# 1,2-Di(methyl-d3)benzene-d4

**Other names:** (2H10)-o-xylene
O-xylene-d10
**Inchi:** InChI=1S/C8H10/c1-7-5-3-4-6-8(7)2/h3-6H,1-2H3/i1D3,2D3,3D,4D,5D,6D
**InchiKey:** CTQNGGLPUBDAKN-ZGYYUIRESA-N
**Formula:** C8D10
**SMILES:** Cc1ccccc1C
**Mol. weight [g/mol]:** 116.23
**CAS:** 56004-61-6

## Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| gf | 119.26 | kJ/mol | Joback Method |
| hf | 16.61 | kJ/mol | Joback Method |
| hfus | 10.13 | kJ/mol | Joback Method |
| hvap | 43.00 | kJ/mol | NIST Webbook |
| log10ws | -2.42 | | Crippen Method |
| logp | 2.303 | | Crippen Method |
| mcvol | 99.820 | ml/mol | McGowan Method |
| pc | 3585.64 | kPa | Joback Method |
| tb | 414.10 | K | Joback Method |
| tc | 625.12 | K | Joback Method |
| tf | 218.86 | K | Joback Method |
| vc | 0.376 | m3/kmol | Joback Method |

## Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 240.89 | J/mol×K | 625.12 | Joback Method |
| cpg | 231.65 | J/mol×K | 589.95 | Joback Method |
| cpg | 221.85 | J/mol×K | 554.78 | Joback Method |
| cpg | 211.46 | J/mol×K | 519.61 | Joback Method |
| cpg | 200.48 | J/mol×K | 484.44 | Joback Method |
| cpg | 188.87 | J/mol×K | 449.27 | Joback Method |
| cpg | 176.61 | J/mol×K | 414.10 | Joback Method |

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|---|---|---|---|---|
| dvisc | 0.0020700 | Pa×s | 218.86 | Joback Method |
| dvisc | 0.0002175 | Pa×s | 414.10 | Joback Method |
| dvisc | 0.0002698 | Pa×s | 381.56 | Joback Method |
| dvisc | 0.0003483 | Pa×s | 349.02 | Joback Method |
| dvisc | 0.0004740 | Pa×s | 316.48 | Joback Method |
| dvisc | 0.0006923 | Pa×s | 283.94 | Joback Method |
| dvisc | 0.0011152 | Pa×s | 251.40 | Joback Method |
| hvapt | 43.00 | kJ/mol | 298.00 | Enthalpies of Vaporization and Vapor Pressures of Some Deuterated Hydrocarbons. Liquid-Vapor Pressure Isotope Effects |

# Sources

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|---|---|
| **NIST Webbook:** | http://webbook.nist.gov/cgi/cbook.cgi?ID=C56004616&Units=SI |
| **Crippen Method:** | http://pubs.acs.org/doi/abs/10.1021/ci990307l |
| **Crippen Method:** | https://www.chemeo.com/doc/models/crippen_log10ws |
| **Enthalpies of Vaporization and Vapor Pressures of Some Deuterated Hydrocarbons. Liquid-Vapor Pressure Isotope Effects:** | https://www.doi.org/10.1021/je800091s |
| **Joback Method:** | https://en.wikipedia.org/wiki/Joback_method |
| **McGowan Method:** | http://link.springer.com/article/10.1007/BF02311772 |

# 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 |
| **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 |
| **tb:** | Normal Boiling Point Temperature |
| **tc:** | Critical Temperature |

**tf:** Normal melting (fusion) point

**vc:** Critical Volume