2,3-Pentanediol

Other names: pentane-2,3-diol
Inchi: InChI=1S/C5H12O2/c1-3-5(7)4(2)6/h4-7H,3H2,1-2H3
InchiKey: XLMFDCKSFJWJTP-UHFFFAOYSA-N
Formula: C5H12O2
SMILES: CCC(O)C(C)O
Mol. weight [g/mol]: 104.15
CAS: 42027-23-6

Physical Properties

Property code	Value	Unit	Source
gf	-287.30	kJ/mol	Joback Method
hf	-461.55	kJ/mol	Joback Method
hfus	9.84	kJ/mol	Joback Method
hvap	59.31	kJ/mol	Joback Method
log10ws	-0.67		Crippen Method
logp	0.138		Crippen Method
mcvol	93.050	ml/mol	McGowan Method
pc	4456.32	kPa	Joback Method
rinpol	810.00		NIST Webbook
rinpol	810.00		NIST Webbook
ripol	1553.00		NIST Webbook
ripol	1553.00		NIST Webbook
tb	497.28	K	Joback Method
tc	661.20	K	Joback Method
tf	237.75	K	Joback Method
vc	0.342	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	213.59	J/mol×K	497.28	Joback Method
cpg	249.98	J/mol×K	633.88	Joback Method
cpg	243.30	J/mol×K	606.56	Joback Method
cpg	236.33	J/mol×K	579.24	Joback Method

cpg	229.06	J/mol×K	551.92	Joback Method
cpg	221.48	J/mol×K	524.60	Joback Method
cpg	256.38	J/mol×K	661.20	Joback Method
dvisc	0.0000920	Pa×s	497.28	Joback Method
dvisc	0.0002095	Pa×s	454.02	Joback Method
dvisc	0.0005673	Pa×s	410.77	Joback Method
dvisc	0.0019427	Pa×s	367.51	Joback Method
dvisc	0.0092386	Pa×s	324.26	Joback Method
dvisc	0.0710068	Pa×s	281.00	Joback Method
dvisc	1.1462269	Pa×s	237.75	Joback Method

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/(T + C)
Coeff. A	1.43913e+01
Coeff. B	-4.03801e+03
Coeff. C	-6.92110e+01
Temperature range (K), min.	324.01
Temperature range (K), max.	513.94

Sources

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

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=C42027236&Units=SI

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
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
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume