# Benzene, 1,1'-(1,1,2,2-tetrafluoro-1,2-ethanediyl)bis-

**Other names:** Bibenzyl, «alpha»,«alpha»,«alpha»',«alpha»'-tetrafluoro-
«alpha»,«alpha»,«alpha»',«alpha»'-Tetrafluorobibenzyl
1,1,2,2-Tetrafluoro-1,2-diphenylethane
1,2-Diphenyltetrafluoroethane

**Inchi:** InChI=1S/C14H10F4/c15-13(16,11-7-3-1-4-8-11)14(17,18)12-9-5-2-6-10-12/h1-10H

**InchiKey:** OVEWNBYMFPGNRR-UHFFFAOYSA-N

**Formula:** C14H10F4

**SMILES:** FC(F)(c1ccccc1)C(F)(F)c1ccccc1

**Mol. weight [g/mol]:** 254.22

**CAS:** 425-32-1

## Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| chs | -6870.70 ± 2.00 | kJ/mol | NIST Webbook |
| gf | -481.74 | kJ/mol | Joback Method |
| hf | -689.00 ± 2.80 | kJ/mol | NIST Webbook |
| hfs | -790.80 ± 2.00 | kJ/mol | NIST Webbook |
| hfus | 17.59 | kJ/mol | Joback Method |
| hsub | 101.80 ± 1.90 | kJ/mol | NIST Webbook |
| hsub | 101.80 | kJ/mol | NIST Webbook |
| hvap | 45.45 | kJ/mol | Joback Method |
| log10ws | -4.63 | | Crippen Method |
| logp | 4.570 | | Crippen Method |
| mcvol | 167.680 | ml/mol | McGowan Method |
| pc | 2398.22 | kPa | Joback Method |
| tb | 563.70 | K | Joback Method |
| tc | 784.94 | K | Joback Method |
| tf | 307.58 | K | Joback Method |
| vc | 0.653 | m3/kmol | Joback Method |

## Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 411.56 | J/mol×K | 563.70 | Joback Method |

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|---|---|---|---|---|
| cpg | 427.99 | J/mol×K | 600.57 | Joback Method |
| cpg | 442.96 | J/mol×K | 637.45 | Joback Method |
| cpg | 456.58 | J/mol×K | 674.32 | Joback Method |
| cpg | 468.96 | J/mol×K | 711.19 | Joback Method |
| cpg | 480.21 | J/mol×K | 748.06 | Joback Method |
| cpg | 490.45 | J/mol×K | 784.94 | Joback Method |
| hfust | 28.83 | kJ/mol | 399.20 | NIST Webbook |

# 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=C425321&Units=SI |

# Legend

| | |
|---|---|
| **chs:** | Standard solid enthalpy of combustion |
| **cpg:** | Ideal gas heat capacity |
| **gf:** | Standard Gibbs free energy of formation |
| **hf:** | Enthalpy of formation at standard conditions |
| **hfs:** | Solid phase enthalpy of formation at standard conditions |
| **hfus:** | Enthalpy of fusion at standard conditions |
| **hfust:** | Enthalpy of fusion at a given temperature |
| **hsub:** | Enthalpy of sublimation 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 |
| **tb:** | Normal Boiling Point Temperature |
| **tc:** | Critical Temperature |
| **tf:** | Normal melting (fusion) point |
| **vc:** | Critical Volume |