

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

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
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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	$\ln(P_{vp}) = A + B/(T + C)$
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
Enthalpy of mixing in the Ag-Cd-In ternary liquid phase: Thermodynamic investigations on barium indate: Cheméo Relay (1.0):	http://webbook.nist.gov/cgi/cbook.cgi?ID=C7440746&Units=SI https://www.doi.org/10.1016/j.jct.2016.12.005 https://www.doi.org/10.1016/j.jct.2015.04.035
Repeatability and Refinement of a Transient Hot-wire Instrument for Experimental study on gallium activity in the liquid Ga-In alloys by EMF method with Zn-Moonga solid electrolyte: and In-Sn-Zn Alloys: Cheméo Relay (1.0, beta):	https://www.doi.org/10.1007/s10765-006-0124-4 https://www.doi.org/10.1016/j.tca.2005.01.061 https://www.doi.org/10.1016/j.tca.2010.02.008
A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals in the Bi-Cu-In ternary system: Phase equilibria and thermodynamics of the Bi-Cu-In ternary system: The measurement of thermal conductivity variation with temperature for Sn-Zn-In based ternary alloys: Thermodynamic properties of gallium and indium intermetallic compounds: Ternary Me-Ga-In (Me = La, U) alloys in a fused Ga-In-Sn eutectic system: Thermodynamic properties of 12 alkane- α,ω -diamides: Thermodynamic properties of liquid silver-indium alloys determined from the physical properties of the liquid Ga-In-Sn eutectic alloy: Thermal conductivity and interfacial energy of solid Bi solution in the Bi-Ag-Zn eutectic system: Vapor Pressure:	https://www.doi.org/10.1007/s10765-006-0057-y https://www.doi.org/10.1016/j.tca.2013.06.039 https://www.doi.org/10.1016/j.tca.2009.09.004 https://www.doi.org/10.1016/j.tca.2012.12.012 https://www.doi.org/10.1016/j.jct.2018.08.013 https://www.doi.org/10.1016/j.jct.2018.10.014 https://www.doi.org/10.1016/j.jct.2006.04.004 https://www.doi.org/10.1016/j.tca.2005.02.005 https://www.doi.org/10.1021/je400882q https://www.doi.org/10.1016/j.fluid.2010.02.029 https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure

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

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