Succinic anhydride

Other names:	2,5(3H,4H)-Furandione
	2,5-Diketotetrahydrofuran
	2,5-Dioxotetrahydrofuran
	2,5-Furandione, dihydro-
	Bernsteinsaure-anhydrid
	Butanedioic anhydride
	Dihydro-2,5-diketotetrahydrofuran
	Dihydro-2,5-furandione
	NCI-C55696
	NSC 8518
	Rikacid SA
	Succinic acid anhydride
	Succinyl anhydride
	Succinyl oxide
	Tetrahydro-2,5-dioxofuran
	Tetrahydro-2,5-furandione
	butanedioic acid, anhydride
Inchi:	InChI=1S/C4H4O3/c5-3-1-2-4(6)7-3/h1-2H2
InchiKey:	RINCXYDBBGOEEQ-UHFFFAOYSA-N
Formula:	C4H4O3
SMILES:	O=C1CCC(=O)O1
Mol. weight [g/mol]:	100.07
CAS:	108-30-5

Physical Properties

Property code	Value	Unit	Source
chs	-1543.90 ± 0.63	kJ/mol	NIST Webbook
chs	-1537.10 ± 0.40	kJ/mol	NIST Webbook
gf	-304.24	kJ/mol	Joback Method
hf	-527.90 ± 1.70	kJ/mol	NIST Webbook
hfs	-608.60 ± 0.70	kJ/mol	NIST Webbook
hfus	5.98	kJ/mol	Joback Method
hsub	80.70 ± 1.60	kJ/mol	NIST Webbook
hsub	80.70 ± 1.60	kJ/mol	NIST Webbook
hsub	80.70	kJ/mol	NIST Webbook
hvap	38.07	kJ/mol	Joback Method
ie	10.84	eV	NIST Webbook

ie	10.84	eV	NIST Webbook
ie	10.84	eV	NIST Webbook
ie	10.80	eV	NIST Webbook
log10ws	-0.03		Crippen Method
logp	-0.150		Crippen Method
mcvol	65.370	ml/mol	McGowan Method
pc	5670.27	kPa	Joback Method
rinpol	1022.00		NIST Webbook
tb	534.20	K	NIST Webbook
tc	717.29	K	Joback Method
tf	392.00 ± 1.00	K	NIST Webbook
tf	393.17	K	Measurement and correlation of solubility of succinic anhydride in pure solvents and binary solvent mixtures
tf	393.15 ± 1.50	K	NIST Webbook
tf	392.60 ± 1.00	K	NIST Webbook
vc	0.236	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	160.37	J/mol×K	595.37	Joback Method
cpg	168.82	J/mol×K	636.01	Joback Method
cpg	184.46	J/mol×K	717.29	Joback Method
cpg	176.87	J/mol×K	676.65	Joback Method
cpg	133.07	J/mol×K	473.46	Joback Method
cpg	142.43	J/mol×K	514.10	Joback Method
cpg	151.55	J/mol×K	554.74	Joback Method
hsubt	82.20	kJ/mol	300.50	NIST Webbook
hsubt	80.50 ± 1.60	kJ/mol	309.00	NIST Webbook
hvapt	57.30	kJ/mol	467.50	NIST Webbook
pvap	40.00	kPa	499.14	Isobaric Vapor Liquid Equilibrium for Binary System of -Butyrolactone + Succinic Anhydride at 20.0, 30.0, and 40.0 kPa

pvap	30.00	kPa	488.81	Isobaric Vapor Liquid Equilibrium for Binary System of -Butyrolactone + Succinic Anhydride at 20.0, 30.0, and 40.0 kPa
pvap	20.00	kPa	475.01	Isobaric Vapor Liquid Equilibrium for Binary System of -Butyrolactone + Succinic Anhydride at 20.0, 30.0, and 40.0 kPa

Correlations

Information	Value
Property code	pvap
Equation	ln(Pvp) = A + B/T + C*ln(T) + D*T^2
Coeff. A	1.01282e+02
Coeff. B	-1.15330e+04
Coeff. C	-1.22030e+01
Coeff. D	5.30723e-06
Temperature range (K), min.	393.00
Temperature range (K), max.	811.00

Sources

Measurement and correlation of solubility of succinic anhydride in pure solvents and binary solvent mixtures:	https://www.doi.org/10.1016/j.jct.2016.09.025
Isobaric Vapor Liquid Equilibrium for Binary System of -Butyrolactone + Succinic Anhydride at 20.0, 30.0, and 40.0 kPa:	https://www.doi.org/10.1021/acs.jced.7b00008
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=C108305&Units=SI
KDB Vapor Pressure Data:	https://www.cheric.org/research/kdb/hcprop/showprop.php?cmpid=988
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws

Legend

chs:	Standard solid enthalpy of combustion
cpg:	Ideal gas heat capacity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfs:	Solid phase enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hsub:	Enthalpy of sublimation at standard conditions
hsubt:	Enthalpy of sublimation at a given temperature
hvap:	Enthalpy of vaporization at standard conditions
hvapt:	Enthalpy of vaporization at a given temperature
ie:	Ionization energy
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
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume