L-Arabinitol

Other names:	Arabinitol, L- L-(-)-arabitol L-arabitol
Inchi:	InChI=1S/C5H12O5/c6-1-3(8)5(10)4(9)2-7/h3-10H,1-2H2
InchiKey:	HEBKCHPVOIAQTA-UHFFFAOYSA-N
Formula:	C5H12O5
SMILES:	OCC(O)C(O)C(O)CO
Mol. weight [g/mol]:	152.15
CAS:	7643-75-6

Physical Properties

Property code	Value	Unit	Source
gf	-700.20	kJ/mol	Joback Method
hf	-923.52	kJ/mol	Joback Method
hfus	18.58	kJ/mol	Joback Method
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	369.85	K	Heat capacities of some sugar alcohols as phase change materials for thermal energy storage applications
vc	0.393	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	334.42	J/mol×K	773.38	Joback Method
cpg	340.20	J/mol×K	802.41	Joback Method
cpg	345.68	J/mol×K	831.44	Joback Method

cpg	350.87	J/mol×K	860.47	Joback Method
cpg	355.79	J/mol×K	889.50	Joback Method
cpg	360.45	J/mol×K	918.53	Joback Method
cpg	364.86	J/mol×K	947.56	Joback Method
dvisc	0.0076529	Pa×s	405.21	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	0.0000001	Pa×s	773.38	Joback Method
hfust	43.20	kJ/mol	374.00	NIST Webbook

Sources

Heat capacities of some sugar alcohols as phase change materials for thermal energy storage applications: https://www.doi.org/10.1016/j.jct.2017.08.004

Joback Method: https://en.wikipedia.org/wiki/Joback_method

McGowan Method: http://link.springer.com/article/10.1007/BF02311772

NIST Webbook: http://webbook.nist.gov/cgi/cbook.cgi?ID=C7643756&Units=SI

Crippen Method: http://pubs.acs.org/doi/abs/10.1021/ci990307l

Crippen Method: https://www.chemeo.com/doc/models/crippen_log10ws

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
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
tb: Normal Boiling Point Temperature
tc: Critical Temperature
tf: Normal melting (fusion) point

vc: Critical Volume

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