silver

Other names:	argentum
	silver element
Inchi:	InChI=1S/Ag
InchiKey:	BQCADISMDOOEFD-UHFFFAOYSA-N
Formula:	Ag
SMILES:	[Ag]
Mol. weight [g/mol]:	107.87
CAS:	7440-22-4

Physical Properties

Property code	Value	Unit	Source
ea	1.30 ± 0.20	eV	NIST Webbook
ea	1.30 ± 0.01	eV	NIST Webbook
ea	1.30 ± 0.00	eV	NIST Webbook
ea	1.30 ± 0.03	eV	NIST Webbook
hf	284.90 ± 0.80	kJ/mol	NIST Webbook
ie	7.62 ± 0.07	eV	NIST Webbook
ie	7.57	eV	NIST Webbook
ie	7.50 ± 0.30	eV	NIST Webbook
ie	7.58	eV	NIST Webbook
ie	7.80 ± 0.20	eV	NIST Webbook
ie	7.50	eV	NIST Webbook
ie	7.51 ± 0.07	eV	NIST Webbook
ie	7.58	eV	NIST Webbook
ie	7.53	eV	NIST Webbook
ie	7.58	eV	NIST Webbook
ie	7.58	eV	NIST Webbook
ie	7.57	eV	NIST Webbook
ie	7.60	eV	NIST Webbook
sgb	173.00 ± 0.00	J/mol×K	NIST Webbook
ss	42.55 ± 0.20	J/mol×K	NIST Webbook

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
dvisc	0.0035200	Pa×s	1273.00	A Novel Vibrating Finger Viscometer for High-Temperature Measurements in Liquid Metals and Alloys
dvisc	0.0029040	Pa×s	1323.00	A Novel Vibrating Finger Viscometer for High-Temperature Measurements in Liquid Metals and Alloys
dvisc	0.0028120	Pa×s	1373.00	A Novel Vibrating Finger Viscometer for High-Temperature Measurements in Liquid Metals and Alloys
dvisc	0.0026490	Pa×s	1423.00	A Novel Vibrating Finger Viscometer for High-Temperature Measurements in Liquid Metals and Alloys
dvisc	0.0025400	Pa×s	1473.00	A Novel Vibrating Finger Viscometer for High-Temperature Measurements in Liquid Metals and Alloys
dvisc	0.0024980	Pa×s	1523.00	A Novel Vibrating Finger Viscometer for High-Temperature Measurements in Liquid Metals and Alloys
dvisc	0.0023990	Pa×s	1573.00	A Novel Vibrating Finger Viscometer for High-Temperature Measurements in Liquid Metals and Alloys
dvisc	0.0023320	Pa×s	1623.00	A Novel Vibrating Finger Viscometer for High-Temperature Measurements in Liquid Metals and Alloys

dvisc	0.0022140	Pa×s	1673.00	A Novel Vibrating Finger Viscometer for High-Temperature Measurements in Liquid Metals and Alloys
econd	61070000.00	S/m	298.00	Structural and physical studies of the Ag-rich alloys from Ag-Li system
hvapt	265.10	kJ/mol	1367.00	Mass spectrometric study of the vaporization behaviour of alpha-Na2NpO4: Thermodynamic investigation of the enthalpy of formation

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.66364e+01
Coeff. B	-2.82950e+04
Coeff. C	-8.12200e+01
Temperature range (K), min.	1283.00
Temperature range (K), max.	2453.15

Sources

Calorimetric studies and thermodynamic properties of liquid Ag-Ga alloys:	https://www.doi.org/10.1016/j.jct.2014.05.021
Enthalpies of mixing of liquid Ag-Ga, Au-Ga and Ag-Au-Ga alloys:	https://www.doi.org/10.1016/j.jct.2016.12.020
Thermodynamic properties of liquid Ag-Li alloys:	https://www.doi.org/10.1016/j.jct.2016.06.013
Thermodynamic properties of liquid silver-gold-gallium alloys determined from EMF measurements with solid YSZ electrolyte:	https://www.doi.org/10.1016/j.tca.2018.02.012
Mass spectrometric study of the vaporization behaviour of alpha-Na2NpO4: Thermodynamic investigation of the enthalpy of formation:	https://www.doi.org/10.1016/j.jct.2012.11.034
Thermodynamic properties of liquid silver-indium alloys determined from EMF measurements:	https://www.doi.org/10.1016/j.tca.2005.02.005
Enthalpies of mixing of Au Pb and Ag Au Pb liquid alloys at 973K:	https://www.doi.org/10.1016/j.tca.2007.07.015
Mixing enthalpies of liquid Bi-Ni and Ag-Bi-Ni alloys:	https://www.doi.org/10.1016/j.tca.2017.09.002
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure

The measurement of thermal conductivity variation with temperature for Sn-20 wt.% In based lead-free ternary solders:	https://www.doi.org/10.1016/j.tca.2012.12.012
Partial and Integral Enthalpies of mixing of Ag-Ga-Sn liquid alloys:	https://www.doi.org/10.1016/j.tca.2011.04.032
Thermodynamic behavior of polyvalent solutes in solid silver: System Ag Sb:	https://www.doi.org/10.1016/j.tca.2012.09.037
Experimentally determined thermodynamic properties of schapbachite (α-AgBiSe2) below T = 700 K:	https://www.doi.org/10.1016/j.jct.2013.11.006
Thermodynamic stability of Ag2Se at temperature from (400 to 700) K by a solid state galvanic cell:	https://www.doi.org/10.1016/j.jct.2013.11.031
A Novel Vibrating Finger Viscometer for High-Temperature Measurements in Liquid Metals and Alloys:	https://www.doi.org/10.1007/s10765-016-2104-7
Structural and physical studies of the Ag-rich alloys from Ag-Li system:	https://www.doi.org/10.1016/j.tca.2019.01.016
KDB:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1944
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C7440224&Units=SI
Experimental investigation and modelling of phase equilibria for the Ag-Cu-Pb system in vacuum distillation:	https://www.doi.org/10.1016/j.fluid.2016.02.026
Thermodynamic study in the Ag-Sb-S system by the EMF method:	https://www.doi.org/10.1016/j.jct.2016.03.009
Enthalpy of mixing in the Ag-Cd-In ternary liquid phase:	https://www.doi.org/10.1016/j.jct.2016.12.005
Calorimetric measurements and first principles to study the (Ag-Li) liquid system:	https://www.doi.org/10.1016/j.jct.2014.10.023

Legend

dvisc:	Dynamic viscosity
ea:	Electron affinity
econd:	Electrical conductivity
hf:	Enthalpy of formation at standard conditions
hvapt:	Enthalpy of vaporization at a given temperature
ie:	Ionization energy
pvap:	Vapor pressure
sgb:	Molar entropy at standard conditions (1 bar)
ss:	Solid phase molar entropy at standard conditions