

n-Nonylcyclohexane

Other names:	1-cyclohexylnonane Cyclohexane, nonyl- Nonylcyclohexane Nonylcyclohexane nonane, 1-cyclohexyl-
Inchi:	InChI=1S/C15H30/c1-2-3-4-5-6-7-9-12-15-13-10-8-11-14-15/h15H,2-14H2,1H3
InchiKey:	CLMFECCMAVQYQA-UHFFFAOYSA-N
Formula:	C15H30
SMILES:	CCCCCCCCC1CCCCC1
Mol. weight [g/mol]:	210.40
CAS:	2883-02-5

Physical Properties

Property code	Value	Unit	Source
chl	-9874.10 ± 2.10	kJ/mol	NIST Webbook
gf	99.87	kJ/mol	Joback Method
hf	-316.20 ± 2.30	kJ/mol	NIST Webbook
hfus	26.44	kJ/mol	Joback Method
hvap	74.70	kJ/mol	NIST Webbook
log10ws	-5.75		Crippen Method
logp	5.707		Crippen Method
mcvol	211.350	ml/mol	McGowan Method
pc	1661.90	kPa	Joback Method
rinpol	1536.00		NIST Webbook
rinpol	1544.32		NIST Webbook
rinpol	1549.04		NIST Webbook
rinpol	1552.36		NIST Webbook
rinpol	1551.07		NIST Webbook
rinpol	1551.20		NIST Webbook
rinpol	1559.54		NIST Webbook
rinpol	1535.00		NIST Webbook
rinpol	1549.60		NIST Webbook
rinpol	1543.00		NIST Webbook
rinpol	1535.00		NIST Webbook
rinpol	1549.60		NIST Webbook
rinpol	1552.36		NIST Webbook
rinpol	1546.00		NIST Webbook

rinpol	1556.00		NIST Webbook
rinpol	1543.00		NIST Webbook
rinpol	1543.00		NIST Webbook
rinpol	1546.00		NIST Webbook
rinpol	1556.36		NIST Webbook
rinpol	1556.00		NIST Webbook
tb	554.70 ± 0.60	K	NIST Webbook
tb	545.00 ± 3.00	K	NIST Webbook
tc	747.76	K	Joback Method
tf	266.19	K	Joback Method
vc	0.808	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	550.98	J/mol×K	562.15	Joback Method
cpg	669.08	J/mol×K	747.76	Joback Method
cpg	594.41	J/mol×K	624.02	Joback Method
cpg	614.56	J/mol×K	654.95	Joback Method
cpg	633.70	J/mol×K	685.89	Joback Method
cpg	651.86	J/mol×K	716.82	Joback Method
cpg	573.23	J/mol×K	593.08	Joback Method
dvisc	0.0002482	Pa×s	512.82	Joback Method
dvisc	0.0003642	Pa×s	463.50	Joback Method
dvisc	0.0005854	Pa×s	414.17	Joback Method
dvisc	0.0010699	Pa×s	364.84	Joback Method
dvisc	0.0023609	Pa×s	315.52	Joback Method
dvisc	0.0001810	Pa×s	562.15	Joback Method
dvisc	0.0069856	Pa×s	266.19	Joback Method
rhoI	768.50	kg/m3	363.15	Densities, Speeds of Sound, and Viscosities of Binary Mixtures of an n-Alkylcyclohexane (n-Propyl-, n-Pentyl-, n-Hexyl-, n-Heptyl, n-Octyl-, n-Nonyl-, n-Decyl-, and n-Dodecyl-) with n-Hexadecane

rhoI	761.60	kg/m3	373.15	Densities, Speeds of Sound, and Viscosities of Binary Mixtures of an n-Alkylcyclohexane (n-Propyl-, n-Pentyl-, n-Hexyl-, n-Heptyl-, n-Octyl-, n-Nonyl-, n-Decyl-, and n-Dodecyl-) with n-Hexadecane
rhoI	775.40	kg/m3	353.15	Densities, Speeds of Sound, and Viscosities of Binary Mixtures of an n-Alkylcyclohexane (n-Propyl-, n-Pentyl-, n-Hexyl-, n-Heptyl-, n-Octyl-, n-Nonyl-, n-Decyl-, and n-Dodecyl-) with n-Hexadecane
rhoI	782.20	kg/m3	343.15	Densities, Speeds of Sound, and Viscosities of Binary Mixtures of an n-Alkylcyclohexane (n-Propyl-, n-Pentyl-, n-Hexyl-, n-Heptyl-, n-Octyl-, n-Nonyl-, n-Decyl-, and n-Dodecyl-) with n-Hexadecane
rhoI	795.80	kg/m3	323.15	Densities, Speeds of Sound, and Viscosities of Binary Mixtures of an n-Alkylcyclohexane (n-Propyl-, n-Pentyl-, n-Hexyl-, n-Heptyl-, n-Octyl-, n-Nonyl-, n-Decyl-, and n-Dodecyl-) with n-Hexadecane

rhoI	802.74	kg/m3	313.15	Densities, Speeds of Sound, and Viscosities of Binary Mixtures of an n-Alkylcyclohexane (n-Propyl-, n-Pentyl-, n-Hexyl-, n-Heptyl-, n-Octyl-, n-Nonyl-, n-Decyl-, and n-Dodecyl-) with n-Hexadecane
rhoI	809.57	kg/m3	303.15	Densities, Speeds of Sound, and Viscosities of Binary Mixtures of an n-Alkylcyclohexane (n-Propyl-, n-Pentyl-, n-Hexyl-, n-Heptyl-, n-Octyl-, n-Nonyl-, n-Decyl-, and n-Dodecyl-) with n-Hexadecane
rhoI	816.41	kg/m3	293.15	Densities, Speeds of Sound, and Viscosities of Binary Mixtures of an n-Alkylcyclohexane (n-Propyl-, n-Pentyl-, n-Hexyl-, n-Heptyl-, n-Octyl-, n-Nonyl-, n-Decyl-, and n-Dodecyl-) with n-Hexadecane
rhoI	789.05	kg/m3	333.15	Densities, Speeds of Sound, and Viscosities of Binary Mixtures of an n-Alkylcyclohexane (n-Propyl-, n-Pentyl-, n-Hexyl-, n-Heptyl-, n-Octyl-, n-Nonyl-, n-Decyl-, and n-Dodecyl-) with n-Hexadecane

Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	1.50882e+01
Coeff. B	-4.66235e+03
Coeff. C	-9.96870e+01
Temperature range (K), min.	414.70
Temperature range (K), max.	576.57

Sources

McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C2883025&Units=SI
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Densities, Speeds of Sound, and Viscosities of Binary Mixtures of an Alkylcyclohexane (n-Propyl-, n-Pentyl-, n-Hexyl-, n-Heptyl-, n-Octyl-, n-Nonyl-, n-Decyl-, and n-Dodecyl-) with n-Hexadecane:	https://www.doi.org/10.1021/acs.jced.8b00692
Joback Method:	https://en.wikipedia.org/wiki/Joback_method

Legend

chl:	Standard liquid enthalpy of combustion
cpg:	Ideal gas heat capacity
dvisc:	Dynamic viscosity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hvap:	Enthalpy of vaporization at standard conditions
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure

pvap:	Vapor pressure
rho:	Liquid Density
rinpol:	Non-polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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