1-Decanamine

Other names:	1-AMINODECANE
	1-Decylamine
	Amine 10
	DECANAMINE
	Decylamine
	Kemamine P 190D
	n-C10H21NH2
	n-Decylamine
	normal-Decylamine
Inchi:	InChI=1S/C10H23N/c1-2-3-4-5-6-7-8-9-10-11/h2-11H2,1H3
InchiKey:	MHZGKXUYDGKKIU-UHFFFAOYSA-N
Formula:	C10H23N
SMILES:	CCCCCCCCCCN
Mol. weight [g/mol]:	157.30
CAS:	2016-57-1

Physical Properties

Property code	Value	Unit	Source
affp	930.40	kJ/mol	NIST Webbook
basg	879.50 ± 9.20	kJ/mol	NIST Webbook
basg	896.50	kJ/mol	NIST Webbook
gf	99.77	kJ/mol	Joback Method
hf	-215.94	kJ/mol	Joback Method
hfus	26.85	kJ/mol	Joback Method
hvap	48.50	kJ/mol	Joback Method
ie	8.50	eV	NIST Webbook
ie	8.63 ± 0.05	eV	NIST Webbook
log10ws	-3.44		Crippen Method
logp	3.086		Crippen Method
mcvol	161.740	ml/mol	McGowan Method
pc	2222.89	kPa	Joback Method
rinpol	1254.00		NIST Webbook
rinpol	1256.00		NIST Webbook
rinpol	1256.00		NIST Webbook
rinpol	1259.00		NIST Webbook
rinpol	1265.00		NIST Webbook
rinpol	1254.00		NIST Webbook

rinpol	1252.00		NIST Webbook
rinpol	1240.00		NIST Webbook
rinpol	1232.00		NIST Webbook
rinpol	1239.00		NIST Webbook
rinpol	1240.00		NIST Webbook
rinpol	1236.00		NIST Webbook
rinpol	1241.00		NIST Webbook
rinpol	1249.00		NIST Webbook
rinpol	1255.00		NIST Webbook
rinpol	1265.00		NIST Webbook
rinpol	1239.00		NIST Webbook
rinpol	1241.00		NIST Webbook
rinpol	1252.00		NIST Webbook
rinpol	1256.00		NIST Webbook
rinpol	1249.00		NIST Webbook
rinpol	1255.00		NIST Webbook
rinpol	1237.00		NIST Webbook
rinpol	1241.00		NIST Webbook
ripol	1517.00		NIST Webbook
ripol	1522.00		NIST Webbook
ripol	1522.00		NIST Webbook
tb	493.65 ± 1.00	K	NIST Webbook
tb	493.70	K	NIST Webbook
tb	493.00	K	NIST Webbook
tb	490.20	K	NIST Webbook
tc	675.08	K	Joback Method
tf	289.26 ± 0.50	K	NIST Webbook
tf	288.15 ± 0.30	K	NIST Webbook
vc	0.625	m3/kmol	Joback Method
volm	1.99e-04	m3/mol	Thermodynamic study of (heptane + amine) mixtures. II. Excess and partial molar volumes at 298.15 K

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	382.49	J/mol×K	500.73	Joback Method
cpg	397.88	J/mol×K	529.79	Joback Method
cpg	412.64	J/mol×K	558.85	Joback Method
cpg	426.78	J/mol×K	587.91	Joback Method

cpg	440.32	J/mol×K	616.97	Joback Method
cpg	453.28	J/mol×K	646.02	Joback Method
cpg	465.68	J/mol×K	675.08	Joback Method
pvap	0.06	kPa	317.20	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration
pvap	0.01	kPa	300.20	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration
pvap	0.02	kPa	301.30	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration
pvap	0.02	kPa	304.00	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration

pvap	0.02	kPa	306.20	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.03	kPa	307.30	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.03	kPa	308.60	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.03	kPa	310.20	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	

pvap	0.04	kPa	312.20	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.04	kPa	313.20	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.05	kPa	315.10	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.05	kPa	316.20	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	

pvap	0.01	kPa	299.10	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.07	kPa	320.00	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.07	kPa	320.90	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.08	kPa	323.20	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	

pvap	0.09	kPa	324.30	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.09	kPa	324.30	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.11	kPa	327.20	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.14	kPa	330.10	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	

pvap	0.14	kPa	330.10	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.17	kPa	332.80	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.16	kPa	332.80	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.16	kPa	333.10	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	

pvap	0.16	kPa	333.10	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.20	kPa	335.90	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.21	kPa	335.90	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	
pvap	0.25	kPa	338.90	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration	

pvap	0.26	kPa	338.90	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration
pvap	0.31	kPa	341.90	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration
pvap	0.30	kPa	341.90	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration
pvap	0.34	kPa	343.00	The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.60314e+01
Coeff. B	-4.70009e+03
Coeff. C	-7.83850e+01
Temperature range (K), min.	376.92
Temperature range (K), max.	516.83

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	1.20117e+02
Coeff. B	-1.15105e+04
Coeff. C	-1.51840e+01
Coeff. D	8.10737e-06
Temperature range (K), min.	288.85
Temperature range (K), max.	663.00

Sources

Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C2016571&Units=SI
KDB Vapor Pressure Data:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1278
Thermodynamic study of (heptane + amine) mixtures. II. Excess and partial molar volumes at 298.15 K:	https://www.doi.org/10.1016/j.jct.2010.12.025
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
KDB:	https://www.cheric.org/files/research/kdb/mol/mol1278.mol
The Vaporization Enthalpy and Vapor Pressure of (d)-Amphetamine and of Several Primary Amines Used as Standards at T/K = 298 As Evaluated by Correlation Gas Chromatography and Transpiration:	https://www.doi.org/10.1021/je400212t
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
The Yaws Handbook of Vapor Pressure:	https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure

Legend

affp:	Proton affinity
basg:	Gas basicity
cpg:	Ideal gas heat capacity

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
ie:	Ionization energy
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
pvap:	Vapor pressure
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume
volm:	Molar Volume