# 1,1,2,2-Cyclopropane-tetracarbonitrile

**Other names:** 1,1,2,2-Tetracyanocyclopropane
**Inchi:** InChI=1S/C7H2N4/c8-2-6(3-9)1-7(6,4-10)5-11/h1H2
**InchiKey:** PSDKLXIWEMMSLZ-UHFFFAOYSA-N
**Formula:** C7H2N4
**SMILES:** N#CC1(C#N)CC1(C#N)C#N
**Mol. weight [g/mol]:** 142.12
**CAS:** 2424-32-0

## Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| chs | -3639.00 ± 10.00 | kJ/mol | NIST Webbook |
| gf | 582.84 | kJ/mol | Joback Method |
| hf | 554.65 | kJ/mol | Joback Method |
| hfs | 596.00 ± 10.00 | kJ/mol | NIST Webbook |
| hfus | 6.52 | kJ/mol | Joback Method |
| hvap | 70.39 | kJ/mol | Joback Method |
| log10ws | -1.63 | | Crippen Method |
| logp | 0.457 | | Crippen Method |
| mcvol | 104.150 | ml/mol | McGowan Method |
| pc | 3076.16 | kPa | Joback Method |
| tb | 770.43 | K | Joback Method |
| tc | 1032.46 | K | Joback Method |
| tf | 490.11 | K | Joback Method |
| vc | 0.483 | m3/kmol | Joback Method |

## Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 238.32 | J/mol×K | 770.43 | Joback Method |
| cpg | 244.56 | J/mol×K | 814.10 | Joback Method |
| cpg | 251.87 | J/mol×K | 857.77 | Joback Method |
| cpg | 260.61 | J/mol×K | 901.44 | Joback Method |
| cpg | 271.13 | J/mol×K | 945.12 | Joback Method |
| cpg | 283.80 | J/mol×K | 988.79 | Joback Method |

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|---|---|---|---|---|
| cpg | 298.96 | J/mol×K | 1032.46 | Joback Method |

# Sources

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|---|---|
| **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=C2424320&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 |
| **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 |