1,2-Ethanediamine, N-(2-aminoethyl)-

Other names:	(Aminoethyl)ethanediamine
	1,2-Ethanediamine, N1-(2-aminoethyl)-
	1,4,7-Triazaheptane
	1,5-Diamino-3-azapentane
	2,2'-Diaminodiethylamine
	2,2'-Iminobis(ethanamine)
	2,2'-Iminobisethylamine
	2,2'-Iminodiethylamine
	2-(2-Aminoethylamino)ethylamine
	3-Azapentane-1,5-diamine
	Aminoethylethandiamine
	Ancamine DETA
	Barsamide 115
	Bis(2-aminoethyl)amine
	Bis[«beta»-aminoethyl]amine
	Bis[Â«betaÂ»-aminoethyl]amine
	ChS-P 1
	D.E.H. 20
	DEH 20
	DETA
	Diethylamine, 2,2'-diamino-
	Diethylene triamine
	Diethylenetriamine
	Epicure T
	Epon 3223
	Ethylamine, 2,2'-iminobis-
	Ethylenediamine, N-(2-aminoethyl)-
	H 9506
	N,N-Bis(2-aminoethyl)amine
	N-(2-Aminoethyl)-1,2-ethanediamine
	N-(2-Aminoethyl)ethylenediamine
	NSC 446
	Texacure EA-20
	UN 2079
	di(2-aminoethyl)amine
	«beta»,«beta»'-Diaminodiethylamine
	Â«betaÂ»,Â«betaÂ»'-Diaminodiethylamine
Inchi:	InChI=1S/C4H13N3/c5-1-3-7-4-2-6/h7H,1-6H2
InchiKey:	RPNUMPOLZDHAAY-UHFFFAOYSA-N
Formula:	C4H13N3

SMILES: NCCNCCN
Mol. weight [g/mol]: 103.17
CAS: 111-40-0

Physical Properties

Property code	Value	Unit	Source
chl	-3366.70 ± 0.50	kJ/mol	NIST Webbook
dvisc	0.0056272	Pa×s	Thermodynamic properties of binary liquid mixtures of diethylenetriamine with alcohols at different temperatures
gf	205.09	kJ/mol	Joback Method
hf	-4.84	kJ/mol	Joback Method
hfl	-287.00	kJ/mol	NIST Webbook
hfl	-65.20 ± 0.50	kJ/mol	NIST Webbook
hfus	21.61	kJ/mol	Joback Method
hvap	63.40 ± 0.70	kJ/mol	NIST Webbook
log10ws	0.45		Crippen Method
logp	-1.507		Crippen Method
mcvol	97.160	ml/mol	McGowan Method
pc	3050.00 ± 250.00	kPa	NIST Webbook
rhoc	286.80 ± 15.47	kg/m3	NIST Webbook
rinpol	1028.00		NIST Webbook
rinpol	1025.00		NIST Webbook
rinpol	1030.00		NIST Webbook
rinpol	1030.00		NIST Webbook
ripol	1729.00		NIST Webbook
ripol	1727.00		NIST Webbook
ripol	1731.00		NIST Webbook
ripol	1734.00		NIST Webbook
ripol	1748.00		NIST Webbook
ripol	1763.00		NIST Webbook
ripol	1729.00		NIST Webbook
ripol	1734.00		NIST Webbook
tb	477.20	K	NIST Webbook
tb	480.15 ± 2.00	K	NIST Webbook
tb	480.05	K	NIST Webbook
tc	677.00 ± 6.00	K	NIST Webbook
tf	234.15	K	NIST Webbook
vc	0.352	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	224.95	J/mol×K	486.15	Joback Method
cpg	235.11	J/mol×K	519.45	Joback Method
cpg	244.78	J/mol×K	552.76	Joback Method
cpg	253.97	J/mol×K	586.06	Joback Method
cpg	262.70	J/mol×K	619.37	Joback Method
cpg	270.98	J/mol×K	652.67	Joback Method
cpg	278.83	J/mol×K	685.98	Joback Method
cpl	270.80	J/mol×K	318.15	Molar heat capacities of diethylenetriamine and 3-(methylamino)propylamine, their aqueous binaries, and aqueous ternaries with piperazine
cpl	269.90	J/mol×K	308.15	Molar heat capacities of diethylenetriamine and 3-(methylamino)propylamine, their aqueous binaries, and aqueous ternaries with piperazine
cpl	270.20	J/mol×K	313.15	Molar heat capacities of diethylenetriamine and 3-(methylamino)propylamine, their aqueous binaries, and aqueous ternaries with piperazine
cpl	269.50	J/mol×K	303.15	Molar heat capacities of diethylenetriamine and 3-(methylamino)propylamine, their aqueous binaries, and aqueous ternaries with piperazine

cpl	271.20	J/mol×K	323.15	Molar heat capacities of diethylenetriamine and 3-(methylamino)propylamine, their aqueous binaries, and aqueous ternaries with piperazine
cpl	272.00	J/mol×K	328.15	Molar heat capacities of diethylenetriamine and 3-(methylamino)propylamine, their aqueous binaries, and aqueous ternaries with piperazine
cpl	272.70	J/mol×K	333.15	Molar heat capacities of diethylenetriamine and 3-(methylamino)propylamine, their aqueous binaries, and aqueous ternaries with piperazine
cpl	273.20	J/mol×K	338.15	Molar heat capacities of diethylenetriamine and 3-(methylamino)propylamine, their aqueous binaries, and aqueous ternaries with piperazine
cpl	273.60	J/mol×K	343.15	Molar heat capacities of diethylenetriamine and 3-(methylamino)propylamine, their aqueous binaries, and aqueous ternaries with piperazine
cpl	273.80	J/mol×K	348.15	Molar heat capacities of diethylenetriamine and 3-(methylamino)propylamine, their aqueous binaries, and aqueous ternaries with piperazine

cpl	274.00	J/mol×K	353.15	Molar heat capacities of diethylenetriamine and 3-(methylamino)propylamine, their aqueous binaries, and aqueous ternaries with piperazine
cpl	254.00	J/mol×K	313.00	NIST Webbook
hvapt	54.80	kJ/mol	406.00	NIST Webbook
rhol	942.10	kg/m3	303.15	Mutual diffusion coefficients, density, and viscosity of aqueoussolutions of new polyamine CO2absorbents
rhol	937.90	kg/m3	308.15	Mutual diffusion coefficients, density, and viscosity of aqueoussolutions of new polyamine CO2absorbents
rhol	933.80	kg/m3	313.15	Mutual diffusion coefficients, density, and viscosity of aqueoussolutions of new polyamine CO2absorbents
rhol	929.60	kg/m3	318.15	Mutual diffusion coefficients, density, and viscosity of aqueoussolutions of new polyamine CO2absorbents
rhol	925.50	kg/m3	323.15	Mutual diffusion coefficients, density, and viscosity of aqueoussolutions of new polyamine CO2absorbents
rhol	945.80	kg/m3	298.15	Thermodynamic properties and CO2 solubility of monoethanolamine + diethylenetriamine/aminoethylethanolamine mixtures: Experimental measurements and thermodynamic modeling

rhol	942.10	kg/m3	303.15	Thermodynamic properties and CO2 solubility of monoethanolamine + diethylenetriamine/aminoethylethanolamine mixtures: Experimental measurements and thermodynamic modeling
rhol	937.80	kg/m3	308.15	Thermodynamic properties and CO2 solubility of monoethanolamine + diethylenetriamine/aminoethylethanolamine mixtures: Experimental measurements and thermodynamic modeling
rhol	951.00	kg/m3	293.15	Density, viscosity, and excess properties of aqueous solution of diethylenetriamine (DETA)
rhol	942.30	kg/m3	303.15	Density, viscosity, and excess properties of aqueous solution of diethylenetriamine (DETA)
rhol	933.80	kg/m3	313.15	Density, viscosity, and excess properties of aqueous solution of diethylenetriamine (DETA)
rhol	925.50	kg/m3	323.15	Density, viscosity, and excess properties of aqueous solution of diethylenetriamine (DETA)
rhol	917.00	kg/m3	333.15	Density, viscosity, and excess properties of aqueous solution of diethylenetriamine (DETA)

rhol	908.90	kg/m3	343.15	Density, viscosity, and excess properties of aqueous solution of diethylenetriamine (DETA)
rhol	900.40	kg/m3	353.15	Density, viscosity, and excess properties of aqueous solution of diethylenetriamine (DETA)
rhol	891.90	kg/m3	363.15	Density, viscosity, and excess properties of aqueous solution of diethylenetriamine (DETA)
rhol	951.16	kg/m3	293.15	Volumetric and Viscometric Properties of Alcohol Amines + Ethanol Binary Mixtures
rhol	942.19	kg/m3	303.15	Volumetric and Viscometric Properties of Alcohol Amines + Ethanol Binary Mixtures
rhol	933.93	kg/m3	313.15	Volumetric and Viscometric Properties of Alcohol Amines + Ethanol Binary Mixtures
rhol	925.42	kg/m3	323.15	Volumetric and Viscometric Properties of Alcohol Amines + Ethanol Binary Mixtures

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	8.10727e+01
Coeff. B	-9.24563e+03
Coeff. C	-9.48992e+00

Coeff. D	5.98254e-06
Temperature range (K), min.	234.15
Temperature range (K), max.	676.00

Sources

Joback Method:	https://en.wikipedia.org/wiki/Joback_method
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Mutual diffusion coefficients, density, and viscosity of aqueoussolutions of new polyamine CO2absorbents:	https://www.doi.org/10.1016/j.fluid.2013.11.028
Excess molar enthalpies for binary mixtures of different amines with water:	https://www.doi.org/10.1016/j.jct.2015.04.030
KDB:	https://www.cheric.org/files/research/kdb/mol/mol1321.mol
Molar heat capacities of diethylenetriamine and 3-(methylamino)propylamine, their aqueous binaries, and aqueous ternaries with piperazine:	https://www.doi.org/10.1016/j.tca.2013.10.016
Thermodynamic properties of binary liquid mixtures of diethylenetriamine with alcohols at different temperatures:	https://www.doi.org/10.1016/j.tca.2011.06.003
Density, viscosity, and excess properties of aqueous solution of diethylenetriamine (DETA):	https://www.doi.org/10.1016/j.jct.2008.11.012
Solubility of N2O in Aqueous Solution of Diethylenetriamine:	https://www.doi.org/10.1021/je800409d
Equilibrium solubility of carbon dioxide in aqueous solutions of (diethylenetriamine + piperazine):	https://www.doi.org/10.1016/j.jct.2013.05.005
Thermodynamic properties and CO2 solubility of monoethanolamine + diethylenetriamine/aminoethylethanolamine mixtures: Experimental measurements and thermodynamic modeling:	https://www.doi.org/10.1016/j.fluid.2017.06.018
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C111400&Units=SI
Volumetric and Viscometric Properties of Alcohol Amines + Ethanol Binary Mixtures:	https://www.doi.org/10.1021/acs.jced.7b00321
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
KDB Vapor Pressure Data:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=1321

Legend

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

pc:	Critical Pressure
pvap:	Vapor pressure
rhoc:	Critical density
rhol:	Liquid Density
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

Latest version available from:
https://www.chemeo.com/cid/25-623-2/1-2-Ethanediamine-N-2-aminoethyl.pdf
Generated by Cheméo on 2024-04-19 19:37:45.209086521 +0000 UTC m=+15844714.129663833.
Cheméo (https://www.chemeo.com) is the biggest free database of chemical and physical data for the process industry.