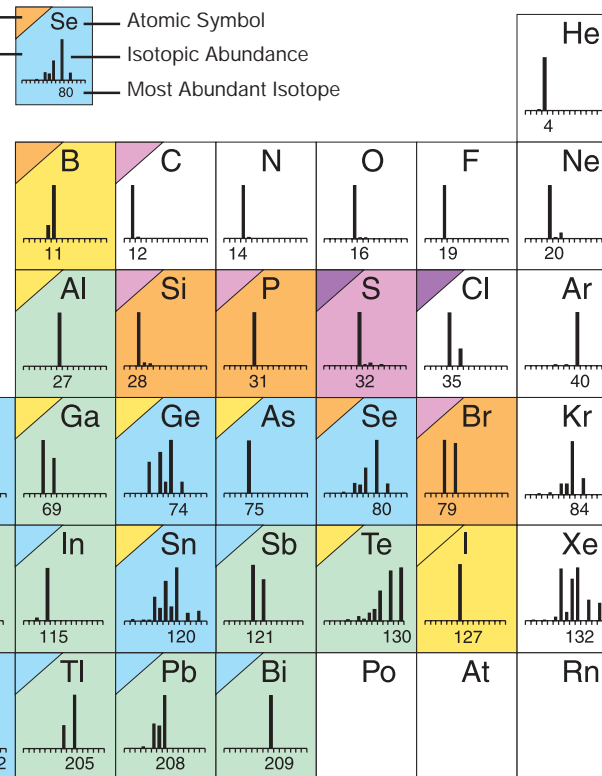
Simplifying Ultratrace Analysis



ELAN 9000 Detection Limit — Se — Atomic Symbol
 ELAN DRC II Detection Limit (in Class 100 clean room) — Isotopic Abundance
 — Most Abundant Isotope

Detection Limit Ranges

- < 0.1 ppt
- 0.1-1 ppt
- 1-10 ppt
- 10-100 ppt
- 0.1-1 ppb
- 1-10 ppb



Relative Abundance of the Natural Isotopes

Isotope	%	%	%	Isotope	%	%	%	Isotope	%	%	%	Isotope	%	%	%
1	H 99.985			61			Ni 1.140	121			Sb 57.36	181			
2	H 0.015			62			Ni 3.634	122	Sn 4.63	Te 2.603		182	Ta 99.988		
3		He 0.000137		63	Cu 69.17			123		Te 0.908	Sb 42.64	183		W 26.3	
4		He 99.999863		64		Zn 48.6	Ni 0.926	124	Sn 5.79	Te 4.816	Xe 0.10	184	Os 0.02	W 14.3	
5				65	Cu 30.83			125		Te 7.139		185		W 30.67	
6			Li 7.5	66		Zn 27.9		126		Te 18.95	Xe 0.09	186	Os 1.58	W 28.6	Re 37.40
7			Li 92.5	67		Zn 4.1		127	I 100			187	Os 1.6		Re 62.60
8				68		Zn 18.8		128		Te 31.69	Xe 1.91	188	Os 13.3		
9	Be 100			69			Ga 60.108	129			Xe 26.4	189	Os 16.1		
10		B 19.9		70	Ge 21.23	Zn 0.6		130	Ba 0.106	Te 33.80	Xe 4.1	190	Os 26.4		Pt 0.01
11		B 80.1		71			Ga 39.892	131			Xe 21.2	191		Ir 37.3	
12			C 98.90	72	Ge 27.66			132	Ba 0.101		Xe 26.9	192	Os 41.0	Ir 62.7	Pt 0.79
13			C 1.10	73	Ge 7.73			133		Cs 100		193			
14	N 99.643			74	Ge 35.94	Se 0.89		134	Ba 2.417		Xe 10.4	194			Pt 32.9
15	N 0.366			75				135	Ba 6.592			195			Pt 33.8
16		O 99.762		76	Ge 7.44	Se 9.36		136	Ba 7.854	Ce 0.19	Xe 8.9	196	Hg 0.15		Pt 25.3
17		O 0.038		77		Se 7.63		137	Ba 11.23			197		Au 100	
18		O 0.200		78	Kr 0.35	Se 23.78		138	Ba 71.70	Ce 0.25	La 0.0902	198	Hg 9.97		Pt 7.2
19			F 100	79			Br 50.69	139			La 99.9098	199	Hg 16.87		
20	Ne 90.48			80	Kr 2.25	Se 49.61		140		Ce 88.48		200	Hg 23.10		
21	Ne 0.27			81			Br 49.31	141			Pr 100	201	Hg 13.18		
22	Ne 9.25			82	Kr 11.6	Se 8.73		142	Nd 27.13	Ce 11.08		202	Hg 29.86		
23		Na 100		83	Kr 11.5			143	Nd 12.18			203			Tl 29.524
24			Mg 78.99	84	Kr 57.0	Sr 0.56		144	Nd 23.80	Sm 3.1		204	Hg 6.87	Pb 1.4	
25			Mg 10.00	85			Rb 72.165	145	Nd 8.30			205			Tl 70.476
26			Mg 11.01	86	Kr 17.3	Sr 9.86		146	Nd 17.19			206		Pb 24.1	
27	Al 100			87		Sr 7.00	Rb 27.835	147		Sm 15.0		207		Pb 22.1	
28		Si 92.23		88		Sr 82.58		148	Nd 5.76	Sm 11.3		208		Pb 52.4	
29		Si 4.67		89			Y 100	149		Sm 13.8		209	Bi 100		
30		Si 3.10		90	Zr 51.45			150	Nd 5.64	Sm 7.4		210			
31			P 100	91	Zr 11.22			151			Eu 47.8	211			
32	S 95.02			92	Zr 17.15	Mo 14.84		152	Gd 0.20	Sm 26.7		212			
33	S 0.75			93			Nb 100	153			Eu 52.2	213			
34	S 4.21			94	Zr 17.38	Mo 9.25		154	Gd 2.18	Sm 22.7		214			
35		Cl 75.77		95		Mo 15.92		155	Gd 14.80			215			
36	S 0.02	Cl 24.23	Ar 0.337	96	Zr 2.80	Mo 16.68	Ru 5.52	156	Gd 20.47	Dy 0.06		216			
37			Ar 0.063	97		Mo 9.55		157	Gd 15.65			217			
38			Ar 99.600	98		Mo 24.13	Ru 1.88	158	Gd 24.84	Dy 0.10		218			
39	K 93.2581			99			Ru 12.7	159			Tb 100	219			
40	K 0.0117	Ca 96.941		100		Mo 9.63	Ru 12.6	160	Gd 21.86	Dy 2.34		220			
41	K 6.7302			101			Ru 17.0	161		Dy 18.9		221			
42		Ca 0.647		102	Pd 1.02		Ru 31.6	162	Er 0.14	Dy 25.5		222			
43		Ca 0.135		103		Rh 100		163		Dy 24.9		223			
44		Ca 2.086		104	Pd 11.14		Ru 18.7	164	Er 1.61	Dy 28.2		224			
45			Sc 100	105	Pd 22.33			165			Ho 100	225			
46	Ti 8.0	Ca 0.004		106	Pd 27.33	Cd 1.25		166	Er 33.6			226			
47	Ti 7.3			107			Ag 51.839	167	Er 22.95			227			
48	Ti 73.8	Ca 0.187		108	Pd 26.46	Cd 0.89		168	Er 26.8	Yb 0.13		228			
49	Ti 5.5			109			Ag 48.161	169			Tm 100	229			
50	Ti 5.4	V 0.250	Cr 4.345	110	Pd 11.72	Cd 12.49		170	Er 14.9	Yb 3.05		230			
51		V 99.750		111		Cd 12.80		171		Yb 14.3		231	Pa 100		
52			Cr 83.789	112	Sn 0.97	Cd 24.13		172		Yb 21.9		232	Th 100		
53			Cr 9.501	113		Cd 12.22	In 4.3	173		Yb 16.12		233			
54	Fe 5.8		Cr 2.365	114	Sn 0.65	Cd 28.73		174		Yb 31.8	Hf 0.162	234	U 0.0055		
55		Mn 100		115	Sn 0.34			175	Lu 97.41			235	U 0.7200		
56	Fe 91.72			116	Sn 14.53	Cd 7.49		176	Lu 2.59	Yb 12.7	Hf 5.206	236			
57	Fe 2.2			117	Sn 7.68			177			Hf 18.606	237			
58	Fe 0.28		Ni 68.077	118	Sn 24.23			178			Hf 27.297	238	U 99.2745		
59		Co 100		119	Sn 8.59			179			Hf 13.629				
60			Ni 26.223	120	Sn 32.59	Te 0.096		180	Ta 0.012	W 0.13	Hf 35.100				

"Isotopic Compositions of the Elements 1989," Pure Appl. Chem., Vol. 63, No. 7, pp. 991-1002, 1991. © 1991 IUPAC.