ALPHA-D-(+)-LACTOSE

Other names: 4-O-«beta»-D-galactopyranosyl-«alpha»-D-glucopyranose
«alpha»-lactose
Inchi: InChI=1S/C12H22O11/c13-1-3-5(15)6(16)9(19)12(22-3)23-10-4(2-14)21-11(20)8(18)7(10
InchiKey: GUBGYTABKSRVRQ-UHFFFAOYSA-N
Formula: C12H22O11
SMILES: OCC1OC(OC2C(CO)OC(O)C(O)C2O)C(O)C(O)C1O
Mol. weight [g/mol]: 342.30

Physical Properties

Property code	Value	Unit	Source
hfus	68.92	kJ/mol	Joback Method
log10ws	0.12		Cheméo Relay (1.0)
logp	-5.397		Crippen Method
mcvol	222.790	ml/mol	McGowan Method
tf	456.31	K	Cheméo Relay (1.0)

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	889.71	J/mol×K	1289.46	Joback Method
cpg	641.99	J/mol×K	1783.82	Joback Method
cpg	709.75	J/mol×K	1701.43	Joback Method
cpg	766.60	J/mol×K	1619.03	Joback Method
cpg	812.80	J/mol×K	1536.64	Joback Method
cpg	848.56	J/mol×K	1454.25	Joback Method
cpg	874.12	J/mol×K	1371.85	Joback Method
dvisc	1.9598804e-10	Pa×s	1028.62	Joback Method
dvisc	1.2390430e-11	Pa×s	1289.46	Joback Method
dvisc	2.7226863e-11	Pa×s	1202.51	Joback Method
dvisc	6.7640490e-11	Pa×s	1115.56	Joback Method
dvisc	2.0238363e-08	Pa×s	767.77	Joback Method
dvisc	6.9115221e-10	Pa×s	941.67	Joback Method
dvisc	3.1497617e-09	Pa×s	854.72	Joback Method
hfust	75.20	kJ/mol	496.20	NIST Webbook

Sources

McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Cheméo Relay (1.0):	
Cheméo Relay (1.0, beta):	
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C14641931&Units=SI
Joback Method:	https://en.wikipedia.org/wiki/Joback_method

Legend

cpg:	Ideal gas heat capacity
dvisc:	Dynamic viscosity
hfus:	Enthalpy of fusion at standard conditions
hfust:	Enthalpy of fusion at a given temperature
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
tf:	Normal melting (fusion) point