Ribitol

Other names:	1,2,3,4,5-Pentanepentol
	Adonit
	Adonitrol
	Pentitol
	SRS-1,2,3,4,5-pentanepentol
	adonite
	adonitol
Inchi:	InChI=1S/C5H12O5/c6-1-3(8)5(10)4(9)2-7/h3-10H,1-2H2/t3-,4+,5-
InchiKey:	HEBKCHPVOIAQTA-ZXFHETKHSA-N
Formula:	C5H12O5
SMILES:	OCC(O)C(O)C(O)CO
Mol. weight [g/mol]:	152.15
CAS:	488-81-3

Physical Properties

Property code	Value	Unit	Source
gf	-700.20	kJ/mol	Joback Method
hf	-923.52	kJ/mol	Joback Method
hfus	36.42	kJ/mol	Thermodynamic investigation of several natural polyols (IV): Heat capacities and thermodynamic properties of adonitol
hsub	161.00	kJ/mol	NIST Webbook
hvap	108.95	kJ/mol	Joback Method
log10ws	1.43		Crippen Method
logp	-2.946		Crippen Method
mcvol	110.660	ml/mol	McGowan Method
pc	6785.20	kPa	Joback Method
tb	773.38	K	Joback Method
tc	947.56	K	Joback Method
tf	374.70 ± 0.40	K	NIST Webbook
tf	374.00 ± 1.00	K	NIST Webbook
vc	0.393	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	360.45	J/mol×K	918.53	Joback Method
cpg	350.87	J/mol×K	860.47	Joback Method
cpg	345.68	J/mol×K	831.44	Joback Method
cpg	340.20	J/mol×K	802.41	Joback Method
cpg	334.42	J/mol×K	773.38	Joback Method
cpg	364.86	J/mol×K	947.56	Joback Method
cpg	355.79	J/mol×K	889.50	Joback Method
dvisc	0.0003514	Pa×s	466.57	Joback Method
dvisc	0.0000330	Pa×s	527.93	Joback Method
dvisc	0.0000051	Pa×s	589.30	Joback Method
dvisc	0.0000011	Pa×s	650.66	Joback Method
dvisc	0.0000003	Pa×s	712.02	Joback Method
dvisc	0.0076529	Pa×s	405.21	Joback Method
dvisc	0.0000001	Pa×s	773.38	Joback Method
hfust	38.90	kJ/mol	379.40	NIST Webbook
hfust	37.60	kJ/mol	374.70	NIST Webbook
hfust	37.60	kJ/mol	374.70	NIST Webbook
hfust	35.50	kJ/mol	375.00	NIST Webbook
hfust	36.42	kJ/mol	369.10	NIST Webbook
hvapt	111.10 ± 1.50	kJ/mol	441.50	NIST Webbook
sfust	102.50	J/mol×K	379.40	NIST Webbook
sfust	100.30	J/mol×K	374.70	NIST Webbook

Sources

NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C488813&Units=SI
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Apparent molar volumes and apparent molar heat capacities of aqueous adonitol, dulcitol, glycerol, [illegible]:	https://www.doi.org/10.1016/j.jct.2006.08.009
Thermodynamic investigation of several natural polyols (I): Heat capacities and thermodynamic properties of adonitol, [illegible] and xylitol at temperatures [illegible] K:	https://www.doi.org/10.1016/j.tca.2009.11.011
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772

Legend

cpg:	Ideal gas heat capacity
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
hsub:	Enthalpy of sublimation 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
sfust:	Entropy of fusion at a given temperature
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume