# Cyclohexane, 1,1,3,5-tetramethyl-, cis-

**Other names:** 1,1,3,5-Tetramethylcyclohexane, (Z)-
cis-1,1,3,5-Tetramethylcyclohexane
**Inchi:** InChI=1S/C10H20/c1-8-5-9(2)7-10(3,4)6-8/h8-9H,5-7H2,1-4H3/t8-,9+
**InchiKey:** WOJSMJIXPQLESQ-DTORHVGOSA-N
**Formula:** C10H20
**SMILES:** CC1CC(C)CC(C)(C)C1
**Mol. weight [g/mol]:** 140.27
**CAS:** 50876-32-9

## Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| gf | 36.86 | kJ/mol | Joback Method |
| hf | -220.85 | kJ/mol | Joback Method |
| hfus | 9.33 | kJ/mol | Joback Method |
| hvap | 36.51 | kJ/mol | Joback Method |
| log10ws | -3.18 | | Crippen Method |
| logp | 3.469 | | Crippen Method |
| mcvol | 140.900 | ml/mol | McGowan Method |
| pc | 2515.07 | kPa | Joback Method |
| rinpol | 908.00 | | NIST Webbook |
| rinpol | 908.00 | | NIST Webbook |
| tb | 425.60 ± 1.00 | K | NIST Webbook |
| tb | 425.11 ± 0.20 | K | NIST Webbook |
| tb | 425.70 | K | NIST Webbook |
| tc | 643.42 | K | Joback Method |
| tf | 225.26 | K | Joback Method |
| vc | 0.524 | m3/kmol | Joback Method |

## Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 300.31 | J/mol×K | 438.65 | Joback Method |
| cpg | 321.00 | J/mol×K | 472.78 | Joback Method |
| cpg | 340.50 | J/mol×K | 506.91 | Joback Method |

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|---|---|---|---|---|
| cpg | 358.88 | J/mol×K | 541.03 | Joback Method |
| cpg | 376.24 | J/mol×K | 575.16 | Joback Method |
| cpg | 392.65 | J/mol×K | 609.29 | Joback Method |
| cpg | 408.21 | J/mol×K | 643.42 | Joback Method |

# Correlations

| Information | Value |
|---|---|
| Property code | pvap |
| Equation | ln(Pvp) = A + B/(T + C) |
| Coeff. A | 1.43628e+01 |
| Coeff. B | -3.56863e+03 |
| Coeff. C | -5.94810e+01 |
| Temperature range (K), min. | 313.02 |
| Temperature range (K), max. | 453.74 |

# 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=C50876329&Units=SI

**The Yaws Handbook of Vapor Pressure:** https://www.sciencedirect.com/book/9780128029992/the-yaws-handbook-of-vapor-pressure

# 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

**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 |
| **tc:** | Critical Temperature |
| **tf:** | Normal melting (fusion) point |
| **vc:** | Critical Volume |