# 1,5-Cyclooctadiene, (Z,Z)-

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|---|---|
| **Other names:** | (Z,Z)-1,5-Cyclooctadiene |
| | (Z,Z)-cycloocta-1,5-diene |
| | 1,5-Cyclooctadiene |
| | COD |
| | cis,cis-1,5-Cyclooctadiene |
| | cis,cis-Cycloocta-1,5-diene |
| **Inchi:** | InChI=1S/C8H12/c1-2-4-6-8-7-5-3-1/h1-2,7-8H,3-6H2/b2-1-,8-7- |
| **InchiKey:** | VYXHVRARDIDEHS-QGTKBVGQSA-N |
| **Formula:** | C8H12 |
| **SMILES:** | C1=CCCC=CCC1 |
| **Mol. weight [g/mol]:** | 108.18 |
| **CAS:** | 1552-12-1 |

# Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| chl | -4920.80 ± 1.30 | kJ/mol | NIST Webbook |
| chl | -4880.60 | kJ/mol | NIST Webbook |
| gf | 84.36 | kJ/mol | Joback Method |
| hf | 101.00 ± 1.40 | kJ/mol | NIST Webbook |
| hfl | 57.70 ± 1.40 | kJ/mol | NIST Webbook |
| hfus | 5.48 | kJ/mol | Joback Method |
| hvap | 41.00 | kJ/mol | NIST Webbook |
| hvap | 43.40 ± 0.10 | kJ/mol | NIST Webbook |
| hvap | 43.30 | kJ/mol | NIST Webbook |
| hvap | 43.39 | kJ/mol | NIST Webbook |
| log10ws | -2.77 | | Crippen Method |
| logp | 2.673 | | Crippen Method |
| mcvol | 104.120 | ml/mol | McGowan Method |
| pc | 3782.33 | kPa | Joback Method |
| rinpol | 959.00 | | NIST Webbook |
| rinpol | 926.00 | | NIST Webbook |
| rinpol | 923.00 | | NIST Webbook |
| rinpol | 915.00 | | NIST Webbook |
| rinpol | 907.00 | | NIST Webbook |
| rinpol | 915.00 | | NIST Webbook |
| rinpol | 903.00 | | NIST Webbook |
| rinpol | 931.10 | | NIST Webbook |

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|---|---|---|---|
| rinpol | 918.00 | | NIST Webbook |
| rinpol | 923.00 | | NIST Webbook |
| rinpol | 915.00 | | NIST Webbook |
| rinpol | 917.00 | | NIST Webbook |
| rinpol | 949.00 | | NIST Webbook |
| rinpol | 928.00 | | NIST Webbook |
| rinpol | 926.00 | | NIST Webbook |
| rinpol | 871.00 | | NIST Webbook |
| rinpol | 948.00 | | NIST Webbook |
| rinpol | 917.00 | | NIST Webbook |
| rinpol | 917.00 | | NIST Webbook |
| rinpol | 144.40 | | NIST Webbook |
| rinpol | 946.00 | | NIST Webbook |
| rinpol | 911.00 | | NIST Webbook |
| ripol | 1188.00 | | NIST Webbook |
| tb | 421.00 ± 2.00 | K | NIST Webbook |
| tb | 420.00 ± 2.00 | K | NIST Webbook |
| tc | 637.21 | K | Joback Method |
| tf | 203.00 ± 5.00 | K | NIST Webbook |
| vc | 0.373 | m3/kmol | Joback Method |

# Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 183.96 | J/mol×K | 413.52 | Joback Method |
| cpg | 258.65 | J/mol×K | 599.93 | Joback Method |
| cpg | 245.48 | J/mol×K | 562.65 | Joback Method |
| cpg | 231.45 | J/mol×K | 525.37 | Joback Method |
| cpg | 216.53 | J/mol×K | 488.08 | Joback Method |
| cpg | 200.71 | J/mol×K | 450.80 | Joback Method |
| cpg | 270.98 | J/mol×K | 637.21 | Joback Method |
| dvisc | 0.0002081 | Pa×s | 413.52 | Joback Method |
| dvisc | 0.0003129 | Pa×s | 375.60 | Joback Method |
| dvisc | 0.0005156 | Pa×s | 337.69 | Joback Method |
| dvisc | 0.0009642 | Pa×s | 299.77 | Joback Method |
| dvisc | 0.0021612 | Pa×s | 261.85 | Joback Method |
| dvisc | 0.0063666 | Pa×s | 223.94 | Joback Method |
| dvisc | 0.0291355 | Pa×s | 186.02 | Joback Method |

# Correlations

| Information | Value |
|---|---|
| Property code | pvap |
| Equation | ln(Pvp) = A + B/(T + C) |
| Coeff. A | 1.43225e+01 |
| Coeff. B | -3.51233e+03 |
| Coeff. C | -5.90640e+01 |
| Temperature range (K), min. | 309.32 |
| Temperature range (K), max. | 448.84 |

# Sources

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|---|---|
| **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=C1552121&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 |
| **Crippen Method:** | https://www.chemeo.com/doc/models/crippen_log10ws |

# Legend

| | |
|---|---|
| **chl:** | Standard liquid enthalpy of combustion |
| **cpg:** | Ideal gas heat capacity |
| **dvisc:** | Dynamic viscosity |
| **gf:** | Standard Gibbs free energy of formation |
| **hf:** | Enthalpy of formation at standard conditions |
| **hfl:** | Liquid phase enthalpy of formation at standard conditions |
| **hfus:** | Enthalpy of fusion 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 |
| **pvap:** | Vapor pressure |
| **rinpol:** | Non-polar retention indices |

| | |
|---|---|
| **ripol:** | Polar retention indices |
| **tb:** | Normal Boiling Point Temperature |
| **tc:** | Critical Temperature |
| **tf:** | Normal melting (fusion) point |
| **vc:** | Critical Volume |