D-Galactose

Other names:	(+)-galactose
	D(+)-galactose
	D-(+)-galactose
	Galactose
	Galactose, D-
Inchi:	InChI=1S/C6H12O6/c7-1-3(9)5(11)6(12)4(10)2-8/h1,3-6,8-12H,2H2/t3-,4+,5+,6-/m0/s1
InchiKey:	GZCGUPFRVQAUEE-KCDKBNATSA-N
Formula:	C6H12O6
SMILES:	O=CC(O)C(O)C(O)C(O)CO
Mol. weight [g/mol]:	180.16
CAS:	59-23-4

Physical Properties

Property code	Value	Unit	Source
gf	-793.74	kJ/mol	Joback Method
hf	-1035.02	kJ/mol	Joback Method
hfus	19.93	kJ/mol	Joback Method
hvap	117.51	kJ/mol	Joback Method
log10ws	1.62		Crippen Method
logp	-3.379		Crippen Method
mcvol	126.320	ml/mol	McGowan Method
pc	6631.37	kPa	Joback Method
ss	205.40	J/mol×K	NIST Webbook
tb	844.48	K	Joback Method
tc	1034.02	K	Joback Method
tf	443.48	K	Joback Method
vc	0.460	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	419.64	J/mol×K	1034.02	Joback Method
cpg	390.04	J/mol×K	844.48	Joback Method
cpg	395.83	J/mol×K	876.07	Joback Method

cpg	401.25	J/mol×K	907.66	Joback Method
cpg	406.32	J/mol×K	939.25	Joback Method
cpg	411.06	J/mol×K	970.84	Joback Method
cpg	415.49	J/mol×K	1002.43	Joback Method
cps	220.54	J/mol×K	296.90	NIST Webbook
cps	203.30	J/mol×K	288.15	Temperature dependence of the heat capacities in the solid state of 18 mono-, di-, and poly-saccharides
cps	210.70	J/mol×K	293.15	Temperature dependence of the heat capacities in the solid state of 18 mono-, di-, and poly-saccharides
cps	213.70	J/mol×K	298.15	Temperature dependence of the heat capacities in the solid state of 18 mono-, di-, and poly-saccharides
cps	217.50	J/mol×K	303.15	Temperature dependence of the heat capacities in the solid state of 18 mono-, di-, and poly-saccharides
cps	222.30	J/mol×K	308.15	Temperature dependence of the heat capacities in the solid state of 18 mono-, di-, and poly-saccharides
cps	227.10	J/mol×K	313.15	Temperature dependence of the heat capacities in the solid state of 18 mono-, di-, and poly-saccharides
cps	229.40	J/mol×K	318.15	Temperature dependence of the heat capacities in the solid state of 18 mono-, di-, and poly-saccharides
cps	235.60	J/mol×K	323.15	Temperature dependence of the heat capacities in the solid state of 18 mono-, di-, and poly-saccharides

cps	236.80	J/mol×K	328.15	Temperature dependence of the heat capacities in the solid state of 18 mono-, di-, and poly-saccharides
cps	242.80	J/mol×K	333.15	Temperature dependence of the heat capacities in the solid state of 18 mono-, di-, and poly-saccharides
cps	247.00	J/mol×K	338.15	Temperature dependence of the heat capacities in the solid state of 18 mono-, di-, and poly-saccharides
cps	251.20	J/mol×K	343.15	Temperature dependence of the heat capacities in the solid state of 18 mono-, di-, and poly-saccharides
cps	254.70	J/mol×K	348.15	Temperature dependence of the heat capacities in the solid state of 18 mono-, di-, and poly-saccharides
cps	257.50	J/mol×K	353.15	Temperature dependence of the heat capacities in the solid state of 18 mono-, di-, and poly-saccharides
cps	265.10	J/mol×K	358.15	Temperature dependence of the heat capacities in the solid state of 18 mono-, di-, and poly-saccharides
cps	216.30	J/mol×K	300.00	NIST Webbook
dvisc	4.8974616e-08	Pa×s	844.48	Joback Method
dvisc	0.0017994	Pa×s	443.48	Joback Method
dvisc	0.0000991	Pa×s	510.31	Joback Method
dvisc	0.0000107	Pa×s	577.15	Joback Method
dvisc	0.0000018	Pa×s	643.98	Joback Method
dvisc	0.0000004	Pa×s	710.81	Joback Method
dvisc	0.0000001	Pa×s	777.65	Joback Method
hfust	43.80	kJ/mol	436.20	NIST Webbook

Sources

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Influence of NH4Br on Solvation Behavior of Polyhydroxy Solutes in Aqueous Solutions at Different Temperatures and Atmospheric Pressure:	https://www.doi.org/10.1021/je500886a
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
Selective interactions of 18-crown-6 with d-glucose and d-galactose in aqueous solutions: Titration calorimetry, densimetry, viscosimetry:	https://www.doi.org/10.1016/j.tca.2005.05.002
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Volumetric and Viscosity Properties of Monosaccharides in Aqueous Amino Acid Solutions at 298.15 K:	https://www.doi.org/10.1021/je050412t
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Effect of sodium acetate on the volumetric behaviour of some mono-, di-, and tri-saccharides in aqueous solutions over temperature range (288.15 to 318.15) K:	https://www.doi.org/10.1016/j.jct.2009.07.015
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Effect of fruit and milk sugars on solute-solvent interactions of diphenhydramine hydrochloride drug in aqueous solutions in viewpoint of volumetric and transport properties:	https://www.doi.org/10.1016/j.jct.2017.12.013
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Studies on volumetric properties of some saccharides in aqueous potassium chloride solutions over temperature range (288.15 to 318.15) K:	https://www.doi.org/10.1016/j.jct.2008.11.009
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Measurement and Correlation of Liquid-Liquid Equilibria for the Ternary Systems of Water + d-Fructose + 1-Butanol, Water + d-Glucose + 1-Butanol, and Water + d-Galactose + 1-Butanol at (288.2, 303.2 and 318.2) K:	https://www.doi.org/10.1021/acs.jced.7b00302

Legend

cpg:	Ideal gas heat capacity
cps:	Solid phase 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
ss:	Solid phase molar entropy at standard conditions
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume