# Biphenyl-4-carboxylic acid

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|---|---|
| **Other names:** | 4-Biphenylcarboxylic acid |
| | Biphenylcarboxylic acid-(4) |
| | [1,1'-Biphenyl]-4-carboxylic acid |
| | p-Phenylbenzoic acid |
| | Diphenyl-4-carboxylic acid |
| | Para phenyl benzoic acid |
| | 4-Carboxy-1,1'-biphenyl |
| | 4-Carboxybiphenyl |
| | 4-Diphenylcarboxylic acid |
| | 4-Phenylbenzoic acid |
| | NSC 23040 |
| | Benzoic acid, p-phenyl- |
| **Inchi:** | InChI=1S/C13H10O2/c14-13(15)12-8-6-11(7-9-12)10-4-2-1-3-5-10/h1-9H,(H,14,15) |
| **InchiKey:** | NNJMFJSKMRYHSR-UHFFFAOYSA-N |
| **Formula:** | C13H10O2 |
| **SMILES:** | O=C(O)c1ccc(-c2ccccc2)cc1 |
| **Mol. weight [g/mol]:** | 198.22 |
| **CAS:** | 92-92-2 |

# Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| gf | 8.03 | kJ/mol | Joback Method |
| hf | -114.87 | kJ/mol | Joback Method |
| hfus | 22.81 | kJ/mol | Joback Method |
| hsub | 127.50 ± 4.10 | kJ/mol | NIST Webbook |
| hvap | 73.17 | kJ/mol | Joback Method |
| log10ws | -4.13 | | Crippen Method |
| logp | 3.052 | | Crippen Method |
| mcvol | 153.950 | ml/mol | McGowan Method |
| pc | 3611.55 | kPa | Joback Method |
| tb | 701.23 | K | Joback Method |
| tc | 931.94 | K | Joback Method |
| tf | 483.00 ± 5.00 | K | NIST Webbook |
| vc | 0.573 | m3/kmol | Joback Method |

# Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 389.95 | J/mol×K | 701.23 | Joback Method |
| cpg | 401.41 | J/mol×K | 739.68 | Joback Method |
| cpg | 411.94 | J/mol×K | 778.13 | Joback Method |
| cpg | 421.61 | J/mol×K | 816.58 | Joback Method |
| cpg | 430.47 | J/mol×K | 855.04 | Joback Method |
| cpg | 438.58 | J/mol×K | 893.49 | Joback Method |
| cpg | 445.99 | J/mol×K | 931.94 | Joback Method |
| dvisc | 0.0017023 | Pa×s | 412.38 | Joback Method |
| dvisc | 0.0006982 | Pa×s | 460.52 | Joback Method |
| dvisc | 0.0003390 | Pa×s | 508.66 | Joback Method |
| dvisc | 0.0001865 | Pa×s | 556.81 | Joback Method |
| dvisc | 0.0001128 | Pa×s | 604.95 | Joback Method |
| dvisc | 0.0000735 | Pa×s | 653.09 | Joback Method |
| dvisc | 0.0000508 | Pa×s | 701.23 | Joback Method |

# Sources

**NIST Webbook:** http://webbook.nist.gov/cgi/cbook.cgi?ID=C92922&Units=SI
**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

# 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
**hsub:** Enthalpy of sublimation at standard conditions
**hvap:** Enthalpy of vaporization at standard conditions
**log10ws:** Log10 of Water solubility in mol/l

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|---|---|
| **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 |