

Propane, 2,3-dichloro-1,1,1-trifluoro-

Other names:	2,3-Dichloro-1,1,1-trifluoropropane R-243db
Inchi:	InChI=1S/C3H3Cl2F3/c4-1-2(5)3(6,7)8/h2H,1H2
InchiKey:	QJMGASHUZRHZBT-UHFFFAOYSA-N
Formula:	C3H3Cl2F3
SMILES:	FC(F)(F)C(Cl)CCl
Mol. weight [g/mol]:	166.96
CAS:	338-75-0

Physical Properties

Property code	Value	Unit	Source
gf	-633.51	kJ/mol	Joback Method
hf	-739.09	kJ/mol	Joback Method
hfus	10.22	kJ/mol	Joback Method
hvap	26.91	kJ/mol	Joback Method
log10ws	-2.16		Crippen Method
logp	2.395		Crippen Method
mcvol	82.920	ml/mol	McGowan Method
pc	3509.58	kPa	Joback Method
tb	349.90 ± 0.50	K	NIST Webbook
tb	349.50 ± 0.50	K	NIST Webbook
tc	504.81	K	Joback Method
tf	172.60	K	Joback Method
vc	0.339	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	168.83	J/mol×K	504.81	Joback Method
cpg	164.16	J/mol×K	476.85	Joback Method
cpg	159.15	J/mol×K	448.89	Joback Method
cpg	153.78	J/mol×K	420.93	Joback Method
cpg	148.04	J/mol×K	392.96	Joback Method
cpg	141.91	J/mol×K	365.00	Joback Method

cpg	135.37	J/mol×K	337.04	Joback Method
rhoI	1426.80	kg/m3	311.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1470.10	kg/m3	289.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1466.30	kg/m3	291.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1462.30	kg/m3	293.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1458.40	kg/m3	295.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1454.50	kg/m3	297.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1450.60	kg/m3	299.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1446.60	kg/m3	301.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1442.70	kg/m3	303.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1438.70	kg/m3	305.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane

rhoI	1434.70	kg/m3	307.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1430.80	kg/m3	309.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1473.90	kg/m3	287.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1422.80	kg/m3	313.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1418.80	kg/m3	315.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1414.80	kg/m3	317.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1410.80	kg/m3	319.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1406.70	kg/m3	321.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1402.70	kg/m3	323.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1398.60	kg/m3	325.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane

rhoI	1394.50	kg/m3	327.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1390.40	kg/m3	329.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1386.30	kg/m3	331.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1382.30	kg/m3	333.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1477.60	kg/m3	285.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1481.30	kg/m3	283.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1485.30	kg/m3	281.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1489.30	kg/m3	279.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1493.10	kg/m3	277.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
rhoI	1496.80	kg/m3	275.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane

rhoI	1500.80	kg/m3	273.15	Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane
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Correlations

Information	Value
Property code	pvap
Equation	$\ln(P_{vp}) = A + B/(T + C)$
Coeff. A	1.52312e+01
Coeff. B	-3.30686e+03
Coeff. C	-3.83110e+01
Temperature range (K), min.	259.60
Temperature range (K), max.	371.67

Sources

McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C338750&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
Measurements of Density, Viscosity, and Vapor Pressure for 1,1,1-Trifluoro-2,3-dichloropropane:	https://www.doi.org/10.1021/je5010593
Joback Method:	https://en.wikipedia.org/wiki/Joback_method

Legend

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
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient

mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
pvap:	Vapor pressure
rhoL:	Liquid Density
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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