# Naphthalene, 1,1'-(1,10-decanediyl)bis-

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|---|---|
| **Other names:** | 1,10-Di(1-naphthyl)decane |
| | 1,10-Di(«alpha»-naphthyl)decane |
| | 1,10-Di(Â«alphaÂ»-naphthyl)decane |
| **Inchi:** | InChI=1S/C30H34/c1(3-5-7-15-25-19-13-21-27-17-9-11-23-29(25)27)2-4-6-8-16-26-20-14 |
| **InchiKey:** | MJOQAHPAUSIVEG-UHFFFAOYSA-N |
| **Formula:** | C30H34 |
| **SMILES:** | c1ccc2c(CCCCCCCCCCc3cccc4ccccc34)cccc2c1 |
| **Mol. weight [g/mol]:** | 394.59 |
| **CAS:** | 40339-27-3 |

## Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| gf | 620.58 | kJ/mol | Joback Method |
| hf | 169.73 | kJ/mol | Joback Method |
| hfus | 54.80 | kJ/mol | Joback Method |
| hvap | 91.53 | kJ/mol | Joback Method |
| log10ws | -10.85 | | Crippen Method |
| logp | 8.899 | | Crippen Method |
| mcvol | 347.120 | ml/mol | McGowan Method |
| pc | 1129.10 | kPa | Joback Method |
| tb | 987.08 | K | Joback Method |
| tc | 1221.37 | K | Joback Method |
| tf | 313.20 ± 2.00 | K | NIST Webbook |
| tf | 313.00 ± 0.50 | K | NIST Webbook |
| vc | 1.343 | m3/kmol | Joback Method |

## Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 1239.70 | J/mol×K | 1221.37 | Joback Method |
| cpg | 1136.15 | J/mol×K | 987.08 | Joback Method |
| cpg | 1154.65 | J/mol×K | 1026.13 | Joback Method |
| cpg | 1172.41 | J/mol×K | 1065.18 | Joback Method |
| cpg | 1189.61 | J/mol×K | 1104.22 | Joback Method |

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|---|---|---|---|---|
| cpg | 1206.44 | J/mol×K | 1143.27 | Joback Method |
| cpg | 1223.08 | J/mol×K | 1182.32 | Joback Method |
| dvisc | 0.0001194 | Pa×s | 987.08 | Joback Method |
| dvisc | 0.0007578 | Pa×s | 571.14 | Joback Method |
| dvisc | 0.0004714 | Pa×s | 640.46 | Joback Method |
| dvisc | 0.0003218 | Pa×s | 709.79 | Joback Method |
| dvisc | 0.0002351 | Pa×s | 779.11 | Joback Method |
| dvisc | 0.0001808 | Pa×s | 848.43 | Joback Method |
| dvisc | 0.0001446 | Pa×s | 917.76 | Joback Method |
| hvapt | 108.60 | kJ/mol | 578.00 | NIST Webbook |

# Correlations

| Information | Value |
|---|---|
| Property code | pvap |
| Equation | ln(Pvp) = A + B/(T + C) |
| Coeff. A | 2.67095e+01 |
| Coeff. B | -1.49142e+04 |
| Coeff. C | -5.17900e+01 |
| Temperature range (K), min. | 616.25 |
| Temperature range (K), max. | 748.78 |

# Sources

**McGowan Method:** http://link.springer.com/article/10.1007/BF02311772

**NIST Webbook:** http://webbook.nist.gov/cgi/cbook.cgi?ID=C40339273&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

**Crippen Method:** https://www.chemeo.com/doc/models/crippen_log10ws

**Joback Method:** https://en.wikipedia.org/wiki/Joback_method

# Legend

**cpg:** Ideal gas heat capacity

**dvisc:** Dynamic viscosity

**gf:** Standard Gibbs free energy of formation

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|---|---|
| **hf:** | Enthalpy of formation at standard conditions |
| **hfus:** | Enthalpy of fusion at standard conditions |
| **hvap:** | Enthalpy of vaporization at standard conditions |
| **hvapt:** | Enthalpy of vaporization at a given temperature |
| **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 |

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