neon

Inchi: InChI=1S/Ne
InchiKey: GKAOGPIIYCISHV-UHFFFAOYSA-N
Formula: Ne
SMILES: [Ne]
Mol. weight [g/mol]: 20.18
CAS: 7440-01-9

Physical Properties

Property code	Value	Unit	Source
af	-0.0290		KDB
affp	198.80	kJ/mol	NIST Webbook
basg	174.40	kJ/mol	NIST Webbook
dm	0.00	debye	KDB
ie	21.56	eV	NIST Webbook
ie	21.59	eV	NIST Webbook
ie	21.56 ± 0.00	eV	NIST Webbook
ie	22.00	eV	NIST Webbook
ie	21.57	eV	NIST Webbook
ie	21.50	eV	NIST Webbook
ie	21.56 ± 0.00	eV	NIST Webbook
ie	21.56	eV	NIST Webbook
pc	2760.00	kPa	KDB
pt	50.00	kPa	KDB
pt	43.37 ± 0.00	kPa	NIST Webbook
pt	43.30 ± 0.27	kPa	NIST Webbook
sgb	146.33 ± 0.00	J/mol×K	NIST Webbook
tb	27.07	K	KDB
tc	44.40	K	KDB
tf	24.56	K	KDB
tt	24.56 ± 0.05	K	NIST Webbook
tt	24.56 ± 0.00	K	NIST Webbook
tt	24.56	K	KDB
tt	24.54	K	Further results on the triple point temperature of pure 20Ne and 22Ne
vc	0.042	m3/kmol	KDB
zc	0.3140070		KDB
zra	0.31		KDB

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
rhol	1204.00	kg/m3	27.00	KDB

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.35144e+01
Coeff. B	-2.65554e+02
Coeff. C	2.76000e+00
Temperature range (K), min.	24.56
Temperature range (K), max.	44.40

Sources

Measurements of enthalpy of sublimation of Ne, N2, O2, Ar, CO2, Kr, Xe, and H2O using a double paddle calorimeter:	https://www.doi.org/10.1016/j.jct.2017.11.004
Solubilities of gases in cyclothers.	https://www.doi.org/10.1016/j.jct.2018.12.037
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C7440019&Units=SI
The solubility of 13 nonpolar gases in 2,5-dimethyltetrahydrofuran at 273.15 to 303.15 K and 101.32 kPa:	https://www.doi.org/10.1016/j.jct.2011.11.019
Solubility of gases in fluoroorganic alcohols. Part II. Solubilities of noble gases in (water + 1,1,1,3,3,3-hexafluoropropan-2-ol) at 298.15 K and 101.33 kPa:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
The Yaws Handbook of Vapor Pressure:	https://www.doi.org/10.1021/je020199q
Solubilities of Nonpolar Gases in Triethylene Glycol Dimethyl Ether, Tetraethylene Glycol Dimethyl Ether, Dimethyl Carbonate, and Diethyl Carbonate at 298.15 K and 101.33 kPa:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1960
Further results on the triple point temperature of pure 20Ne and 22Ne:	https://www.doi.org/10.1016/j.jct.2011.07.011
Partial Pressure of Gas:	https://www.doi.org/10.1007/s10765-012-1352-4
Measurement of Binary Diffusion Coefficients for Neon Argon Gas Mixtures Using a Loschmidt Cell Combined with Holographic Interferometry:	

Legend

af: Acentric Factor

affp:	Proton affinity
basg:	Gas basicity
dm:	Dipole Moment
ie:	Ionization energy
pc:	Critical Pressure
pt:	Triple Point Pressure
pvap:	Vapor pressure
rhol:	Liquid Density
sgb:	Molar entropy at standard conditions (1 bar)
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
tt:	Triple Point Temperature
vc:	Critical Volume
zc:	Critical Compressibility
zra:	Rackett Parameter

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