# 1,2-Decanediol

**Other names:** decane-1,2-diol
**Inchi:** InChI=1S/C10H22O2/c1-2-3-4-5-6-7-8-10(12)9-11/h10-12H,2-9H2,1H3
**InchiKey:** YSRSBDQINUMTIF-UHFFFAOYSA-N
**Formula:** C10H22O2
**SMILES:** CCCCCCCCC(O)CO
**Mol. weight [g/mol]:** 174.28
**CAS:** 1119-86-4

## Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| gf | -242.76 | kJ/mol | Joback Method |
| hf | -559.47 | kJ/mol | Joback Method |
| hfus | 26.31 | kJ/mol | Joback Method |
| hvap | 70.82 | kJ/mol | Joback Method |
| log10ws | -2.65 | | Crippen Method |
| logp | 2.090 | | Crippen Method |
| mcvol | 163.500 | ml/mol | McGowan Method |
| pc | 2535.37 | kPa | Joback Method |
| rinpol | 1419.00 | | NIST Webbook |
| tb | 528.20 | K | NIST Webbook |
| tc | 771.40 | K | Joback Method |
| tf | 321.65 ± 0.30 | K | NIST Webbook |
| vc | 0.627 | m3/kmol | Joback Method |

## Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 442.00 | J/mol×K | 612.12 | Joback Method |
| cpg | 453.83 | J/mol×K | 638.67 | Joback Method |
| cpg | 465.19 | J/mol×K | 665.21 | Joback Method |
| cpg | 476.08 | J/mol×K | 691.76 | Joback Method |
| cpg | 486.52 | J/mol×K | 718.31 | Joback Method |
| cpg | 496.52 | J/mol×K | 744.85 | Joback Method |
| cpg | 506.10 | J/mol×K | 771.40 | Joback Method |

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|---|---|---|---|---|
| dvisc | 0.0507965 | Pa×s | 309.10 | Joback Method |
| dvisc | 0.0059248 | Pa×s | 359.60 | Joback Method |
| dvisc | 0.0011731 | Pa×s | 410.11 | Joback Method |
| dvisc | 0.0003313 | Pa×s | 460.61 | Joback Method |
| dvisc | 0.0001201 | Pa×s | 511.11 | Joback Method |
| dvisc | 0.0000523 | Pa×s | 561.62 | Joback Method |
| dvisc | 0.0000261 | Pa×s | 612.12 | Joback Method |

# Correlations

| Information | Value |
|---|---|
| Property code | pvap |
| Equation | ln(Pvp) = A + B/(T + C) |
| Coeff. A | 1.81961e+01 |
| Coeff. B | -5.99207e+03 |
| Coeff. C | -9.49260e+01 |
| Temperature range (K), min. | 429.52 |
| Temperature range (K), max. | 559.98 |

# Sources

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

**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=C1119864&Units=SI

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

# 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 |
| **rinpol:** | Non-polar retention indices |
| **tb:** | Normal Boiling Point Temperature |
| **tc:** | Critical Temperature |
| **tf:** | Normal melting (fusion) point |
| **vc:** | Critical Volume |