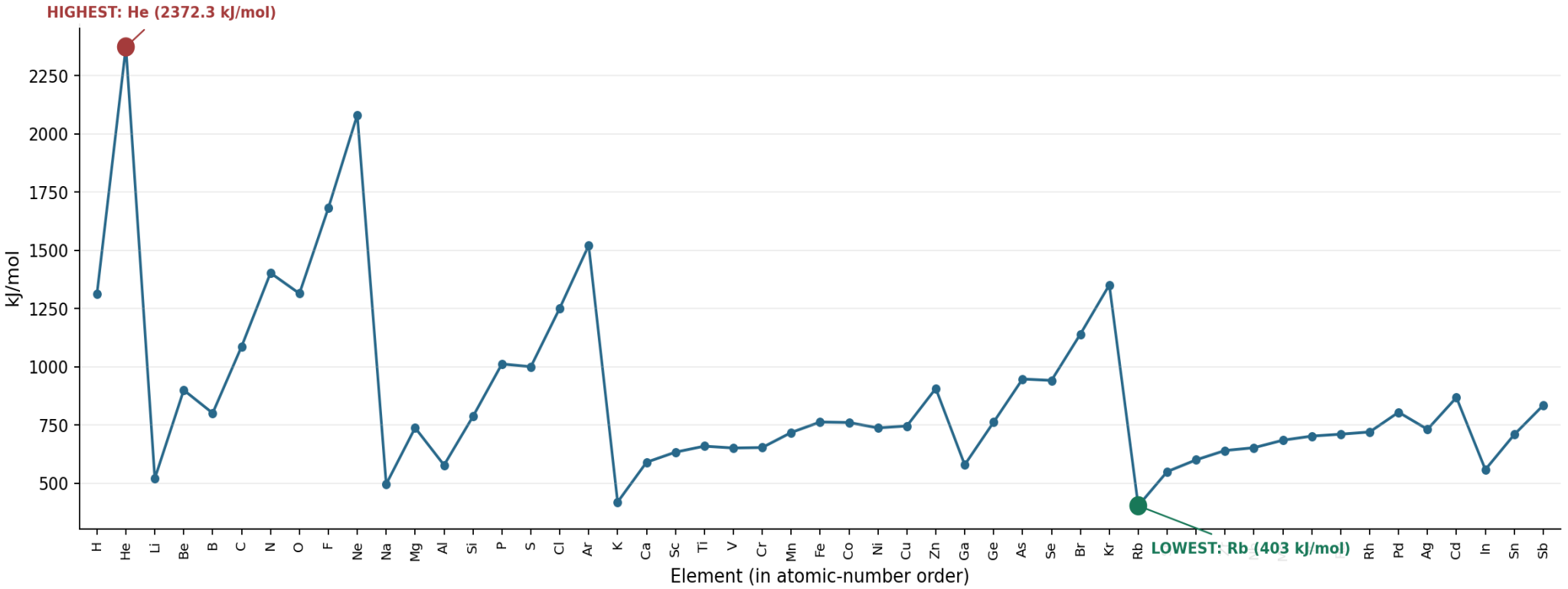
First Ionization Energy: Elements 1-51

Energy required to remove one electron from a neutral gaseous atom



All 51 elements, in atomic-number order

1	H	Hydrogen	1312 kJ/mol
2	**He**	**Helium**	**2372.3 kJ/mol**
3	Li	Lithium	520.2 kJ/mol
4	Be	Beryllium	899.5 kJ/mol
5	B	Boron	800.6 kJ/mol
6	C	Carbon	1086.5 kJ/mol
7	N	Nitrogen	1402.3 kJ/mol
8	O	Oxygen	1313.9 kJ/mol
9	F	Fluorine	1681 kJ/mol
10	Ne	Neon	2080.7 kJ/mol
11	Na	Sodium	495.8 kJ/mol
12	Mg	Magnesium	737.7 kJ/mol
13	Al	Aluminium	577.5 kJ/mol
14	Si	Silicon	786.5 kJ/mol
15	P	Phosphorus	1011.8 kJ/mol
16	S	Sulfur	999.6 kJ/mol
17	Cl	Chlorine	1251.2 kJ/mol
18	Ar	Argon	1520.6 kJ/mol
19	K	Potassium	418.8 kJ/mol
20	Ca	Calcium	589.8 kJ/mol
21	Sc	Scandium	633.1 kJ/mol
22	Ti	Titanium	658.8 kJ/mol
23	V	Vanadium	650.9 kJ/mol
24	Cr	Chromium	652.9 kJ/mol
25	Mn	Manganese	717.3 kJ/mol
26	Fe	Iron	762.5 kJ/mol
27	Co	Cobalt	760.4 kJ/mol
28	Ni	Nickel	737.1 kJ/mol
29	Cu	Copper	745.5 kJ/mol
30	Zn	Zinc	906.4 kJ/mol
31	Ga	Gallium	578.8 kJ/mol
32	Ge	Germanium	762 kJ/mol
33	As	Arsenic	947 kJ/mol
34	Se	Selenium	941 kJ/mol
35	Br	Bromine	1139.9 kJ/mol
36	Kr	Krypton	1350.8 kJ/mol
37	**Rb**	**Rubidium**	**403 kJ/mol**
38	Sr	Strontium	549.5 kJ/mol
39	Y	Yttrium	600 kJ/mol
40	Zr	Zirconium	640.1 kJ/mol
41	Nb	Niobium	652.1 kJ/mol
42	Mo	Molybdenum	684.3 kJ/mol
43	Tc	Technetium	702 kJ/mol
44	Ru	Ruthenium	710.2 kJ/mol
45	Rh	Rhodium	719.7 kJ/mol
46	Pd	Palladium	804.4 kJ/mol
47	Ag	Silver	731 kJ/mol
48	Cd	Cadmium	867.8 kJ/mol
49	In	Indium	558.3 kJ/mol
50	Sn	Tin	708.6 kJ/mol
51	Sb	Antimony	834 kJ/mol

Source: standard tabulated first ionization energies; rounded to 0.1 kJ/mol.