Ethane, 1,1,1-trifluoro-

Other names:	1,1,1-Trifluoroethane
	1,1,1-Trifluoroform
	CFC 143A
	CH3CF3
	FC 143a
	FREON 143
	Fluorocarbon FC143a
	Freon 143a
	METHYLFLUOROFORM
	R 143a
	R-143a
	REFRIGERANT-143A
Inchi:	InChI=1S/C2H3F3/c1-2(3,4)5/h1H3
InchiKey:	UJPMYEOUBPIPHQ-UHFFFAOYSA-N
Formula:	C2H3F3
SMILES:	CC(F)(F)F
Mol. weight [g/mol]:	84.04
CAS:	420-46-2

Physical Properties

Property code	Value	Unit	Source
af	0.2510		KDB
chg	-1008.00 ± 2.00	kJ/mol	NIST Webbook
dm	2.30	debye	KDB
gf	-679.20	kJ/mol	KDB
hf	-749.00 ± 2.00	kJ/mol	NIST Webbook
hf	-748.70 ± 3.20	kJ/mol	NIST Webbook
hf	-746.10	kJ/mol	KDB
hfus	2.76	kJ/mol	Joback Method
hvap	16.30	kJ/mol	Joback Method
ie	12.90 ± 0.10	eV	NIST Webbook
ie	13.80	eV	NIST Webbook
ie	13.30 ± 0.10	eV	NIST Webbook
log10ws	-1.32		Crippen Method
logp	1.569		Crippen Method
mcvol	44.350	ml/mol	McGowan Method
pc	3760.00	kPa	KDB

pc	3763.90 ± 5.00	kPa	NIST Webbook
pc	3757.63 ± 103.42	kPa	NIST Webbook
pc	3411.60 ± 5.00	kPa	NIST Webbook
pc	3769.00 ± 5.00	kPa	NIST Webbook
rhoc	433.65 ± 15.13	kg/m3	NIST Webbook
rhoc	428.61 ± 3.36	kg/m3	NIST Webbook
rhoc	433.65 ± 1.68	kg/m3	NIST Webbook
rhoc	433.65 ± 3.36	kg/m3	NIST Webbook
rinpol	268.00		NIST Webbook
sl	224.10	J/mol×K	NIST Webbook
tb	226.00	K	NIST Webbook
tb	225.60	K	KDB
tb	226.45 ± 0.10	K	NIST Webbook
tc	345.97 ± 0.20	K	NIST Webbook
tc	346.25 ± 0.70	K	NIST Webbook
tc	345.86 ± 0.02	K	NIST Webbook
tc	345.86 ± 0.05	K	NIST Webbook
tc	346.30	K	KDB
tf	161.80	K	KDB
tt	161.82 ± 0.02	K	NIST Webbook
vc	0.194	m3/kmol	KDB
zc	0.2533380		KDB

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	90.91	J/mol×K	378.57	Joback Method
cpg	82.77	J/mol×K	332.29	Joback Method
cpg	73.75	J/mol×K	286.02	Joback Method
cpg	68.89	J/mol×K	262.88	Joback Method
cpg	63.79	J/mol×K	239.74	Joback Method
cpg	78.37	J/mol×K	309.15	Joback Method
cpg	86.95	J/mol×K	355.43	Joback Method
cpl	189.93	J/mol×K	345.00	Measurements of the Isobaric Specific Heat Capacity for 1,1,1-Trifluoroethane (R143a), Pentafluoroethane (R125), and Difluoromethane (R32) in the Liquid Phase

cpl	173.96	J/mol×K	340.00	Measurements of the Isobaric Specific Heat Capacity for 1,1,1-Trifluoroethane (R143a), Pentafluoroethane (R125), and Difluoromethane (R32) in the Liquid Phase
cpl	192.45	J/mol×K	345.00	Measurements of the Isobaric Specific Heat Capacity for 1,1,1-Trifluoroethane (R143a), Pentafluoroethane (R125), and Difluoromethane (R32) in the Liquid Phase
cpl	109.66	J/mol×K	220.00	NIST Webbook
cpl	162.20	J/mol×K	335.00	Measurements of the Isobaric Specific Heat Capacity for 1,1,1-Trifluoroethane (R143a), Pentafluoroethane (R125), and Difluoromethane (R32) in the Liquid Phase
cpl	155.47	J/mol×K	330.00	Measurements of the Isobaric Specific Heat Capacity for 1,1,1-Trifluoroethane (R143a), Pentafluoroethane (R125), and Difluoromethane (R32) in the Liquid Phase
cpl	150.43	J/mol×K	325.00	Measurements of the Isobaric Specific Heat Capacity for 1,1,1-Trifluoroethane (R143a), Pentafluoroethane (R125), and Difluoromethane (R32) in the Liquid Phase

cpl	145.39	J/mol×K	320.00	Measurements of the Isobaric Specific Heat Capacity for 1,1,1-Trifluoroethane (R143a), Pentafluoroethane (R125), and Difluoromethane (R32) in the Liquid Phase
cpl	140.35	J/mol×K	315.00	Measurements of the Isobaric Specific Heat Capacity for 1,1,1-Trifluoroethane (R143a), Pentafluoroethane (R125), and Difluoromethane (R32) in the Liquid Phase
cpl	224.39	J/mol×K	350.00	Measurements of the Isobaric Specific Heat Capacity for 1,1,1-Trifluoroethane (R143a), Pentafluoroethane (R125), and Difluoromethane (R32) in the Liquid Phase
cpl	136.15	J/mol×K	310.00	Measurements of the Isobaric Specific Heat Capacity for 1,1,1-Trifluoroethane (R143a), Pentafluoroethane (R125), and Difluoromethane (R32) in the Liquid Phase
hfust	6.19	kJ/mol	161.90	NIST Webbook
hfust	6.19	kJ/mol	161.80	NIST Webbook
hfust	0.30	kJ/mol	156.40	NIST Webbook
hfust	6.19	kJ/mol	161.90	NIST Webbook
hvapt	16.40	kJ/mol	273.00	NIST Webbook
hvapt	15.90	kJ/mol	258.00	NIST Webbook
hvapt	16.70	kJ/mol	258.00	NIST Webbook
hvapt	19.20 ± 0.10	kJ/mol	224.00	NIST Webbook
hvapt	20.50	kJ/mol	200.00	NIST Webbook
hvapt	8.70	kJ/mol	333.00	NIST Webbook
hvapt	13.80	kJ/mol	303.00	NIST Webbook
hvapt	17.50	kJ/mol	258.00	NIST Webbook
hvapt	18.10	kJ/mol	258.00	NIST Webbook
hvapt	19.18	kJ/mol	224.40	NIST Webbook

hvapt	19.16	kJ/mol	225.70	KDB
hvapt	18.90	kJ/mol	233.00	NIST Webbook
pvap	1831.00	kPa	313.15	Vapor liquid equilibria of the 1,1,1-trifluoroethane (HFC-143a) + propane (HC-290) system
pvap	2055.20	kPa	318.15	Measurement of vapor liquid equilibria for the binary systems of propane + 1,1,1,2-tetrafluoroethane and 1,1,1-trifluoroethane + propane at various temperatures
pvap	2307.00	kPa	323.15	Vapor liquid equilibria of the 1,1,1-trifluoroethane (HFC-143a) + propane (HC-290) system
pvap	2874.00	kPa	333.15	Vapor liquid equilibria of the 1,1,1-trifluoroethane (HFC-143a) + propane (HC-290) system
pvap	1831.00	kPa	313.15	Vapor liquid equilibria of the 1,1,1-trifluoroethane (HFC-143a) + dimethyl ether (DME) system
pvap	2302.00	kPa	323.15	Vapor liquid equilibria of the 1,1,1-trifluoroethane (HFC-143a) + dimethyl ether (DME) system
pvap	2874.00	kPa	333.15	Vapor liquid equilibria of the 1,1,1-trifluoroethane (HFC-143a) + dimethyl ether (DME) system
pvap	3553.00	kPa	343.15	Vapor liquid equilibria of the 1,1,1-trifluoroethane (HFC-143a) + dimethyl ether (DME) system

pvap	838.60	kPa	283.15	Vapor-liquid equilibria for the 1,1,1,2 -tetrafluoroethane (HFC-134a) + 1,1,1,2,3,3,3-heptafluoropropane (HFC-227ea) and 1,1,1-trifluoroethane (HFC-143a) + 2,3,3,3-tetrafluoroprop-1-ene (HFO-1234yf) systems
pvap	1107.90	kPa	293.15	Vapor-liquid equilibria for the 1,1,1,2 -tetrafluoroethane (HFC-134a) + 1,1,1,2,3,3,3-heptafluoropropane (HFC-227ea) and 1,1,1-trifluoroethane (HFC-143a) + 2,3,3,3-tetrafluoroprop-1-ene (HFO-1234yf) systems
pvap	1435.20	kPa	303.15	Vapor-liquid equilibria for the 1,1,1,2 -tetrafluoroethane (HFC-134a) + 1,1,1,2,3,3,3-heptafluoropropane (HFC-227ea) and 1,1,1-trifluoroethane (HFC-143a) + 2,3,3,3-tetrafluoroprop-1-ene (HFO-1234yf) systems
pvap	1834.00	kPa	313.15	Vapor-liquid equilibria for the 1,1,1,2 -tetrafluoroethane (HFC-134a) + 1,1,1,2,3,3,3-heptafluoropropane (HFC-227ea) and 1,1,1-trifluoroethane (HFC-143a) + 2,3,3,3-tetrafluoroprop-1-ene (HFO-1234yf) systems
pvap	2309.70	kPa	323.15	Vapor-liquid equilibria for the 1,1,1,2 -tetrafluoroethane (HFC-134a) + 1,1,1,2,3,3,3-heptafluoropropane (HFC-227ea) and 1,1,1-trifluoroethane (HFC-143a) + 2,3,3,3-tetrafluoroprop-1-ene (HFO-1234yf) systems

pvap	626.00	kPa	273.15	(Vapour + liquid) equilibria of the {1,1,1-trifluoroethane (HFC-143a) + isobutene} system
pvap	972.00	kPa	288.15	(Vapour + liquid) equilibria of the {1,1,1-trifluoroethane (HFC-143a) + isobutene} system
pvap	1442.00	kPa	303.15	(Vapour + liquid) equilibria of the {1,1,1-trifluoroethane (HFC-143a) + isobutene} system
pvap	2063.00	kPa	318.15	(Vapour + liquid) equilibria of the {1,1,1-trifluoroethane (HFC-143a) + isobutene} system
pvap	2875.00	kPa	333.15	(Vapour + liquid) equilibria of the {1,1,1-trifluoroethane (HFC-143a) + isobutene} system
pvap	1831.00	kPa	313.15	Vapor-Liquid Equilibria of the 1,1,1-Trifluoroethane + n-Butane System
pvap	2302.00	kPa	323.15	Vapor-Liquid Equilibria of the 1,1,1-Trifluoroethane + n-Butane System
pvap	2874.00	kPa	333.15	Vapor-Liquid Equilibria of the 1,1,1-Trifluoroethane + n-Butane System
pvap	3553.00	kPa	343.15	Vapor-Liquid Equilibria of the 1,1,1-Trifluoroethane + n-Butane System
pvap	620.00	kPa	273.15	Vapor-Liquid Equilibria for the Binary System of 1,1,1-Trifluoroethane (HFC-143a) + Butane (R600) at Various Temperatures

pvap	837.00	kPa	283.15	Vapor-Liquid Equilibria for the Binary System of 1,1,1-Trifluoroethane (HFC-143a) + Butane (R600) at Various Temperatures
pvap	1104.00	kPa	293.15	Vapor-Liquid Equilibria for the Binary System of 1,1,1-Trifluoroethane (HFC-143a) + Butane (R600) at Various Temperatures
pvap	1432.00	kPa	303.15	Vapor-Liquid Equilibria for the Binary System of 1,1,1-Trifluoroethane (HFC-143a) + Butane (R600) at Various Temperatures
pvap	1830.00	kPa	313.15	Vapor-Liquid Equilibria for the Binary System of 1,1,1-Trifluoroethane (HFC-143a) + Butane (R600) at Various Temperatures
pvap	1619.80	kPa	308.15	Measurement of vapor liquid equilibria for the binary systems of propane + 1,1,1,2-tetrafluoroethane and 1,1,1-trifluoroethane + propane at various temperatures
pvap	1261.80	kPa	298.15	Measurement of vapor liquid equilibria for the binary systems of propane + 1,1,1,2-tetrafluoroethane and 1,1,1-trifluoroethane + propane at various temperatures

pvap	962.00	kPa	288.15	Measurement of vapor liquid equilibria for the binary systems of propane + 1,1,1,2-tetrafluoroethane and 1,1,1-trifluoroethane + propane at various temperatures
pvap	722.40	kPa	278.15	Measurement of vapor liquid equilibria for the binary systems of propane + 1,1,1,2-tetrafluoroethane and 1,1,1-trifluoroethane + propane at various temperatures
pvap	529.20	kPa	268.15	Measurement of vapor liquid equilibria for the binary systems of propane + 1,1,1,2-tetrafluoroethane and 1,1,1-trifluoroethane + propane at various temperatures
pvap	2298.00	kPa	323.15	Vapor-Liquid Equilibria for the Binary System of 1,1,1-Trifluoroethane (HFC-143a) + Butane (R600) at Various Temperatures
sfust	38.30	J/mol×K	156.40	NIST Webbook
sfust	1.90	J/mol×K	161.90	NIST Webbook
svapt	85.45	J/mol×K	224.40	NIST Webbook

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.43786e+01
Coeff. B	-1.99833e+03
Coeff. C	-2.11680e+01
Temperature range (K), min.	161.82

Temperature range (K), max.	345.86

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	6.77777e+01
Coeff. B	-3.95200e+03
Coeff. C	-8.58781e+00
Coeff. D	1.73454e-05
Temperature range (K), min.	161.85
Temperature range (K), max.	346.25

Datasets

Molar heat capacity at constant pressure, J/K/mol

Temperature, K - Gas	Pressure, kPa - Gas	Molar heat capacity at constant pressure, J/K/mol - Gas
311.15	1600.00	120.18
317.15	1800.00	125.89
318.15	1600.00	111.77
318.15	2000.00	139.51
324.15	2200.00	145.31
326.15	2400.00	161.69
327.15	2400.00	160.77
338.15	2400.00	130.60
341.15	2200.00	117.24
343.15	2400.00	124.80

Reference *https://www.doi.org/10.1007/s10765-007-0186-y*

Viscosity, Pa*s

Temperature, K - Liquid	Pressure, kPa - Liquid	Viscosity, Pa*s - Liquid
254.35	1340.00	0.0002054

254.35	1350.00	0.0002063
254.35	1360.00	0.0002065
254.35	1410.00	0.0002060
254.35	1450.00	0.0002063
254.35	1960.00	0.0002082
254.35	1970.00	0.0002078
254.35	2010.00	0.0002080
254.35	2040.00	0.0002083
254.35	2070.00	0.0002088
254.35	3110.00	0.0002114
254.35	3160.00	0.0002116
254.35	3170.00	0.0002115
254.35	3210.00	0.0002122
254.35	3280.00	0.0002120
254.35	3320.00	0.0002119
254.35	4170.00	0.0002145
254.35	4190.00	0.0002147
254.35	4210.00	0.0002147
254.35	4940.00	0.0002173
254.35	4970.00	0.0002167
254.35	5000.00	0.0002176
254.35	5020.00	0.0002172
254.35	5050.00	0.0002171
254.35	5100.00	0.0002176
254.35	1350.00	0.0002059
254.35	1360.00	0.0002057
254.35	1960.00	0.0002080
254.35	2010.00	0.0002081
254.35	4210.00	0.0002147
254.35	1350.00	0.0002062
263.02	1300.00	0.0001828
263.02	1320.00	0.0001828
263.02	1330.00	0.0001827
263.02	1970.00	0.0001855
263.02	1980.00	0.0001857
263.02	1990.00	0.0001855
263.02	2010.00	0.0001851
263.02	2020.00	0.0001857
263.02	3420.00	0.0001899
263.02	3430.00	0.0001898
263.02	3450.00	0.0001898
263.02	3520.00	0.0001903
263.02	3560.00	0.0001901
263.02	3590.00	0.0001898

263.02	3640.00	0.0001906
263.02	3670.00	0.0001905
263.02	4800.00	0.0001943
263.02	4840.00	0.0001940
263.02	4870.00	0.0001940
263.02	4910.00	0.0001942
263.02	4950.00	0.0001939
263.02	6990.00	0.0002018
263.02	7090.00	0.0002010
263.02	7160.00	0.0002015
263.02	7200.00	0.0002011
263.02	7230.00	0.0002016
263.02	7310.00	0.0002013
263.02	7380.00	0.0002024
263.02	7390.00	0.0002015
263.02	7420.00	0.0002011
263.02	7460.00	0.0002024
263.02	7520.00	0.0002017
263.02	1320.00	0.0001829
263.02	1330.00	0.0001826
263.02	2020.00	0.0001859
263.02	3670.00	0.0001908
263.02	7310.00	0.0002019
263.02	7460.00	0.0002022
263.02	1330.00	0.0001826
273.21	1420.00	0.0001617
273.21	1430.00	0.0001619
273.21	1440.00	0.0001619
273.21	1450.00	0.0001619
273.21	1810.00	0.0001629
273.21	1820.00	0.0001627
273.21	1860.00	0.0001629
273.21	1890.00	0.0001626
273.21	3450.00	0.0001682
273.21	3460.00	0.0001677
273.21	3490.00	0.0001678
273.21	3500.00	0.0001680
273.21	4850.00	0.0001724
273.21	4860.00	0.0001722
273.21	4880.00	0.0001719
273.21	4910.00	0.0001722
273.21	4960.00	0.0001724
273.21	5010.00	0.0001720
273.21	5030.00	0.0001723

273.21	7780.00	0.0001804
273.21	7800.00	0.0001805
273.21	7810.00	0.0001806
273.21	7900.00	0.0001803
273.21	7960.00	0.0001805
273.21	9530.00	0.0001854
273.21	9540.00	0.0001852
273.21	9580.00	0.0001856
273.21	9610.00	0.0001851
273.21	9770.00	0.0001850
273.21	9880.00	0.0001853
273.21	1440.00	0.0001619
273.21	3450.00	0.0001681
273.21	3490.00	0.0001682
273.21	4880.00	0.0001724
273.21	3450.00	0.0001679
283.22	1240.00	0.0001416
283.22	1260.00	0.0001418
283.22	1470.00	0.0001416
283.22	1510.00	0.0001424
283.22	1530.00	0.0001424
283.22	1570.00	0.0001429
283.22	1900.00	0.0001433
283.22	1930.00	0.0001433
283.22	1950.00	0.0001432
283.22	1970.00	0.0001440
283.22	2000.00	0.0001435
283.22	2050.00	0.0001442
283.22	3700.00	0.0001495
283.22	3720.00	0.0001496
283.22	3850.00	0.0001497
283.22	5130.00	0.0001537
283.22	5220.00	0.0001543
283.22	5260.00	0.0001536
283.22	7400.00	0.0001615
283.22	7500.00	0.0001610
283.22	7540.00	0.0001607
283.22	9720.00	0.0001679
283.22	9780.00	0.0001678
283.22	9940.00	0.0001680
283.22	10050.00	0.0001678
283.22	1240.00	0.0001416
283.22	3700.00	0.0001495
283.22	5260.00	0.0001540

293.17	1370.00	0.0001253
293.17	1390.00	0.0001255
293.17	1400.00	0.0001252
293.17	1420.00	0.0001256
293.17	1430.00	0.0001258
293.17	1440.00	0.0001258
293.17	1850.00	0.0001268
293.17	1860.00	0.0001266
293.17	1890.00	0.0001271
293.17	1920.00	0.0001267
293.17	1940.00	0.0001270
293.17	3820.00	0.0001333
293.17	3830.00	0.0001336
293.17	3850.00	0.0001337
293.17	3860.00	0.0001335
293.17	3870.00	0.0001333
293.17	3890.00	0.0001335
293.17	4900.00	0.0001378
293.17	4920.00	0.0001377
293.17	4960.00	0.0001380
293.17	4970.00	0.0001380
293.17	5010.00	0.0001381
293.17	7450.00	0.0001448
293.17	7490.00	0.0001446
293.17	7520.00	0.0001450
293.17	7550.00	0.0001449
293.17	7560.00	0.0001449
293.17	7590.00	0.0001451
293.17	7620.00	0.0001453
293.17	9740.00	0.0001507
293.17	9770.00	0.0001506
293.17	9820.00	0.0001507
293.17	9880.00	0.0001510
293.17	9970.00	0.0001511
293.17	10070.00	0.0001517
293.17	1390.00	0.0001255
293.17	1430.00	0.0001256
293.17	3890.00	0.0001335
293.17	3890.00	0.0001336

Reference *https://www.doi.org/10.1021/je0601356*

Mass density, kg/m3

Temperature, K - Gas	Pressure, kPa - Gas	Mass density, kg/m3 - Gas
283.15	203.60	7.588
283.15	399.90	15.605
283.15	505.80	20.282
283.15	605.00	24.932
283.15	651.60	27.227
283.15	651.70	27.238
283.15	700.80	29.728
283.15	750.80	32.361
283.15	781.50	34.03
283.15	781.60	34.039
283.15	801.70	35.15
283.15	801.80	35.164
283.15	820.20	36.196
283.15	820.30	36.205
283.15	203.60	7.589
283.15	399.90	15.605
283.15	505.80	20.278
283.15	605.00	24.935
283.15	700.80	29.729
283.15	750.80	32.363
293.15	201.70	7.219
293.15	201.80	7.222
293.15	400.30	14.916
293.15	599.30	23.356
293.15	701.30	28.031
293.15	798.20	32.729
293.15	898.70	37.925
293.15	951.00	40.774
293.15	999.60	43.532
293.15	1030.90	45.365
293.15	1048.70	46.429
293.15	1048.80	46.429
293.15	1071.00	47.788
293.15	1071.10	47.784
293.15	1089.00	48.896
293.15	400.30	14.915
293.15	599.30	23.36
293.15	701.30	28.028
293.15	798.20	32.732

293.15	898.70	37.921
293.15	951.00	40.774
293.15	999.60	43.532
293.15	1030.90	45.355
293.15	1089.00	48.901
303.15	200.00	6.895
303.15	400.90	14.305
303.15	600.30	22.265
303.15	600.40	22.265
303.15	801.60	31.034
303.15	1001.00	40.662
303.15	1099.90	45.879
303.15	1197.30	51.364
303.15	1249.20	54.458
303.15	1299.50	57.578
303.15	1340.60	60.231
303.15	1369.80	62.181
303.15	1401.50	64.363
303.15	1423.70	65.925
303.15	1423.90	65.952
303.15	200.00	6.903
303.15	400.90	14.313
303.15	801.60	31.031
303.15	1001.00	40.666
303.15	1099.90	45.88
303.15	1197.30	51.363
303.15	1299.50	57.581
303.15	1340.60	60.229
303.15	1369.80	62.183
303.15	1401.50	64.364
313.15	201.50	6.696
313.15	201.80	6.718
313.15	205.10	6.831
313.15	206.20	6.869
313.15	401.60	13.776
313.15	401.70	13.775
313.15	600.30	21.275
313.15	800.30	29.41
313.15	999.10	38.197
313.15	1200.30	47.988
313.15	1400.20	58.893
313.15	1500.80	64.963
313.15	1540.90	67.443
313.15	1598.00	71.29

313.15	1598.10	71.312
313.15	1648.30	74.652
313.15	1701.30	78.498
313.15	1740.80	81.508
313.15	1771.10	83.908
313.15	1793.20	85.73
313.15	1794.40	85.811
313.15	205.10	6.828
313.15	600.30	21.282
313.15	800.30	29.413
313.15	999.10	38.204
313.15	1200.30	48.002
313.15	1400.20	58.909
313.15	1500.80	64.977
313.15	1540.90	67.442
313.15	1648.30	74.647
313.15	1701.30	78.51
313.15	1740.80	81.517
313.15	1771.10	83.916

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Legend

af:	Acentric Factor
chg:	Standard gas 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
hfus:	Enthalpy of fusion at standard conditions
hfust:	Enthalpy of fusion 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

rhoc:	Critical density
rhog:	Gas Density
rinpol:	Non-polar retention indices
sfust:	Entropy of fusion at a given temperature
sl:	Liquid phase molar entropy at standard conditions
svapt:	Entropy of vaporization at a given temperature
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
tt:	Triple Point Temperature
vc:	Critical Volume
zc:	Critical Compressibility