# 1,2-Octadecanediol

**Other names:** 1,2-Dihydroxyoctadecane
octadecane-1,2-diol
**Inchi:** InChI=1S/C18H38O2/c1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-18(20)17-19/h18-20H,2-1
**InchiKey:** XWAMHGPDZOVVND-UHFFFAOYSA-N
**Formula:** C18H38O2
**SMILES:** CCCCCCCCCCCCCCCCC(O)CO
**Mol. weight [g/mol]:** 286.49
**CAS:** 20294-76-2

## Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| gf | -175.40 | kJ/mol | Joback Method |
| hf | -724.59 | kJ/mol | Joback Method |
| hfus | 47.03 | kJ/mol | Joback Method |
| hvap | 88.63 | kJ/mol | Joback Method |
| log10ws | -6.00 | | Crippen Method |
| logp | 5.211 | | Crippen Method |
| mcvol | 276.220 | ml/mol | McGowan Method |
| pc | 1318.48 | kPa | Joback Method |
| tb | 795.16 | K | Joback Method |
| tc | 973.50 | K | Joback Method |
| tf | 353.65 ± 2.00 | K | NIST Webbook |
| vc | 1.075 | m3/kmol | Joback Method |

## Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 884.07 | J/mol×K | 795.16 | Joback Method |
| cpg | 901.11 | J/mol×K | 824.88 | Joback Method |
| cpg | 917.33 | J/mol×K | 854.61 | Joback Method |
| cpg | 932.75 | J/mol×K | 884.33 | Joback Method |
| cpg | 947.41 | J/mol×K | 914.05 | Joback Method |
| cpg | 961.35 | J/mol×K | 943.78 | Joback Method |
| cpg | 974.59 | J/mol×K | 973.50 | Joback Method |

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|---|---|---|---|---|
| dvisc | 0.0035420 | Pa×s | 399.26 | Joback Method |
| dvisc | 0.0005052 | Pa×s | 465.24 | Joback Method |
| dvisc | 0.0001169 | Pa×s | 531.23 | Joback Method |
| dvisc | 0.0000374 | Pa×s | 597.21 | Joback Method |
| dvisc | 0.0000150 | Pa×s | 663.19 | Joback Method |
| dvisc | 0.0000071 | Pa×s | 729.18 | Joback Method |
| dvisc | 0.0000038 | Pa×s | 795.16 | Joback Method |

# Correlations

| Information | Value |
|---|---|
| Property code | pvap |
| Equation | ln(Pvp) = A + B/(T + C) |
| Coeff. A | 2.65476e+01 |
| Coeff. B | -1.03217e+04 |
| Coeff. C | -1.26062e+02 |
| Temperature range (K), min. | 519.12 |
| Temperature range (K), max. | 612.11 |

# Sources

**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=C20294762&Units=SI

**The Yaws Handbook of Vapor Pressure:** https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure

**Crippen Method:** http://pubs.acs.org/doi/abs/10.1021/ci990307l

# 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

| | |
|---|---|
| **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 |
| **pvap:** | Vapor pressure |
| **tb:** | Normal Boiling Point Temperature |
| **tc:** | Critical Temperature |
| **tf:** | Normal melting (fusion) point |
| **vc:** | Critical Volume |