gallium

Inchi: InChI=1S/Ga
InchiKey: GYHNNYVSQQEPJS-UHFFFAOYSA-N
Formula: Ga
SMILES: [Ga]
Mol. weight [g/mol]: 69.72
CAS: 7440-55-3

Physical Properties

Property code	Value	Unit	Source
ea	0.43 ± 0.03	eV	NIST Webbook
ea	0.30 ± 0.15	eV	NIST Webbook
ea	0.40 ± 0.20	eV	NIST Webbook
ie	6.00	eV	NIST Webbook
ie	6.10 ± 0.40	eV	NIST Webbook
ie	6.10	eV	NIST Webbook
ie	6.00	eV	NIST Webbook
ie	6.00	eV	NIST Webbook
ie	6.00	eV	NIST Webbook
ie	6.00	eV	NIST Webbook
ie	6.00 ± 0.20	eV	NIST Webbook
ie	6.00 ± 0.30	eV	NIST Webbook
tf	302.92 ± 0.00	K	NIST Webbook
tf	303.40	K	Determination of thermophysical properties of cyclopentane hydrate using a stirred calorimetric cell
tt	302.92 ± 0.00	K	NIST Webbook
tt	302.92 ± 0.00	K	NIST Webbook

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source

tcondl	29.30	W/m×K	321.30	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements
tcondl	33.50	W/m×K	367.70	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements
tcondl	37.00	W/m×K	416.30	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements
tcondl	41.10	W/m×K	465.60	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements
tcondl	45.00	W/m×K	520.40	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements
tcondl	47.70	W/m×K	565.00	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements
tcondl	50.90	W/m×K	614.30	A Novel Instrument for the Measurement of the Thermal Conductivity of Molten Metals. Part II: Measurements

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.69604e+01
Coeff. B	-3.09426e+04
Coeff. C	-1.37600e+01
Temperature range (K), min.	1310.15
Temperature range (K), max.	2518.15

Sources

Thermophysical Properties of the Liquid Ga-In-Sn Eutectic Alloy:	https://www.doi.org/10.1021/je400882q
Calorimetric study of enthalpies of mixing in liquid gallium germanium yttrium alloys:	https://www.doi.org/10.1016/j.tca.2005.08.004
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
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C7440553&Units=SI
Thermodynamic properties of Ga-Zn system. Experiment vs model:	https://www.doi.org/10.1016/j.jct.2016.07.029
Thermodynamics of uranium in (Ga + Sn) eutectic alloy:	https://www.doi.org/10.1016/j.jct.2015.09.023
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
The physicochemical properties of liquid Ga-Zn alloys:	https://www.doi.org/10.1016/j.fluid.2017.03.025
Thermodynamic description of the Ga-Li-Zn system:	https://www.doi.org/10.1016/j.tca.2017.10.004
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
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
Thermophysical properties of Ga-Zn eutectic alloys with Sn additions:	https://www.doi.org/10.1016/j.fluid.2018.07.008
Thermophysical properties of the liquid Ga-Sn-Zn eutectic alloy:	https://www.doi.org/10.1016/j.fluid.2018.03.001
Thermodynamic properties of liquid Ga-Li alloys: Experiment vs. modeling:	https://www.doi.org/10.1016/j.jct.2016.02.015
Determination of thermophysical properties of cyclopentane hydrate using a stirred calorimetric cell:	https://www.doi.org/10.1016/j.jct.2018.05.023
Vaporization in the Ga2O3-ZnO system by high temperature mass spectrometry:	https://www.doi.org/10.1016/j.jct.2017.07.009
Partial and Integral Enthalpies of mixing of Ag-Ga-Sn liquid alloys:	https://www.doi.org/10.1016/j.tca.2011.04.032
Mixing enthalpy of liquid Ga Li Zn alloys:	https://www.doi.org/10.1016/j.tca.2015.12.011
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
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure

Legend

ea:	Electron affinity
ie:	Ionization energy
pvap:	Vapor pressure
tcondl:	Liquid thermal conductivity
tf:	Normal melting (fusion) point
tt:	Triple Point Temperature