

Graphite

Inchi:	InChI=1S/C
InchiKey:	OKTJSMMVPCPJKN-UHFFFAOYSA-N
Formula:	C
SMILES:	[C]
Mol. weight [g/mol]:	12.01
CAS:	7782-42-5

Physical Properties

Property code	Value	Unit	Source
pt	10200.00 ± 1500.00	kPa	NIST Webbook
ss	5.74 ± 0.10	J/mol×K	NIST Webbook
ss	5.51	J/mol×K	NIST Webbook
ss	6.24	J/mol×K	NIST Webbook
ss	5.40	J/mol×K	NIST Webbook
ss	5.47	J/mol×K	NIST Webbook
ss	5.94	J/mol×K	NIST Webbook
ss	5.64	J/mol×K	NIST Webbook
ss	5.43	J/mol×K	NIST Webbook
ss	5.43	J/mol×K	NIST Webbook
ss	5.69	J/mol×K	NIST Webbook
tt	5000.00 ± 300.00	K	NIST Webbook

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cps	8.23	J/mol×K	298.00	NIST Webbook
cps	10.05	J/mol×K	300.00	NIST Webbook
cps	8.43	J/mol×K	300.00	NIST Webbook
cps	8.62	J/mol×K	300.00	NIST Webbook
cps	8.11	J/mol×K	298.15	NIST Webbook
cps	8.12	J/mol×K	298.00	NIST Webbook
cps	8.98	J/mol×K	298.15	NIST Webbook
cps	8.47	J/mol×K	298.15	NIST Webbook
cps	8.05	J/mol×K	298.15	NIST Webbook

cps	8.05	J/mol×K	298.15	NIST Webbook
cps	8.58	J/mol×K	300.00	NIST Webbook
cps	8.94	J/mol×K	298.15	NIST Webbook
cps	7.84	J/mol×K	298.15	NIST Webbook
cps	8.53	J/mol×K	298.15	NIST Webbook
cps	8.50	J/mol×K	293.50	NIST Webbook
rhos	1804.00	kg/m3	298.00	A new numerical method and modified apparatus for the simultaneous evaluation of thermo-physical properties above 1500 K: A case study on isostatically pressed graphite

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{\text{vap}}) = A + B/(T + C)$
Coeff. A	2.91297e+01
Coeff. B	-9.60247e+04
Coeff. C	7.45000e+00
Temperature range (K), min.	2839.00
Temperature range (K), max.	3908.00

Sources

When theory and experiment hold hands: The thermochemistry of gamma-dynamite reveals biological reaction: A comprehensive combined experimental and computational study: thermochemistry of 6,7-dihydro-1H-pyrazolo[1,5-a]pyrazole complex of neodymium with glycine: Standard enthalpy, entropy and Gibbs free energy of formation of "A" type Eu(III)-amine extended experimental thermodynamics study: Low- temperature Heat Capacities and Standard Molar Enthalpy of Formation Experimental Hydrogenation thermochemistry of 1-phenylpyrrole law 1974: Phenyl heat capacity and the Standard Molar Enthalpy of Formation low Temperature Heat Capacities and Standard Molar Enthalpy of Formation of Ethylenediammonium Tetrachlorocobaltate(II) Chloride ($\text{H}_3\text{NCH}_2\text{CH}_2\text{NH}_3)_2[\text{CoCl}_4]\text{Cl}_2(\text{s})$):	https://www.doi.org/10.1016/j.jct.2011.02.021 https://www.doi.org/10.1016/j.fluid.2016.01.035 https://www.doi.org/10.1016/j.jct.2012.07.008 https://www.doi.org/10.1016/j.jct.2014.11.012 https://www.doi.org/10.1016/j.jct.2016.10.035 https://www.doi.org/10.1016/j.jct.2011.09.006 https://www.doi.org/10.1021/e900759f https://www.doi.org/10.1016/j.jct.2010.01.009 https://www.doi.org/10.1016/j.tca.2012.05.023 https://www.doi.org/10.1021/je901051z
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Synthesis, Characterization, and Thermodynamic Study of Barium Standard Ba(77.1502)P(s): formation in the crystalline phase of Thermochemical Analysis on Rare Earth oxocomplexes of Gadolinium with Lanthanide Hydroxides and standard molar enthalpy of formation Enthalpies of 1,4-diazepinone Derivatives: A joint calorimetric and computational experimental and computational thermochemical studies of benzoxazole and two related benzoxazoles and standard molar enthalpy of formation Experimental study on the thermodynamics of square planar $\text{L}^{\text{2}}\text{M}^{\text{2}}\text{O}_4 = \text{L}-\text{M}-\text{O}_4$ complexes: An computational study on the energetics of New hydrocalorimetric and hydroisopentene apparatus for the simultaneous evaluation of MHD and Cyclic Activation Peroxides: A case study Enthalpy of formation of $\text{Ln}_2\text{O}_2\text{CO}_3$ ($\text{Ln} = \text{La, Nd, Eu}$) and Thermodynamics Synthesis, Structure, Characterization and Thermochemistry of Copper Standard 2,6-naphthyridine of copper(II) pivalate: Standard molar enthalpies of formation of 1- and 2-cyanonaphthalene: Experimental and computational thermochemical study of two Standard molar enthalpies of formation of three metal cyanide derivatives: Synthesis, 2-methylbenzimidazole: thermodynamics of a lanthanide Evaluation of combustion properties and enthalpies of sublimation of the 5- and tetraphenylcyclopentadienoate Yaws Standard Heat Capacities and Standard Molar Enthalpy of Formation The Yaws Handbook of Vapor Pressure: Pressure: Standard molar enthalpies of formation of copper(II) beta-diketonates and Thermochemical properties of crystalline compounds bis-(n-dodecylammonium) tetrachlorometallates ($\text{n-C}_{12}\text{H}_{25}\text{NH}_3\text{)}_2\text{MCl}_4\text{(s)}$ ($\text{M} = \text{Cu}$ and Molecular energetics of pyrrolecarbonitriles and derivatives: A determination of the energies of combustion and formation by 2,4-dinitrophenolones: Calorimetry redetermination of the gas-phase enthalpy of formation of synthesis and energetics of $\text{Na}, \text{K}, \text{Rb}$ and Cs salts by reaction with Thermochemical studies of bis($\text{O-alkyl-N-benzoylthiocarbamato}$)nickel(II) Complexes: crystal structure and thermochemistry of nickel hydrogen syntheses and physico-chemical properties of 4-nitro-2,1,3-benzothiadiazole: Standard molar enthalpies of formation of two crystalline Thermochemical study of some 1(benzimidazolyl)benzimidinate nickel(II) dichloroacetophenone isomers: Crystal structure and thermochemical properties of a novel coordination compound manganese D-gluconate tetrahydrate:	https://www.doi.org/10.1021/je800876t https://www.doi.org/10.1016/j.jct.2011.04.013 https://www.doi.org/10.1016/j.tca.2012.08.027 https://www.doi.org/10.1016/j.tca.2008.12.029 https://www.doi.org/10.1016/j.jct.2011.04.022 https://www.doi.org/10.1016/j.jct.2012.08.028 https://www.doi.org/10.1016/j.tca.2008.02.024 https://www.doi.org/10.1016/j.jct.2011.06.003 https://www.doi.org/10.1016/j.jct.2010.10.009 https://www.doi.org/10.1016/j.tca.2017.03.004 https://www.doi.org/10.1016/j.tca.2014.03.046 https://www.doi.org/10.1016/j.tca.2012.09.036 https://www.doi.org/10.1016/j.tca.2012.12.024 https://www.doi.org/10.1016/j.jct.2018.11.016 https://www.doi.org/10.1016/j.jct.2011.03.013 https://www.doi.org/10.1016/j.jct.2018.01.022 https://www.doi.org/10.1016/j.jct.2011.10.007 https://www.doi.org/10.1016/j.jct.2012.06.029 https://www.doi.org/10.1016/j.jct.2009.09.009 https://www.doi.org/10.1016/j.jct.2018.11.011 https://www.doi.org/10.1007/s10765-009-0568-4 https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure https://www.doi.org/10.1016/j.jct.2005.08.017 https://www.doi.org/10.1016/j.jct.2013.07.001 http://webbook.nist.gov/cgi/cbook.cgi?ID=C7782425&Units=SI https://www.doi.org/10.1016/j.jct.2011.12.019 https://www.doi.org/10.1016/j.jct.2009.10.003 https://www.doi.org/10.1016/j.jct.2011.01.006 https://www.doi.org/10.1016/j.jct.2012.09.007 https://www.doi.org/10.1016/j.jct.2017.07.025 https://www.doi.org/10.1016/j.jct.2004.04.001 https://www.doi.org/10.1016/j.tca.2013.03.007 https://www.doi.org/10.1016/j.jct.2012.01.018 https://www.doi.org/10.1016/j.jct.2004.04.009 https://www.doi.org/10.1016/j.jct.2010.09.005 https://www.doi.org/10.1016/j.jct.2014.03.009
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Legend

cps: Solid phase heat capacity
pt: Triple Point Pressure

pvap:	Vapor pressure
rhos:	Solid Density
ss:	Solid phase molar entropy at standard conditions
tt:	Triple Point Temperature

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