indium

Inchi: InChI=1S/In
InchiKey: APFVFJFRJDLVQX-UHFFFAOYSA-N
Formula: In
SMILES: [In]
Mol. weight [g/mol]: 114.82
CAS: 7440-74-6

Physical Properties

Property code	Value	Unit	Source
ea	0.30 ± 0.20	eV	NIST Webbook
ea	0.40 ± 0.01	eV	NIST Webbook
ea	0.38 ± 0.00	eV	NIST Webbook
ea	0.85 ± 0.15	eV	NIST Webbook
hfus	3.27	kJ/mol	Odd even effect in melting properties of 12 alkane-a,x-diamides
ie	5.79 ± 0.00	eV	NIST Webbook
ie	5.85 ± 0.07	eV	NIST Webbook
ie	5.78 ± 0.03	eV	NIST Webbook
ie	5.79	eV	NIST Webbook
ie	5.50 ± 0.20	eV	NIST Webbook
ie	5.79	eV	NIST Webbook
ie	5.50 ± 0.10	eV	NIST Webbook
ie	5.70 ± 0.20	eV	NIST Webbook
ie	5.79 ± 0.00	eV	NIST Webbook
tf	430.15 ± 1.00	K	NIST Webbook

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source

tcondl	34.00	W/m×K	453.00	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements
tcondl	38.00	W/m×K	491.50	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements
tcondl	39.00	W/m×K	521.90	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements
tcondl	40.50	W/m×K	554.20	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements
tcondl	42.30	W/m×K	587.10	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements
tcondl	43.50	W/m×K	617.10	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements
tcondl	45.00	W/m×K	660.90	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements

tcondl	46.50	W/m×K	700.40	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements
tcondl	47.50	W/m×K	743.60	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements
tcondl	36.30	W/m×K	467.00	Repeatability and Refinement of a Transient Hot-wire Instrument for Measuring the Thermal Conductivity of High Temperature Melts
tcondl	37.00	W/m×K	495.40	Repeatability and Refinement of a Transient Hot-wire Instrument for Measuring the Thermal Conductivity of High Temperature Melts
tcondl	38.20	W/m×K	522.20	Repeatability and Refinement of a Transient Hot-wire Instrument for Measuring the Thermal Conductivity of High Temperature Melts
tcondl	40.00	W/m×K	575.90	Repeatability and Refinement of a Transient Hot-wire Instrument for Measuring the Thermal Conductivity of High Temperature Melts

tcondl	41.40	W/m×K	608.80	Repeatability and Refinement of a Transient Hot-wire Instrument for Measuring the Thermal Conductivity of High Temperature Melts
tcondl	42.20	W/m×K	630.20	Repeatability and Refinement of a Transient Hot-wire Instrument for Measuring the Thermal Conductivity of High Temperature Melts
tcondl	44.00	W/m×K	684.50	Repeatability and Refinement of a Transient Hot-wire Instrument for Measuring the Thermal Conductivity of High Temperature Melts
tcondl	44.40	W/m×K	711.00	Repeatability and Refinement of a Transient Hot-wire Instrument for Measuring the Thermal Conductivity of High Temperature Melts
tcondl	45.30	W/m×K	734.10	Repeatability and Refinement of a Transient Hot-wire Instrument for Measuring the Thermal Conductivity of High Temperature Melts

Correlations

Information	Value

Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.63791e+01
Coeff. B	-2.73012e+04
Coeff. C	-2.37700e+01
Temperature range (K), min.	1173.15
Temperature range (K), max.	2345.15

Sources

Liquid phase vapor pressure measurement and thermodynamics assessment of the Hg-In binary system:	https://www.doi.org/10.1016/j.tca.2009.02.020
Phase equilibria and thermodynamics of the Bi Cu In ternary system:	https://www.doi.org/10.1016/j.tca.2009.09.004
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
Thermophysical Properties of the Liquid Ga-In-Sn Eutectic Alloy:	https://www.doi.org/10.1021/je400882q
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
Odd-even effect in melting properties of 12 alkane-a,x-diamides:	https://www.doi.org/10.1016/j.jct.2006.04.004
Enthalpies of Mixing of Liquid In-Sn and In-Sn-Zn Alloys:	https://www.doi.org/10.1016/j.tca.2010.02.008
Measurement of zinc activity in the ternary In Zn Sn alloys by EMFmethod:	https://www.doi.org/10.1016/j.tca.2013.06.039
Enthalpy of mixing in the Ag-Cd-In ternary liquid phase:	https://www.doi.org/10.1016/j.jct.2016.12.005
Repeatability and Refinement of a Transient Hot-wire Instrument for Measuring the Thermal Conductivity of High Temperature Melts:	https://www.doi.org/10.1007/s10765-006-0124-4
A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements:	https://www.doi.org/10.1007/s10765-006-0057-y
Thermodynamic properties of liquid silver indium alloys determined from e.m.f. measurements:	https://www.doi.org/10.1016/j.tca.2005.02.005
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C7440746&Units=SI
Thermodynamic properties of ternary Me-Ga-In (Me = La, U) alloys in a fused Ga-In/LiCl-KCl system:	https://www.doi.org/10.1016/j.jct.2018.10.014
Experimental study on gallium activity in the liquid Ga In Tl alloys by EMF method with zirconia solid electrolyte:	https://www.doi.org/10.1016/j.tca.2005.01.061
Thermodynamic investigations on barium indate:	https://www.doi.org/10.1016/j.jct.2015.04.035
Thermal conductivity and interfacial energy of solid Bi solution in the Bi-Al-Zn eutectic system:	https://www.doi.org/10.1016/j.fluid.2010.02.029

Legend

ea:	Electron affinity
hfus:	Enthalpy of fusion at standard conditions
ie:	Ionization energy
pvap:	Vapor pressure
tcondl:	Liquid thermal conductivity
tf:	Normal melting (fusion) point