Undecane

Other names:	HENDECANE
	UN 2330
	n-C11H24
	n-Undecane
Inchi:	InChI=1S/C11H24/c1-3-5-7-9-11-10-8-6-4-2/h3-11H2,1-2H3
InchiKey:	RSJKGSCJYJTIGS-UHFFFAOYSA-N
Formula:	C11H24
SMILES:	CCCCCCCCCCC
Mol. weight [g/mol]:	156.31
CAS:	1120-21-4

Physical Properties

Property code	Value	Unit	Source
af	0.5350		KDB
chl	-7431.30 ± 2.60	kJ/mol	NIST Webbook
chl	-7426.40	kJ/mol	NIST Webbook
dm	0.00	debye	KDB
gf	41.62	kJ/mol	KDB
hf	-270.30 ± 1.30	kJ/mol	NIST Webbook
hf	-270.50	kJ/mol	KDB
hfl	-327.20 ± 2.60	kJ/mol	NIST Webbook
hfus	24.25	kJ/mol	Joback Method
hvap	56.60 ± 0.60	kJ/mol	NIST Webbook
hvap	56.40 ± 0.40	kJ/mol	NIST Webbook
hvap	56.30 ± 0.20	kJ/mol	NIST Webbook
hvap	56.43 ± 0.08	kJ/mol	NIST Webbook
hvap	56.30	kJ/mol	NIST Webbook
hvap	56.44 ± 0.12	kJ/mol	NIST Webbook
hvap	56.60	kJ/mol	NIST Webbook
hvap	56.43	kJ/mol	NIST Webbook
ie	9.59	eV	NIST Webbook
ie	9.45 ± 0.15	eV	NIST Webbook
ie	9.56	eV	NIST Webbook
ie	9.56 ± 0.10	eV	NIST Webbook
log10ws	-4.43		Crippen Method
logp	4.537		Crippen Method
mcvol	165.850	ml/mol	McGowan Method

pc	1966.00 ± 10.00	kPa	NIST Webbook
pc	2008.00 ± 6.00	kPa	NIST Webbook
pc	1966.00	kPa	NIST Webbook
pc	1948.00 ± 20.00	kPa	NIST Webbook
pc	1980.00	kPa	KDB
pc	1990.00 ± 50.00	kPa	NIST Webbook
pc	2000.00 ± 100.00	kPa	NIST Webbook
rhoc	276.67 ± 6.25	kg/m3	NIST Webbook
rhoc	234.46 ± 15.63	kg/m3	NIST Webbook
rinpol	183.23		NIST Webbook
rinpol	180.44		NIST Webbook
rinpol	180.44		NIST Webbook
sg	583.58	J/mol×K	NIST Webbook
sl	464.00	J/mol×K	NIST Webbook
sl	458.15	J/mol×K	NIST Webbook
tb	469.20 ± 0.30	K	NIST Webbook
tb	469.20 ± 2.00	K	NIST Webbook
tb	468.00 ± 3.00	K	NIST Webbook
tb	467.60 ± 1.00	K	NIST Webbook
tb	470.00 ± 5.00	K	NIST Webbook
tb	468.99 ± 0.15	K	NIST Webbook
tb	467.65 ± 2.00	K	NIST Webbook
tb	467.70 ± 2.00	K	NIST Webbook
tb	468.00 ± 4.00	K	NIST Webbook
tb	467.00 ± 4.00	K	NIST Webbook
tb	467.00 ± 4.00	K	NIST Webbook
tb	467.00 ± 4.00	K	NIST Webbook
tb	467.00 ± 5.00	K	NIST Webbook
tb	470.00 ± 5.00	K	NIST Webbook
tb	469.00 ± 3.00	K	NIST Webbook
tb	469.00 ± 5.00	K	NIST Webbook
tb	470.00 ± 5.00	K	NIST Webbook
tb	467.70 ± 5.00	K	NIST Webbook
tb	470.00 ± 2.00	K	NIST Webbook
tb	466.00 ± 1.66	K	NIST Webbook
tb	469.09	K	KDB
tb	467.70 ± 2.00	K	NIST Webbook
tb	470.20 ± 1.50	K	NIST Webbook
tb	468.00 ± 0.15	K	NIST Webbook
tb	468.70 ± 2.00	K	NIST Webbook
tb	467.95 ± 0.30	K	NIST Webbook
tb	468.65 ± 0.30	K	NIST Webbook
tb	468.71 ± 0.20	K	NIST Webbook
tb	469.20	K	NIST Webbook

tb	467.70 ± 2.00	K	NIST Webbook
tb	468.70 ± 1.50	K	NIST Webbook
tb	468.00 ± 3.00	K	NIST Webbook
tb	469.10 ± 0.30	K	NIST Webbook
tb	469.50 ± 1.00	K	NIST Webbook
tb	469.04 ± 0.10	K	NIST Webbook
tb	467.95 ± 0.40	K	NIST Webbook
tb	468.95 ± 0.50	K	NIST Webbook
tb	468.55 ± 0.07	K	NIST Webbook
tb	470.00 ± 5.00	K	NIST Webbook
tb	468.53 ± 0.07	K	NIST Webbook
tc	639.00	K	KDB
tf	247.50	K	KDB
tt	247.20 ± 0.30	K	NIST Webbook
tt	247.58 ± 0.05	K	NIST Webbook
tt	247.58 ± 0.20	K	NIST Webbook
tt	247.59 ± 0.20	K	NIST Webbook
tt	247.59 ± 0.03	K	NIST Webbook
vc	0.689	m3/kmol	NIST Webbook
vc	0.689	m3/kmol	KDB
zc	0.2567720		KDB
zra	0.25		KDB

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	360.07	J/mol×K	451.08	Joback Method
cpg	376.04	J/mol×K	478.04	Joback Method
cpg	391.43	J/mol×K	505.00	Joback Method
cpg	406.25	J/mol×K	531.96	Joback Method
cpg	420.51	J/mol×K	558.93	Joback Method
cpg	434.23	J/mol×K	585.89	Joback Method
cpg	447.41	J/mol×K	612.85	Joback Method
cpl	341.10	J/mol×K	292.29	NIST Webbook
cpl	346.30	J/mol×K	303.15	Excess isobaric molar heat capacities and excess molar volumes for ethanol + n-decane and n-undecane systems
cpl	342.70	J/mol×K	298.00	NIST Webbook

cpl	337.29	J/mol×K	283.15	Excess isobaric molar heat capacities and excess molar volumes for ethanol + n-decane and n-undecane systems
cpl	339.47	J/mol×K	288.15	Excess isobaric molar heat capacities and excess molar volumes for ethanol + n-decane and n-undecane systems
cpl	345.05	J/mol×K	298.15	NIST Webbook
cpl	341.60	J/mol×K	293.15	Excess isobaric molar heat capacities and excess molar volumes for ethanol + n-decane and n-undecane systems
cpl	343.98	J/mol×K	298.15	Excess isobaric molar heat capacities and excess molar volumes for ethanol + n-decane and n-undecane systems
dvisc	0.0010990	Pa×s	298.15	Densities and Viscosities of Binary Mixtures of exo-Tetrahydrodicyclopentadiene with N-Undecane or N-Tetradecane at T = (293.15 to 313.15) K
dvisc	0.0011990	Pa×s	293.15	Densities and Viscosities of Binary Mixtures of exo-Tetrahydrodicyclopentadiene with N-Undecane or N-Tetradecane at T = (293.15 to 313.15) K

dvisc	0.0010220	Pa×s	303.15	Densities and Viscosities of Binary Mixtures of exo-Tetrahydrodicyclopentadiene with N-Undecane or N-Tetradecane at T = (293.15 to 313.15) K
dvisc	0.0008780	Pa×s	313.15	Densities and Viscosities of Binary Mixtures of exo-Tetrahydrodicyclopentadiene with N-Undecane or N-Tetradecane at T = (293.15 to 313.15) K
hfust	22.18	kJ/mol	247.60	NIST Webbook
hfust	22.50	kJ/mol	247.60	NIST Webbook
hfust	6.86	kJ/mol	236.60	NIST Webbook
hfust	22.18	kJ/mol	247.60	NIST Webbook
hsubt	91.50	kJ/mol	236.00	NIST Webbook
hvapt	53.10	kJ/mol	344.00	NIST Webbook
hvapt	49.10	kJ/mol	424.00	NIST Webbook
hvapt	60.00	kJ/mol	374.00	NIST Webbook
hvapt	56.20	kJ/mol	299.00	NIST Webbook
hvapt	55.40	kJ/mol	314.00	NIST Webbook
hvapt	54.50	kJ/mol	324.00	NIST Webbook
hvapt	54.00	kJ/mol	334.00	NIST Webbook
hvapt	41.51	kJ/mol	468.70	KDB
pvap	54.82	kPa	445.40	Low-Pressure VLE Measurements and Thermodynamic Modeling, with PSRK and NRTL, of Binary 1-Alcohol + n-Alkane Systems
pvap	40.00	kPa	434.50	Low-Pressure VLE Measurements and Thermodynamic Modeling, with PSRK and NRTL, of Binary 1-Alcohol + n-Alkane Systems

pvap	70.48	kPa	454.55	Low-Pressure VLE Measurements and Thermodynamic Modeling, with PSRK and NRTL, of Binary 1-Alcohol + n-Alkane Systems
pvap	60.13	kPa	448.68	Low-Pressure VLE Measurements and Thermodynamic Modeling, with PSRK and NRTL, of Binary 1-Alcohol + n-Alkane Systems
pvap	78.59	kPa	458.59	Low-Pressure VLE Measurements and Thermodynamic Modeling, with PSRK and NRTL, of Binary 1-Alcohol + n-Alkane Systems
pvap	40.04	kPa	434.60	Low-Pressure VLE Measurements and Thermodynamic Modeling, with PSRK and NRTL, of Binary 1-Alcohol + n-Alkane Systems
pvap	45.18	kPa	438.71	Low-Pressure VLE Measurements and Thermodynamic Modeling, with PSRK and NRTL, of Binary 1-Alcohol + n-Alkane Systems

pvap	50.04	kPa	442.20	Low-Pressure VLE Measurements and Thermodynamic Modeling, with PSRK and NRTL, of Binary 1-Alcohol + n-Alkane Systems
pvap	65.09	kPa	451.59	Low-Pressure VLE Measurements and Thermodynamic Modeling, with PSRK and NRTL, of Binary 1-Alcohol + n-Alkane Systems
rfi	1.40630		318.15	Thermodynamic properties of (an ester + an alkane). XVI. Experimental HEm and V Em values and a new correlation method for (an alkyl ethanoate + an n-alkane) at 318.15 K
rfi	1.41640		293.15	Activity Coefficients at Infinite Dilution and Excess Molar Volumes in Binary Mixtures Containing Normal Alkanes (Nonane, Decane, Undecane, or Dodecane) and Cresols (2-Methylphenol or 3-Methylphenol)
rhol	736.64	kg/m3	298.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa

rhol	735.73	kg/m3	298.15	An Isothermal vapour-liquid equilibrium data for the binary systems of CHF3 with (n-nonane, n-decane, or n-undecane) and C2F6 with (n-nonane or n-decane)	
rhol	734.56	kg/m3	299.75	An Isothermal vapour-liquid equilibrium data for the binary systems of CHF3 with (n-nonane, n-decane, or n-undecane) and C2F6 with (n-nonane or n-decane)	
rhol	736.72	kg/m3	298.15	Liquid-liquid equilibria for (2-hydroxy benzaldehyde + n-alkane) mixtures. Intermolecular and proximity effects in systems containing hydroxyl and aldehyde groups	
rhol	747.78	kg/m3	283.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa	
rhol	744.06	kg/m3	288.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa	

rhol	740.35	kg/m3	293.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa
rhol	736.48	kg/m3	297.15	An Isothermal vapour-liquid equilibrium data for the binary systems of CHF3 with (n-nonane, n-decane, or n-undecane) and C2F6 with (n-nonane or n-decane)
rhol	732.93	kg/m3	303.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa
rhol	729.23	kg/m3	308.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa
rhol	725.53	kg/m3	313.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa

rhol	721.82	kg/m3	318.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa
rhol	718.11	kg/m3	323.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa
rhol	714.39	kg/m3	328.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa
rhol	710.68	kg/m3	333.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa
rhol	706.95	kg/m3	338.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa

rhol	703.22	kg/m3	343.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa
rhol	699.47	kg/m3	348.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa
rhol	695.72	kg/m3	353.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa
rhol	691.96	kg/m3	358.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa
rhol	688.18	kg/m3	363.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa

rhol	721.82	kg/m3	318.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Propanol, + 1-Butanol, + 1-Pentanol, and + 1-Hexanol from 283.15 to 363.15 K at 0.1 MPa
rhol	747.78	kg/m3	283.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa
rhol	744.06	kg/m3	288.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa
rhol	740.35	kg/m3	293.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa
rhol	736.64	kg/m3	298.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa

rhol	732.93	kg/m3	303.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa
rhol	729.23	kg/m3	308.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa
rhol	725.53	kg/m3	313.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa
rhol	721.82	kg/m3	318.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa
rhol	718.11	kg/m3	323.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa

rhol	714.39	kg/m3	328.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa
rhol	710.68	kg/m3	333.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa
rhol	706.95	kg/m3	338.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa
rhol	703.22	kg/m3	343.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa
rhol	699.47	kg/m3	348.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa

rhol	695.72	kg/m3	353.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa	
rhol	691.96	kg/m3	358.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa	
rhol	688.18	kg/m3	363.15	Densities and Viscosities for Binary Liquid Mixtures of n-Undecane + 1-Heptanol, 1-Octanol, 1-Nonanol, and 1-Decanol from 283.15 to 363.15 K at 0.1 MPa	
rhol	740.11	kg/m3	293.15	Activity Coefficients at Infinite Dilution of Cylcohexylamine + Octane, Toluene, Ethylbenzene, or Aniline and Excess Molar Volumes in Binary Mixtures of Cyclohexylamine + Heptane, Octane, Nonane, Decane, Undecane, Aniline, or Water	
rhol	736.79	kg/m3	298.20	Apparent and Partial Molar Volumes at Infinite Dilution and Solid Liquid Equilibria of Dibenzothiophene + Alkane Systems	

rhol	725.69	kg/m3	313.20	Apparent and Partial Molar Volumes at Infinite Dilution and Solid Liquid Equilibria of Dibenzothiophene + Alkane Systems
rhol	740.28	kg/m3	293.15	Excess Molar Volume along with Viscosity, Flash Point, and Refractive Index for Binary Mixtures of cis-Decalin or trans-Decalin with C9 to C11 n-Alkanes
rhol	736.63	kg/m3	298.15	Excess Molar Volume along with Viscosity, Flash Point, and Refractive Index for Binary Mixtures of cis-Decalin or trans-Decalin with C9 to C11 n-Alkanes
rhol	732.93	kg/m3	303.15	Excess Molar Volume along with Viscosity, Flash Point, and Refractive Index for Binary Mixtures of cis-Decalin or trans-Decalin with C9 to C11 n-Alkanes
rhol	737.96	kg/m3	295.15	An Isothermal vapour-liquid equilibrium data for the binary systems of CHF3 with (n-nonane, n-decane, or n-undecane) and C2F6 with (n-nonane or n-decane)
rhol	725.51	kg/m3	313.15	Excess Molar Volume along with Viscosity, Flash Point, and Refractive Index for Binary Mixtures of cis-Decalin or trans-Decalin with C9 to C11 n-Alkanes

rhol	721.78	kg/m3	318.15	Excess Molar Volume along with Viscosity, Flash Point, and Refractive Index for Binary Mixtures of cis-Decalin or trans-Decalin with C9 to C11 n-Alkanes
rhol	718.04	kg/m3	323.15	Excess Molar Volume along with Viscosity, Flash Point, and Refractive Index for Binary Mixtures of cis-Decalin or trans-Decalin with C9 to C11 n-Alkanes
rhol	736.71	kg/m3	298.15	Thermodynamics of Mixtures Containing Amines. XV. Liquid Liquid Equilibria for Benzylamine + CH3(CH2)nCH3 (n = 8, 9, 10, 12, 14)
rhol	739.96	kg/m3	293.15	An Isothermal vapour-liquid equilibrium data for the binary systems of CHF3 with (n-nonane, n-decane, or n-undecane) and C2F6 with (n-nonane or n-decane)
rhol	736.85	kg/m3	298.15	Isobaric vapor-liquid equilibrium for n-undecane + p-, o-, m-xylene at 10 kPa

rhol	736.73	kg/m3	298.15	Liquid-liquid equilibria for aqueous sulfuric acid solutions with undecane, dodecane, or 1-dodecanol, trioctylamine or tributyl phosphate and excess and deviation properties for sub-binary systems at 298.15 K
rhol	740.29	kg/m3	298.15	Liquid liquid equilibrium of ternary systems 1-butyl-3-methylimidazolium hexafluorophosphate + aromatic + aliphatic
rhol	740.00	kg/m3	293.00	KDB
rhol	729.22	kg/m3	308.15	Excess Molar Volume along with Viscosity, Flash Point, and Refractive Index for Binary Mixtures of cis-Decalin or trans-Decalin with C9 to C11 n-Alkanes
sfust	29.00	J/mol×K	236.60	NIST Webbook
srf	0.02	N/m	293.20	KDB

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.45189e+01
Coeff. B	-3.92882e+03
Coeff. C	-7.22530e+01
Temperature range (K), min.	348.32
Temperature range (K), max.	498.95

Information	Value
Property code	pvap

Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	1.34087e+02
Coeff. B	-1.15852e+04
Coeff. C	-1.73722e+01
Coeff. D	9.45325e-06
Temperature range (K), min.	247.57
Temperature range (K), max.	638.76

Datasets

Mass density, kg/m3

Pressure, kPa - Liquid	Temperature, K - Liquid	Mass density, kg/m3 - Liquid
1000.00	278.00	752.64
20000.00	278.00	764.19
40000.00	278.00	775.36
60000.00	278.00	785.14
1000.00	288.00	745.18
20000.00	288.00	757.29
40000.00	288.00	768.82
60000.00	288.00	778.9
1000.00	298.00	737.58
20000.00	298.00	750.5
40000.00	298.00	762.53
60000.00	298.00	773.01
1000.00	308.00	729.86
20000.00	308.00	743.8
40000.00	308.00	756.47
60000.00	308.00	767.47
1000.00	318.00	722.02
20000.00	318.00	737.19
40000.00	318.00	750.63
60000.00	318.00	762.26

Reference *https://www.doi.org/10.1016/j.jct.2012.10.025*

Temperature, K	Pressure, kPa	Mass density, kg/m3
313.24	8029.00	733.14

313.18	9997.00	734.69
313.19	12016.00	736.18
313.22	14009.00	737.62
313.23	16006.00	739.05
313.19	18013.00	740.5
313.17	19009.00	741.21
323.24	7997.00	726.03
323.22	10009.00	727.67
323.23	12003.00	729.24
323.23	14022.00	730.8
323.19	16026.00	732.35
323.19	17995.00	733.8
323.18	19002.00	734.54
333.14	8001.00	718.68
333.16	10001.00	720.38
333.13	12007.00	722.07
333.15	14012.00	723.7
333.12	16003.00	725.32
333.12	17990.00	726.87
333.14	19027.00	727.66
343.29	7989.00	711.51
343.29	9998.00	713.33
343.26	11021.00	714.27
343.28	11999.00	715.12
343.25	13005.00	716.0
343.26	14019.00	716.86
343.30	14998.00	717.66
343.27	15997.00	718.51
343.25	16996.00	719.36
343.27	18006.00	720.27
343.28	19019.00	720.98
353.33	7993.00	704.36
353.35	9996.00	706.27
353.31	11002.00	707.25
353.16	12003.00	708.19
353.32	13007.00	709.08
353.33	14003.00	709.98
353.32	14999.00	710.86
353.34	16001.00	711.73
353.31	17012.00	712.63
353.33	18010.00	713.48
353.32	19024.00	714.35

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Temperature, K	Pressure, kPa	Mass density, kg/m3
313.15	1000.00	726.6
313.15	2001.00	727.3
313.15	3001.00	728.0
313.15	4000.00	728.7
313.15	5000.00	729.5
313.15	6001.00	730.2
313.15	7000.00	731.0
313.15	8000.00	731.8
313.15	9000.00	732.6
313.15	10000.00	733.4
313.15	11000.00	734.1
313.15	12000.00	734.9
313.15	13000.00	735.7
313.15	14001.00	736.4
313.15	15000.00	737.2
313.15	16000.00	737.9
313.15	17000.00	738.7
313.15	18000.00	739.4
313.15	19000.00	740.0
313.15	20000.00	740.7
313.15	21001.00	741.3
313.15	22000.00	742.0
313.15	23000.00	742.6
313.15	24000.00	743.2
313.15	25000.00	743.7
323.10	1000.00	719.0
323.10	2000.00	719.8
323.10	3000.00	720.6
323.10	4000.00	721.4
323.10	5001.00	722.2
323.10	6000.00	723.0
323.10	7000.00	723.8
323.10	8000.00	724.6
323.10	9000.00	725.5
323.10	10001.00	726.3
323.10	11000.00	727.1
323.10	12000.00	727.9
323.10	13000.00	728.7
323.10	14000.00	729.5
323.10	15001.00	730.3
323.10	16000.00	731.1

323.10	17000.00	731.9
323.10	18000.00	732.6
323.10	19000.00	733.3
323.10	20000.00	734.0
323.10	21000.00	734.7
323.10	22000.00	735.4
323.10	23000.00	736.0
323.10	24000.00	736.7
323.10	25000.00	737.3
333.02	1000.00	711.3
333.02	2001.00	712.1
333.02	3000.00	713.0
333.02	4000.00	713.8
333.02	5000.00	714.7
333.02	6000.00	715.5
333.02	7000.00	716.4
333.02	8001.00	717.3
333.02	9000.00	718.1
333.02	10000.00	719.0
333.02	11000.00	719.9
333.02	12000.00	720.7
333.02	13000.00	721.5
333.02	14000.00	722.4
333.02	15000.00	723.2
333.02	16000.00	724.0
333.02	17000.00	724.8
333.02	18000.00	725.6
333.02	19000.00	726.3
333.02	20000.00	727.1
333.02	21000.00	727.8
333.02	22000.00	728.5
333.02	23000.00	729.2
333.02	24000.00	729.9
333.02	25000.00	730.5
342.09	1000.00	703.9
342.09	2000.00	704.8
342.09	3001.00	705.8
342.09	4000.00	706.7
342.09	5000.00	707.6
342.09	6000.00	708.5
342.09	7000.00	709.4
342.09	8000.00	710.4
342.09	9000.00	711.2
342.09	10000.00	712.2

342.09	11000.00	713.1
342.09	12000.00	714.0
342.09	13000.00	714.8
342.09	14000.00	715.7
342.09	15000.00	716.6
342.09	16000.00	717.4
342.09	17000.00	718.2
342.09	18000.00	719.1
342.09	19000.00	719.9
342.09	20000.00	720.6
342.09	21000.00	721.4
342.09	22000.00	722.2
342.09	23000.00	722.9
342.09	23999.00	723.6
342.09	25000.00	724.3
352.93	1000.00	696.5
352.93	2000.00	697.4
352.93	3001.00	698.4
352.93	4000.00	699.4
352.93	5000.00	700.4
352.93	6000.00	701.4
352.93	7001.00	702.3
352.93	8000.00	703.3
352.93	9000.00	704.3
352.93	10001.00	705.2
352.93	11000.00	706.2
352.93	12000.00	707.1
352.93	13000.00	708.0
352.93	14000.00	709.0
352.93	15000.00	709.8
352.93	16000.00	710.7
352.93	17000.00	711.6
352.93	18000.00	712.5
352.93	19000.00	713.3
352.93	20000.00	714.1
352.93	21000.00	715.0
352.93	22000.00	715.7
352.93	23000.00	716.5
352.93	24000.00	717.3
352.93	25000.00	718.0
362.91	1000.00	688.8
362.91	2001.00	689.9
362.91	3000.00	691.0
362.91	4000.00	692.0

362.91	5001.00	693.1
362.91	6001.00	694.1
362.91	7001.00	695.2
362.91	8000.00	696.2
362.91	9000.00	697.2
362.91	10000.00	698.2
362.91	11000.00	699.2
362.91	12001.00	700.2
362.91	13000.00	701.1
362.91	14001.00	702.1
362.91	15001.00	703.0
362.91	16001.00	704.0
362.91	17001.00	704.9
362.91	18000.00	705.8
362.91	19001.00	706.6
362.91	20000.00	707.5
362.91	21000.00	708.4
362.91	22000.00	709.2
362.91	23000.00	710.0
362.91	24000.00	710.9
362.91	25000.00	711.6

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Pressure, kPa	Temperature, K	Mass density, kg/m3
100.00	283.15	747.8
100.00	288.15	744.1
100.00	293.15	740.5
100.00	298.15	736.5
100.00	303.15	732.9
100.00	308.15	729.2
100.00	313.15	725.5
100.00	318.15	721.9
100.00	323.15	718.1
10000.00	283.15	754.2
10000.00	288.15	750.7
10000.00	293.15	747.2
10000.00	298.15	743.6
10000.00	303.15	740.1
10000.00	308.15	736.7
10000.00	313.15	733.1
10000.00	318.15	729.6
10000.00	323.15	726.0

20000.00	283.15	760.4
20000.00	288.15	757.0
20000.00	293.15	753.6
20000.00	298.15	750.2
20000.00	303.15	746.8
20000.00	308.15	743.5
20000.00	313.15	740.2
20000.00	318.15	736.9
20000.00	323.15	733.5
30000.00	283.15	766.1
30000.00	288.15	762.9
30000.00	293.15	759.6
30000.00	298.15	756.4
30000.00	303.15	753.1
30000.00	308.15	749.9
30000.00	313.15	746.8
30000.00	318.15	743.5
30000.00	323.15	740.3
40000.00	283.15	771.5
40000.00	288.15	768.4
40000.00	293.15	765.3
40000.00	298.15	762.0
40000.00	303.15	758.9
40000.00	308.15	755.9
40000.00	313.15	752.9
40000.00	318.15	749.7
40000.00	323.15	746.7
50000.00	283.15	776.6
50000.00	288.15	773.5
50000.00	293.15	770.6
50000.00	298.15	767.5
50000.00	303.15	764.4
50000.00	308.15	761.4
50000.00	313.15	758.5
50000.00	318.15	755.5
50000.00	323.15	752.5
60000.00	283.15	781.4
60000.00	288.15	778.5
60000.00	293.15	775.6
60000.00	298.15	772.6
60000.00	303.15	769.7
60000.00	308.15	766.7
60000.00	313.15	763.9
60000.00	318.15	761.0

60000.00	323.15	758.0

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Legend

af:	Acentric Factor
chl:	Standard liquid enthalpy of combustion
cpg:	Ideal gas heat capacity
cpl:	Liquid phase heat capacity

dm:	Dipole Moment
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
hfust:	Enthalpy of fusion at a given temperature
hsubt:	Enthalpy of sublimation at a given temperature
hvap:	Enthalpy of vaporization at standard conditions
hvapt:	Enthalpy of vaporization at a given temperature
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
rfi:	Refractive Index
rhoc:	Critical density
rhol:	Liquid Density
rinpol:	Non-polar retention indices
sfust:	Entropy of fusion at a given temperature
sg:	Molar entropy at standard conditions
sl:	Liquid phase molar entropy at standard conditions
srf:	Surface Tension
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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