

germanium

Inchi:	InChI=1S/Ge
InchiKey:	GNPVGFCGXDBREM-UHFFFAOYSA-N
Formula:	Ge
SMILES:	[Ge]
Mol. weight [g/mol]:	72.64
CAS:	7440-56-4

Physical Properties

Property code	Value	Unit	Source
ea	1.23 ± 0.00	eV	NIST Webbook
ea	1.23 ± 0.00	eV	NIST Webbook
hf	372.00 ± 8.00	kJ/mol	NIST Webbook
ie	7.90	eV	NIST Webbook
ie	7.90 ± 0.00	eV	NIST Webbook
ie	7.90	eV	NIST Webbook
ie	7.90 ± 0.00	eV	NIST Webbook
ie	7.80 ± 0.50	eV	NIST Webbook
ie	8.00 ± 0.30	eV	NIST Webbook
ie	7.90	eV	NIST Webbook
sgb	167.90 ± 0.01	J/mol×K	NIST Webbook
ss	31.09 ± 0.15	J/mol×K	NIST Webbook

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
speedsl	2690.90	m/s	1216.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV
speedsl	2689.90	m/s	1216.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV

speedsl	2690.80	m/s	1233.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV
speedsl	2691.10	m/s	1233.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV
speedsl	2689.50	m/s	1252.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV
speedsl	2696.20	m/s	1252.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV
speedsl	2692.00	m/s	1270.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV
speedsl	2695.00	m/s	1270.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV
speedsl	2690.80	m/s	1289.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV
speedsl	2700.40	m/s	1289.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV
speedsl	2690.60	m/s	1307.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV
speedsl	2695.00	m/s	1307.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV

speedsl	2673.60	m/s	1352.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV
speedsl	2678.40	m/s	1352.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV
speedsl	2662.80	m/s	1398.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV
speedsl	2666.30	m/s	1398.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV
speedsl	2652.50	m/s	1443.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV
speedsl	2654.40	m/s	1443.00	Temperature Dependence of the Velocity of Sound in Liquid Metals of Group XIV

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	1.73138e+01
Coeff. B	-3.90365e+04
Coeff. C	-3.25100e+01
Temperature range (K), min.	1644.15
Temperature range (K), max.	3106.15

Sources

The Yaws Handbook of Vapor Pressure: Temperature Dependence of the Velocity of Sound in Liquid Metals of High Temperature calorimetric examination of enthalpies of mixing in thermodynamic properties of manganese materials for two solid solutions, beta-K2FeO10] and Ni2Co2O7, gallium germanium tellurium alloys:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
NIST Webbook:	https://www.doi.org/10.1007/s10765-007-0151-9
	https://www.doi.org/10.1016/j.jct.2005.09.002
	https://www.doi.org/10.1016/j.jct.2015.08.032
	https://www.doi.org/10.1016/j.tca.2005.08.004
	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1953
	http://webbook.nist.gov/cgi/cbook.cgi?ID=C7440564&Units=SI

Legend

ea:	Electron affinity
hf:	Enthalpy of formation at standard conditions
ie:	Ionization energy
pvap:	Vapor pressure
sgb:	Molar entropy at standard conditions (1 bar)
speedsl:	Speed of sound in fluid
ss:	Solid phase molar entropy at standard conditions

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