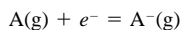


4.3 ELECTRON AFFINITY

TABLE 4.4 Electron Affinities of Atoms, Molecules, and Radicals

Electron affinity of an atom (molecule or radical) is defined as the energy difference between the lowest (ground) state of the neutral and the lowest state of the corresponding negative ion in the gas phase.



Data are limited to those negative ions which, by virtue of their positive electron affinity, are stable. Uncertainty in the final data figures is given in parentheses. Calculated values are enclosed in brackets.

Atom	Electron affinity,	
	in eV	in kJ · mol ⁻¹
Aluminum	0.441(10)	42.5(10)
Antimony	1.046(5)	100.9(5)
Arsenic	0.81(3)	78.(3)
Astatine	[2.8(3)]	[270.(30)]
Barium	[0.15]	[14.]
Bismuth	0.946(10)	91.3(10)
Boron	0.277(10)	26.7(10)
Bromine	3.363590(3)	324.5367(3)
Calcium	0.0185(25)	1.78(24)
Carbon	1.2629(3)	121.85(3)
Cesium	0.471626(25)	45.5048(24)
Chlorine	3.61269	348.570
Chromium	0.666(12)	64.3(12)
Cobalt	0.662(3)	63.9(3)
Copper	1.235(5)	119.2(5)
Fluorine	3.401190(4)	328.1638(4)
Francium	[0.46]	[44]
Gallium	0.30(15)	29.(15)
Germanium	1.233(3)	119.0(3)
Gold	2.30863(3)	222.748(3)
Hafnium	[≈0.]	[≈0.]
Hydrogen	0.75195(19)	72.552(18)
Hydrogen- <i>d</i> ₁ deuterium	0.75459(7)	72.807(7)
Indium	0.3(2)	29.(2)
Iodine	3.05904(1)	295.151(1)
Iridium	1.565(8)	151.0(8)
Iron	0.151(3)	14.6(3)
Lanthanum	[0.5(3)]	[48.(30)]
Lead	0.364(8)	35.1(8)
Lithium	0.6180(5)	59.63(5)
Molybdenum	0.748(2)	72.2(2)
Nickel	1.156(10)	111.5(10)
Niobium	0.893(25)	86.2(24)
Osmium	[0.2(1)]	[19.(10)]
Oxygen	1.4611103(7)	140.97523(7)
Palladium	0.562(5)	54.2(5)
Phosphorus	0.7465(3)	72.03(3)
Platinum	2.128(2)	205.3(2)
Polonium	[1.9(3)]	[183.(30)]

TABLE 4.4 Electron Affinities of Atoms, Molecules, and Radicals (*Continued*)

Atom	Electron affinity,	
	in eV	in kJ · mol ⁻¹
Potassium	0.50147(10)	48.384(10)
Rhenium	[0.15(15)]	[14.(14)]
Rubidium	0.48592(2)	46.884(2)
Ruthenium	[1.05(15)]	[101.(14)]
Scandium	0.188(20)	18.1(19)
Selenium	2.020670(25)	194.9643(24)
Silver	1.302(7)	125.6(7)
Sodium	0.547926(25)	52.86666(24)
Strontium	0.048(6)	4.6(6)
Sulfur	2.077104(1)	200.4094(1)
Tantalum	0.322(12)	31.1(12)
Technetium	[0.55(20)]	[53.(19)]
Tellurium	1.9708(3)	190.15(3)
Thallium	0.2(2)	19.(19)
Tin	1.112(4)	107.3(4)
Titanium	0.079(14)	7.6(14)
Tungsten	0.815(2)	78.6(2)
Vanadium	0.525(12)	50.7(12)
Yttrium	0.307(12)	29.6(12)
Zirconium	0.426(14)	41.1(14)