Hydroquinone

Other names:

1,4-Benzenediol
1,4-Benzenediol (hydroquinone)
1,4-Dihydroxy-benzeen
1,4-Dihydroxy-benzol
1,4-Dihydroxybenzen
1,4-Dihydroxybenzene
1,4-Diidrobenzene
4-Hydroxyphenol
Aida
Arctuvin
Benzene, p-dihydroxy-
Benzohydroquinone
Benzoquinol
Black & White Bleaching Cream
Black and White Bleaching Cream
Derma-Blanch
Diak 5
Dihydroquinone
Eldopacque
Eldopaque
Eldopaque forte
Eldoquin
Eldoquin forte
HE 5
Hidroquinone
Hydrochinon
Hydrochinone
Hydroquinol
Hydroquinole
Idrochinone
NCI-C55834
Phiaquin
Quinol
Solaquin forte
Tecquinol
Tenox HQ
Tequinol
UN 2662
USAF EK-356
p-Benzenediol

p-Dihydroquinone
p-Dihydroxybenzene
p-Dioxobenzene
p-Dioxybenzene
p-Hydroquinone
p-Hydroxyphenol
p-quinol

Inchi: InChI=1S/C6H6O2/c7-5-1-2-6(8)4-3-5/h1-4,7-8H
InchiKey: QIGBRXMKCJKVMJ-UHFFFAOYSA-N
Formula: C6H6O2
SMILES: Oc1ccc(O)cc1
Mol. weight [g/mol]: 110.11
CAS: 123-31-9

Physical Properties

Property code	Value	Unit	Source
chs	-2847.50 ± 1.20	kJ/mol	NIST Webbook
chs	-2824.68	kJ/mol	NIST Webbook
chs	-2852.40 ± 0.88	kJ/mol	NIST Webbook
chs	-2855.60	kJ/mol	NIST Webbook
chs	-2865.00	kJ/mol	NIST Webbook
chs	-2856.00	kJ/mol	NIST Webbook
chs	-2861.00	kJ/mol	NIST Webbook
chs	-2858.00	kJ/mol	NIST Webbook
gf	-187.56	kJ/mol	Joback Method
hf	-268.90	kJ/mol	NIST Webbook
hf	-266.90	kJ/mol	NIST Webbook
hf	-268.40	kJ/mol	NIST Webbook
hf	-272.00	kJ/mol	NIST Webbook
hf	-277.00 ± 1.40	kJ/mol	NIST Webbook
hfs	-371.10 ± 1.30	kJ/mol	NIST Webbook
hfs	-362.50	kJ/mol	NIST Webbook
hfs	-361.00	kJ/mol	NIST Webbook
hfs	-363.00 ± 1.00	kJ/mol	NIST Webbook
hfs	-366.10 ± 1.20	kJ/mol	NIST Webbook
hfus	27.23	kJ/mol	Di-Hydroxybenzenes: Catechol, Resorcinol, and Hydroquinone. Enthalpies of Phase Transitions Revisited

hfus	23.78	kJ/mol	Measurement of enthalpy curves of phase change materials via DSC and T-History: When are both methods needed to estimate the behaviour of the bulk material in applications?
hsub	94.10	kJ/mol	NIST Webbook
hsub	94.10 ± 0.50	kJ/mol	NIST Webbook
hsub	99.20 ± 1.70	kJ/mol	NIST Webbook
hsub	94.13 ± 0.53	kJ/mol	NIST Webbook
hsub	103.76	kJ/mol	NIST Webbook
hvap	84.40 ± 0.70	kJ/mol	NIST Webbook
ie	8.44	eV	NIST Webbook
ie	7.95 ± 0.03	eV	NIST Webbook
ie	7.94 ± 0.01	eV	NIST Webbook
ie	7.93 ± 0.01	eV	NIST Webbook
ie	7.95 ± 0.05	eV	NIST Webbook
log10ws	-0.17		Estimated Solubility Method
log10ws	-0.17		Aqueous Solubility Prediction Method
logp	1.098		Crippen Method
mcvol	83.380	ml/mol	McGowan Method
pc	7561.44	kPa	Joback Method
rinpol	1241.00		NIST Webbook
rinpol	1334.00		NIST Webbook
rinpol	207.49		NIST Webbook
rinpol	1241.00		NIST Webbook
rinpol	1334.00		NIST Webbook
rinpol	1327.00		NIST Webbook
rinpol	1334.00		NIST Webbook
rinpol	1327.00		NIST Webbook
rinpol	220.60		NIST Webbook
rinpol	220.60		NIST Webbook
ripol	2693.00		NIST Webbook
ripol	2693.00		NIST Webbook
ripol	2693.00		NIST Webbook
sg	343.10 ± 5.00	J/mol×K	NIST Webbook
tb	558.20 ± 1.00	K	NIST Webbook
tb	558.20	K	NIST Webbook
tc	766.85	K	Joback Method
tf	445.00	K	NIST Webbook
tf	443.50 ± 0.30	K	NIST Webbook
tf	445.15	K	Liquid pharmaceuticals formulation by eutectic formation

tf	445.35	K	Aqueous Solubility Prediction Method
tf	445.00 ± 0.60	K	NIST Webbook
tf	445.00	K	Enthalpies of formation of dihydroxybenzenes revisited: Combining experimental and high-level ab initio data
tt	445.98 ± 0.03	K	NIST Webbook
tt	445.50 ± 0.30	K	NIST Webbook
vc	0.196	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source
cpg	186.33	J/mol×K	519.62	Joback Method
cpg	220.99	J/mol×K	725.65	Joback Method
cpg	215.32	J/mol×K	684.44	Joback Method
cpg	209.18	J/mol×K	643.24	Joback Method
cpg	202.41	J/mol×K	602.03	Joback Method
cpg	194.85	J/mol×K	560.83	Joback Method
cpg	226.33	J/mol×K	766.85	Joback Method
cps	133.50	J/mol×K	297.90	NIST Webbook
cps	150.20	J/mol×K	323.00	NIST Webbook
cps	130.50	J/mol×K	274.30	NIST Webbook
cps	136.40	J/mol×K	298.15	NIST Webbook
cps	131.90	J/mol×K	298.15	NIST Webbook
cps	139.70	J/mol×K	298.00	NIST Webbook
dvisc	0.0004493	Pa×s	415.54	Joback Method
dvisc	0.0009603	Pa×s	394.72	Joback Method
dvisc	0.0001210	Pa×s	457.17	Joback Method
dvisc	0.0000684	Pa×s	477.99	Joback Method
dvisc	0.0000251	Pa×s	519.62	Joback Method
dvisc	0.0000406	Pa×s	498.80	Joback Method
dvisc	0.0002260	Pa×s	436.35	Joback Method
hfust	26.50	kJ/mol	444.95	NIST Webbook
hfust	27.23	kJ/mol	445.10	NIST Webbook
hfust	26.48	kJ/mol	453.00	NIST Webbook
hfust	27.11	kJ/mol	445.50	NIST Webbook
hfust	27.11	kJ/mol	445.10	NIST Webbook
hsubt	101.30	kJ/mol	370.50	NIST Webbook
hsubt	99.00 ± 2.00	kJ/mol	351.00	NIST Webbook
hsubt	103.80	kJ/mol	322.00	NIST Webbook

hsubt	103.80	kJ/mol	335.50	NIST Webbook
hsubt	100.60 ± 1.30	kJ/mol	332.00	NIST Webbook
hsubt	93.70 ± 0.50	kJ/mol	334.00	NIST Webbook
hsubt	104.00 ± 1.00	kJ/mol	342.00	NIST Webbook
hvapt	70.50	kJ/mol	503.50	NIST Webbook
psub	3.33e-04	kPa	339.40	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method
psub	3.53e-04	kPa	339.20	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method
psub	2.64e-04	kPa	337.30	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method
psub	2.62e-04	kPa	337.20	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method
psub	2.12e-04	kPa	335.20	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method
psub	2.17e-04	kPa	335.20	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method
psub	2.32e-04	kPa	335.20	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method

psub	2.75e-04	kPa	337.30	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method	
psub	1.69e-04	kPa	333.20	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method	
psub	5.56e-05	kPa	322.80	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method	
psub	5.45e-05	kPa	322.80	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method	
psub	1.72e-04	kPa	333.20	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method	
psub	1.77e-04	kPa	333.10	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method	
psub	5.13e-05	kPa	322.80	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method	

psub	1.38e-04	kPa	331.00	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method	
psub	3.40e-04	kPa	339.40	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method	
psub	1.38e-04	kPa	331.00	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method	
psub	1.05e-04	kPa	329.00	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method	
psub	1.09e-04	kPa	329.00	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method	
psub	1.13e-04	kPa	328.90	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method	
psub	8.46e-05	kPa	326.90	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method	

psub	8.72e-05	kPa	326.90	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method
psub	9.44e-05	kPa	326.90	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method
psub	6.93e-05	kPa	324.90	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method
psub	6.59e-05	kPa	324.80	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method
psub	7.43e-05	kPa	324.90	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method
psub	1.42e-04	kPa	331.10	Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method
rhol	1328.00	kg/m3	293.15	Measurements of Liquid Liquid Equilibria for the Quaternary System 2-Methoxy-2-methylpropane + Phenol + Hydroquinone + Water at 313.15 K

rhos	1338.00	kg/m3	298.15	Liquid liquid equilibria for the quaternary system methyl isobutyl ketone water phenol hydroquinone
rhos	1332.00	kg/m3	293.20	Ternary and Quaternary Liquid-Liquid Equilibria for Systems of Methyl Butyl Ketone + Water + Hydroquinone + Phenol at 313.2 K and Atmospheric Pressure
sfust	60.90	J/mol×K	445.50	NIST Webbook
sfust	59.00	J/mol×K	444.95	NIST Webbook

Pressure Dependent Properties

Property code	Value	Unit	Pressure [kPa]	Source
tbrp	558.20	K	97.30	NIST Webbook
tbrp	558.00	K	97.30	NIST Webbook

Sources

Liquid pharmaceuticals formulation by eutectic formation:	https://www.doi.org/10.1016/j.fluid.2017.05.009
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
Liquid-Liquid Equilibria for the Ternary System Methyl Isobutyl Ketone + Water + Hydroquinone:	https://www.doi.org/10.1021/je060245c
Liquid-Liquid Equilibria for Octan-2-one + Dihydroxybenzene + Water at Different Temperatures: Experimental Data and Thermodynamic Modeling: Di-Hydroxybenzenes: Catechol, Resorcinol, and Hydroquinone.	https://www.doi.org/10.1021/acs.jced.9b00506
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C123319&Units=SI
Enthalpies of Phase Transitions Revisited:	https://www.doi.org/10.1016/j.tca.2008.02.016
Liquid liquid equilibrium for ternary systems: methyl isobutyl ketone + (catechol, resorcinol and hydroquinone) + water at 333.15 K and 353.15 K:	https://www.doi.org/10.1016/j.fluid.2016.11.005
Liquid liquid equilibria for the quaternary system methyl isobutyl ketone water phenol hydroquinone:	https://www.doi.org/10.1016/j.fluid.2007.05.026
Solubility of Hydroquinone in Different Solvents from 276.65 K to 345.10 K: Measurements and Thermodynamic Modeling of Liquid-Liquid Equilibria	https://www.doi.org/10.1021/je0502748
Ternary liquid equilibria for methyl isopropyl ketone + (resorcinol or catechol or hydroquinone) + water systems at different temperatures:	https://www.doi.org/10.1021/acs.jced.9b00633
Data for the Ternary (Methyl Propyl Ketone + Catechol, Resorcinol, or Hydroquinone + Water) Activity Coefficient Studies in Ternary Aqueous Solutions at 298.15 K: H2O + β-Cyclodextrin + Potassium Acetate and H2O + 18-Crown-6 + Hydroquinone Systems:	https://www.doi.org/10.1016/j.fluid.2016.08.040
Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Enthalpies of formation of dihydroxybenzenes revisited: Combining experimental and high-level ab initio data:	https://www.doi.org/10.1021/je800307g
	https://www.doi.org/10.1016/j.jct.2013.10.032

Solubility of 3,7,9,11-Tetraoxo-2,4,6,8,10-pentaaza[3.3.3]Propellane (TOPAP) in Different Pure Solvents at Temperatures between 273.15 and 318.15 K:	https://www.doi.org/10.1021/acs.jced.6b00349
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
Liquid Liquid Equilibria for Ternary Systems: Methyl Butyl Ketone + Phenol + Water and Methyl Butyl Ketone + Hydroquinone + Water at 298.15 K and 323.15 K:	https://www.doi.org/10.1021/je500532v
Experimental result and data correlation of liquid liquid equilibrium: methyl isopropyl ketone + o, m, p-dihydroxybenzene + water at 333.15 K, 343.15 K and 353.15 K:	https://www.doi.org/10.1016/j.jct.2018.08.041
Estimated Solubility Method:	http://pubs.acs.org/doi/suppl/10.1021/ci034243x/suppl_file/ci034243xsi20040112_053635.txt
Aqueous Solubility Prediction Method:	http://onschallenge.wikispaces.com/file/view/AqueousDataset002.xlsx/351826032/AqueousDa
Measurements of Liquid Liquid Equilibria for the Quaternary System 2-Methoxy-2-methylpropane + Phenol + Hydroquinone + Water at 313.15 K:	https://www.doi.org/10.1021/je400488x
KDB:	https://www.cheric.org/files/research/kdb/mol/mol864.mol
Measurement of enthalpy curves of phase change materials via DSC and T-History: When are both methods needed to estimate the behaviour of the bulk material in applications?:	https://www.doi.org/10.1016/j.tca.2014.09.022
Liquid Liquid Equilibria for Ternary (Methyl Propyl Ketone + Hydroquinone + Water) Systems at 298.15, 318.15, and 333.15 K:	https://www.doi.org/10.1021/acs.jced.7b01127
Ternary and Quaternary Liquid Liquid Equilibria for Systems of Methyl Butyl Ketone + Water + Hydroquinone + Phenol at 313.2 K and Atmospheric Pressure:	https://www.doi.org/10.1021/acs.jced.5b00918
Vapor Pressure Characterization of Several Phenolics and Polyhydric Compounds by Knudsen Effusion Method:	https://www.doi.org/10.1021/je050293h
Effects of structural isomerism on solution behaviour of solutes: Apparent molar volumes and isentropic compression of catechol, resorcinal, and hydroquinone in aqueous solution at T = (288.15, 293.15, 298.15, 303.15, and 313.15) K:	https://www.doi.org/10.1016/j.jct.2010.04.018

Legend

chs:	Standard solid enthalpy of combustion
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
hfs:	Solid phase enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hfust:	Enthalpy of fusion at a given temperature
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
psub:	Sublimation pressure
rhol:	Liquid Density
rhos:	Solid Density
rinpol:	Non-polar retention indices
ripol:	Polar retention indices
sfust:	Entropy of fusion at a given temperature
sg:	Molar entropy at standard conditions

tb:	Normal Boiling Point Temperature
tbrp:	Boiling point at reduced pressure
tc:	Critical Temperature
tf:	Normal melting (fusion) point
tt:	Triple Point Temperature
vc:	Critical Volume

Latest version available from:
https://www.chemeo.com/cid/48-513-9/Hydroquinone.pdf
Generated by Cheméo on 2025-12-24 01:25:54.215049966 +0000 UTC m=+6287751.745090631.
Cheméo (https://www.chemeo.com) is the biggest free database of chemical and physical data for the process industry.