# 11H-Benzo[b]fluorene

**Other names:** 2,3-Benzfluorene
2,3-Benzofluorene
benzo[b]fluorene
**Inchi:** InChI=1S/C17H12/c1-2-6-13-11-17-15(9-12(13)5-1)10-14-7-3-4-8-16(14)17/h1-9,11H,10
**InchiKey:** HAPOJKSPCGLOOD-UHFFFAOYSA-N
**Formula:** C17H12
**SMILES:** c1ccc2c(c1)Cc1cc3ccccc3cc1-2
**Mol. weight [g/mol]:** 216.28
**CAS:** 243-17-4

# Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| gf | 487.50 | kJ/mol | Joback Method |
| hf | 340.97 | kJ/mol | Joback Method |
| hfus | 24.98 | kJ/mol | Joback Method |
| hvap | 97.50 ± 3.90 | kJ/mol | NIST Webbook |
| log10ws | -8.04 | | Aqueous Solubility Prediction Method |
| logp | 4.411 | | Crippen Method |
| mcvol | 172.550 | ml/mol | McGowan Method |
| pc | 2844.44 | kPa | Joback Method |
| tb | 674.20 | K | NIST Webbook |
| tb | 674.50 ± 0.50 | K | NIST Webbook |
| tc | 937.21 | K | Joback Method |
| tf | 481.50 ± 0.50 | K | NIST Webbook |
| tf | 489.70 ± 0.40 | K | NIST Webbook |
| tf | 483.45 ± 1.00 | K | NIST Webbook |
| vc | 0.667 | m3/kmol | Joback Method |

# Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 467.14 | J/mol×K | 764.74 | Joback Method |
| cpg | 479.68 | J/mol×K | 807.86 | Joback Method |

| | | | | |
|---|---|---|---|---|
| cpg | 491.43 | J/mol×K | 850.98 | Joback Method |
| cpg | 502.61 | J/mol×K | 894.10 | Joback Method |
| cpg | 513.42 | J/mol×K | 937.21 | Joback Method |
| cpg | 438.86 | J/mol×K | 678.51 | Joback Method |
| cpg | 453.60 | J/mol×K | 721.63 | Joback Method |
| dvisc | 0.0011386 | Pa×s | 596.90 | Joback Method |
| dvisc | 0.0010415 | Pa×s | 637.70 | Joback Method |
| dvisc | 0.0014198 | Pa×s | 515.28 | Joback Method |
| dvisc | 0.0016313 | Pa×s | 474.48 | Joback Method |
| dvisc | 0.0019238 | Pa×s | 433.67 | Joback Method |
| dvisc | 0.0009629 | Pa×s | 678.51 | Joback Method |
| dvisc | 0.0012612 | Pa×s | 556.09 | Joback Method |
| hfust | 23.40 | kJ/mol | 489.70 | NIST Webbook |
| hfust | 23.40 | kJ/mol | 489.70 | NIST Webbook |
| hfust | 23.40 | kJ/mol | 489.70 | NIST Webbook |
| hsubt | 111.20 | kJ/mol | 383.00 | NIST Webbook |
| hsubt | 119.30 ± 1.30 | kJ/mol | 371.00 | NIST Webbook |
| hvapt | 84.70 | kJ/mol | 398.00 | NIST Webbook |
| pvap | 0.19 | kPa | 450.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 1.00 | kPa | 490.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 0.69 | kPa | 480.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 2.00 | kPa | 510.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |

| | | | | |
|---|---|---|---|---|
| pvap | 0.46 | kPa | 470.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 0.30 | kPa | 460.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 0.12 | kPa | 440.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 1.43 | kPa | 500.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 0.07 | kPa | 430.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 0.04 | kPa | 420.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 0.02 | kPa | 410.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |

| | | | | |
|---|---|---|---|---|
| pvap | 0.01 | kPa | 400.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 6.63e-03 | kPa | 390.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 3.29e-03 | kPa | 380.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 1.56e-03 | kPa | 370.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 6.97e-04 | kPa | 360.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 2.94e-04 | kPa | 350.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 1.16e-04 | kPa | 340.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |

| | | | | |
|---|---|---|---|---|
| pvap | 1.47e-05 | kPa | 320.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 4.60e-06 | kPa | 310.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 1.31e-06 | kPa | 300.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 1.03e-06 | kPa | 298.15 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| pvap | 4.30e-05 | kPa | 330.00 | Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons |
| sfust | 47.80 | J/mol×K | 489.70 | NIST Webbook |

# Sources

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

**NIST Webbook:** http://webbook.nist.gov/cgi/cbook.cgi?ID=C243174&Units=SI

**Crippen Method:** http://pubs.acs.org/doi/abs/10.1021/ci990307l

**Hypothetical Thermodynamic Properties. Subcooled Vaporization Enthalpies and Vapor Pressures of Polyaromatic Hydrocarbons:** https://www.doi.org/10.1021/je800300x

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

**Aqueous Solubility Prediction Method:** http://onschallenge.wikispaces.com/file/view/AqueousDataset002.xlsx/351826032/AqueousDa

# 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 |
| **hfust:** | Enthalpy of fusion at a given temperature |
| **hsubt:** | Enthalpy of sublimation at a given temperature |
| **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 |
| **sfust:** | Entropy of fusion at a given temperature |
| **tb:** | Normal Boiling Point Temperature |
| **tc:** | Critical Temperature |
| **tf:** | Normal melting (fusion) point |
| **vc:** | Critical Volume |