

### Ion Charge State and Velocity of Cathodic Arc Discharge Datasheet

Symbol	Atomic number	Average charge state number	Ion velocity ( $10^4$ m/s)	Kinetic energy (eV)
Li	3	1	2.38	20
C	6	1	2.97	54
Mg	12	1.5	3.06	117
Al	13	1.7	2.76	106
Si	14	1.4	2.58	97
Ca	20	1.9	2.59	140
Ti	22	2.1	2.22	122
V	23	2.1	1.93	97
Cr	24	2.1	1.94	101
Mn	25	1.5	1.08	33
Fe	26	1.8	1.18	40
Co	27	1.7	1.18	43
Ni	28	1.8	1.09	36
Cu	29	2	1.28	54
Zn	30	1.4	1.04	36
Ge	32	2	1.10	45
Y	39	2.3	1.43	94
Zr	40	2.6	1.57	116
Nb	41	3	1.55	116
Mo	42	3.1	1.74	151
Rh	45	3	1.57	131
Ag	47	2.1	1.04	61
Cd	48	1.3	0.68	27
In	49	1.4	0.55	18
Sn	50	1.5	0.75	34
Sb	51	1	0.52	17
Ba	56	2	0.67	32
La	57	2.2	0.70	35
Ce	58	2.1	0.70	36
Pr	59	2.2	0.87	55
Sm	62	2.1	0.74	43
Eu	63	2.1	0.78	48
Gd	64	2.2	0.74	45
Tb	65	2.2	0.74	45
Dy	66	2.3	0.74	46
Ho	67	2.3	0.83	58
Er	68	2.4	0.82	59
Tm	69	2	0.83	61
Hf	72	2.9	0.92	79
Ta	73	2.9	1.14	121
W	74	3.1	1.03	106
Pt	78	2.1	0.68	47
Au	79	2	0.58	34
Pb	82	1.9	0.54	31
Bi	83	1.2	0.42	19
Th	90	2.9	0.99	118
U	92	3.2	1.14	160

The datasheet for most conducting elements of the Periodic Table were measured with arc currents 100–200 A at pressure  $10^{-4}$  Pa. The results do not noticeably depend on arc current and are valid for pressures up to about  $10^{-2}$  Pa. Data are valid for  $t > 100$   $\mu$ s after arc initiation. The results in the datasheet were taken from I. G. Brown, Andre Anders, and G. Y. Yushkov