# di-n-Decylamine

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|---|---|
| **Other names:** | 1-Decanamine, N-decyl- |
| | Armeen 2-10 |
| | Didecylamine |
| | Radiamine 6310 |
| **Inchi:** | InChI=1S/C20H43N/c1-3-5-7-9-11-13-15-17-19-21-20-18-16-14-12-10-8-6-4-2/h21H,3-20 |
| **InchiKey:** | GMTCPFCMAHMEMT-UHFFFAOYSA-N |
| **Formula:** | C20H43N |
| **SMILES:** | CCCCCCCCCCNCCCCCCCCCC |
| **Mol. weight [g/mol]:** | 297.56 |
| **CAS:** | 1120-49-6 |

# Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| gf | 206.91 | kJ/mol | Joback Method |
| hf | -402.66 | kJ/mol | Joback Method |
| hfus | 52.65 | kJ/mol | Joback Method |
| hvap | 66.55 | kJ/mol | Joback Method |
| log10ws | -7.38 | | Crippen Method |
| logp | 6.857 | | Crippen Method |
| mcvol | 302.640 | ml/mol | McGowan Method |
| pc | 1024.00 | kPa | Joback Method |
| rinpol | 2142.00 | | NIST Webbook |
| tb | 637.15 ± 3.00 | K | NIST Webbook |
| tc | 873.43 | K | Joback Method |
| tf | 315.40 ± 2.00 | K | NIST Webbook |
| tf | 305.75 ± 0.50 | K | NIST Webbook |
| tf | 319.65 ± 3.00 | K | NIST Webbook |
| tf | 321.15 ± 5.00 | K | NIST Webbook |
| tf | 305.75 ± 1.00 | K | NIST Webbook |
| tf | 314.65 ± 1.00 | K | NIST Webbook |
| tf | 320.65 ± 5.00 | K | NIST Webbook |
| vc | 1.190 | m3/kmol | Joback Method |

# Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 1005.68 | J/mol×K | 845.72 | Joback Method |
| cpg | 911.14 | J/mol×K | 707.17 | Joback Method |
| cpg | 931.80 | J/mol×K | 734.88 | Joback Method |
| cpg | 951.55 | J/mol×K | 762.59 | Joback Method |
| cpg | 970.43 | J/mol×K | 790.30 | Joback Method |
| cpg | 988.46 | J/mol×K | 818.01 | Joback Method |
| cpg | 1022.11 | J/mol×K | 873.43 | Joback Method |
| hvapt | 70.90 | kJ/mol | 605.50 | NIST Webbook |

# Pressure Dependent Properties

| Property code | Value | Unit | Pressure [kPa] | Source |
|---|---|---|---|---|
| tbrp | 452.70 | K | 0.30 | NIST Webbook |

# Correlations

| Information | Value |
|---|---|
| Property code | pvap |
| Equation | ln(Pvp) = A + B/(T + C) |
| Coeff. A | 1.53657e+01 |
| Coeff. B | -5.59144e+03 |
| Coeff. C | -1.16888e+02 |
| Temperature range (K), min. | 487.72 |
| Temperature range (K), max. | 673.02 |

# Sources

**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

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|---|---|
| **NIST Webbook:** | http://webbook.nist.gov/cgi/cbook.cgi?ID=C1120496&Units=SI |
| **The Yaws Handbook of Vapor Pressure:** | https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure |
| **Crippen Method:** | http://pubs.acs.org/doi/abs/10.1021/ci990307l |

# Legend

| | |
|---|---|
| **cpg:** | Ideal gas heat capacity |
| **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 |
| **pvap:** | Vapor pressure |
| **rinpol:** | Non-polar retention indices |
| **tb:** | Normal Boiling Point Temperature |
| **tbrp:** | Boiling point at reduced pressure |
| **tc:** | Critical Temperature |
| **tf:** | Normal melting (fusion) point |
| **vc:** | Critical Volume |