# 7,8-Dioxabicyclo[4.2.2]decane

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|---|---|
| **Other names:** | 7,8-Dioxabicyclo(4,2,2)decane |
| **Inchi:** | InChI=1S/C8H14O2/c1-2-4-8-6-5-7(3-1)9-10-8/h7-8H,1-6H2 |
| **InchiKey:** | GRPFSWFCSGHVIB-UHFFFAOYSA-N |
| **Formula:** | C8H14O2 |
| **SMILES:** | C1CCC2CCC(C1)OO2 |
| **Mol. weight [g/mol]:** | 142.20 |
| **CAS:** | 52965-57-8 |

## Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| gf | -82.66 | kJ/mol | Joback Method |
| hf | -351.49 | kJ/mol | Joback Method |
| hfus | 20.30 | kJ/mol | Joback Method |
| hvap | 42.94 | kJ/mol | Joback Method |
| ie | 9.06 | eV | NIST Webbook |
| ie | 9.05 | eV | NIST Webbook |
| log10ws | -2.35 | | Crippen Method |
| logp | 2.040 | | Crippen Method |
| mcvol | 113.600 | ml/mol | McGowan Method |
| pc | 3699.95 | kPa | Joback Method |
| tb | 466.90 | K | Joback Method |
| tc | 693.20 | K | Joback Method |
| tf | 254.86 | K | Joback Method |
| vc | 0.407 | m3/kmol | Joback Method |

## Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 261.74 | J/mol×K | 466.90 | Joback Method |
| cpg | 280.75 | J/mol×K | 504.62 | Joback Method |
| cpg | 298.58 | J/mol×K | 542.33 | Joback Method |
| cpg | 315.26 | J/mol×K | 580.05 | Joback Method |
| cpg | 330.84 | J/mol×K | 617.77 | Joback Method |
| cpg | 345.38 | J/mol×K | 655.48 | Joback Method |

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|---|---|---|---|---|
| cpg | 358.92 | J/mol×K | 693.20 | Joback Method |
| dvisc | 0.0056174 | Pa×s | 254.86 | Joback Method |
| dvisc | 0.0029622 | Pa×s | 290.20 | Joback Method |
| dvisc | 0.0017949 | Pa×s | 325.54 | Joback Method |
| dvisc | 0.0011997 | Pa×s | 360.88 | Joback Method |
| dvisc | 0.0008616 | Pa×s | 396.22 | Joback Method |
| dvisc | 0.0006533 | Pa×s | 431.56 | Joback Method |
| dvisc | 0.0005165 | Pa×s | 466.90 | Joback Method |

# Sources

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|---|---|
| **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=C52965578&Units=SI |
| **Crippen Method:** | http://pubs.acs.org/doi/abs/10.1021/ci990307l |
| **Crippen Method:** | https://www.chemeo.com/doc/models/crippen_log10ws |

# Legend

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|---|---|
| **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 |
| **ie:** | Ionization energy |
| **log10ws:** | Log10 of Water solubility in mol/l |
| **logp:** | Octanol/Water partition coefficient |
| **mcvol:** | McGowan's characteristic volume |
| **pc:** | Critical Pressure |
| **tb:** | Normal Boiling Point Temperature |
| **tc:** | Critical Temperature |
| **tf:** | Normal melting (fusion) point |
| **vc:** | Critical Volume |

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