Cobalt

Other names: cobalt element
Inchi: InChI=1S/Co
InchiKey: GUTLYIVDDKVIGB-UHFFFAOYSA-N
Formula: Co
SMILES: [Co]
Mol. weight [g/mol]: 58.93
CAS: 7440-48-4

Physical Properties

Property code	Value	Unit	Source
affp	742.70	kJ/mol	NIST Webbook
basg	719.80	kJ/mol	NIST Webbook
ea	0.66 ± 0.00	eV	NIST Webbook
ea	0.66 ± 0.00	eV	NIST Webbook
ea	0.66 ± 0.01	eV	NIST Webbook
ie	7.88	eV	NIST Webbook
ie	7.88	eV	NIST Webbook
ie	7.88	eV	NIST Webbook
ie	7.86	eV	NIST Webbook
ie	7.86 ± 0.06	eV	NIST Webbook
ie	7.86	eV	NIST Webbook
ie	7.86	eV	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.83684e+01
Coeff. B	-4.25454e+04
Coeff. C	-1.06930e+02
Temperature range (K), min.	1790.15
Temperature range (K), max.	3198.15

Sources

Cheméo Relay (1.0):

Thermodynamic excess quantities of ternary Au Co Pd melts by computer aided Knudsen cell mass	https://www.doi.org/10.1016/j.tca.2009.05.010
High temperature enthalpy increments and thermodynamic functions of ZrCo: An experimental and theoretical study:	https://www.doi.org/10.1016/j.tca.2015.05.024
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C7440484&Units=SI
Thermodynamic studies on LnCoO3(s) (Ln =Dy, Ho) by solid-state electrochemical cells:	https://www.doi.org/10.1016/j.tca.2008.09.023
Thermodynamic modeling of the Co Hf system supported by key experiments and first-principles calculations:	https://www.doi.org/10.1016/j.tca.2015.04.004
Cheméo Relay (1.0, beta):	
Low-Temperature Heat Capacities and Standard Molar Enthalpy of Formation of Ethylenediammonium Tetrachlorocobaltate(II) Chloride, (HSkCH2CH2NH3)2CoCl4Cl2(s):	https://www.doi.org/10.1021/je901051z
New experimental heat capacity and enthalpy of formation of lithium cobalt (HSkCH2CH2NH3)2CoCl4Cl2(s):	https://www.doi.org/10.1016/j.jct.2014.12.007
Calorimetric investigation of mixing enthalpy of liquid (Co + Cu + Zr) alloys at T = 1873 K:	https://www.doi.org/10.1016/j.jct.2015.02.014
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure

Legend

affp:	Proton affinity
basg:	Gas basicity
ea:	Electron affinity
ie:	Ionization energy
pvap:	Vapor pressure