Butanedioic acid, 2,3-dihydroxy- [R-(R*,R*)]-, dimethyl ester

Other names: Tartaric acid, dimethyl ester, (+)-
Dimethyl (+)-tartrate
Dimethyl d-tartrate
Dimethyl tartrate
Dimethyl L-tartrate
l-Tartaric acid, dimethyl ester
L-(+)-Tartaric acid, dimethyl ester
Butanedioic acid, 2,3-dihydroxy- (2R,3R)-, 1,4-dimethyl ester
NSC 517
Dimethyl 2,3-dihydroxysuccinate
dimethyl [R(R*,R*)]-tartrate

Inchi: InChI=1S/C6H10O6/c1-11-5(9)3(7)4(8)6(10)12-2/h3-4,7-8H,1-2H3/t3-,4-/m0/s1

InchiKey: PVRATXCXJDHJJN-IMJSIDKUSA-N

Formula: C6H10O6

SMILES: COC(=O)C(O)C(O)C(=O)OC

Mol. weight [g/mol]: 178.14

CAS: 608-68-4

Physical Properties

Property code	Value	Unit	Source
gf	-746.72	kJ/mol	Joback Method
hf	-971.79	kJ/mol	Joback Method
hfus	18.00	kJ/mol	Joback Method
hvap	79.84	kJ/mol	Joback Method
log10ws	1.19		Crippen Method
logp	-1.946		Crippen Method
mcvol	122.020	ml/mol	McGowan Method
pc	4432.62	kPa	Joback Method
rinpol	1229.20		NIST Webbook
tb	672.74	K	Joback Method
tc	851.56	K	Joback Method
tf	393.34	K	Joback Method
vc	0.446	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	343.76	J/mol×K	762.15	Joback Method
cpg	361.42	J/mol×K	851.56	Joback Method
cpg	355.94	J/mol×K	821.76	Joback Method
cpg	350.05	J/mol×K	791.95	Joback Method
cpg	322.54	J/mol×K	672.74	Joback Method
cpg	330.00	J/mol×K	702.54	Joback Method
cpg	337.07	J/mol×K	732.35	Joback Method
dvisc	0.0000159	Pa×s	672.74	Joback Method
dvisc	0.0001172	Pa×s	533.04	Joback Method
dvisc	0.0000541	Pa×s	579.61	Joback Method
dvisc	0.0000280	Pa×s	626.17	Joback Method
dvisc	0.0035690	Pa×s	393.34	Joback Method
dvisc	0.0008981	Pa×s	439.91	Joback Method
dvisc	0.0002943	Pa×s	486.47	Joback Method
hfust	17.36	kJ/mol	322.20	NIST Webbook
hsubt	77.00 ± 8.00	kJ/mol	315.00	NIST Webbook
hvapt	66.00	kJ/mol	464.00	NIST Webbook
hvapt	76.40	kJ/mol	343.50	NIST Webbook

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbrp	436.20	K	3.10	NIST Webbook

Sources

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=C608684&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
hfust:	Enthalpy of fusion at a given temperature
hsubt:	Enthalpy of sublimation at a given temperature
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
rinpol:	Non-polar retention indices
tb:	Normal Boiling Point Temperature
tbrp:	Boiling point at reduced pressure
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume

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