# Glutaric acid, di(2-norbornyl) ester

**Inchi:** InChI=1S/C19H28O4/c20-18(22-16-10-12-4-6-14(16)8-12)2-1-3-19(21)23-17-11-13-5-7-15(17)9-13
**InchiKey:** QTDRNQDUODEKEV-UHFFFAOYSA-N
**Formula:** C19H28O4
**SMILES:** O=C(CCCC(=O)OC1CC2CCC1C2)OC1CC2CCC1C2
**Mol. weight [g/mol]:** 320.42

## Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| gf | -155.36 | kJ/mol | Joback Method |
| hf | -686.89 | kJ/mol | Joback Method |
| hfus | 41.02 | kJ/mol | Joback Method |
| hvap | 75.58 | kJ/mol | Joback Method |
| log10ws | -4.34 | | Crippen Method |
| logp | 3.620 | | Crippen Method |
| mcvol | 250.010 | ml/mol | McGowan Method |
| pc | 1671.43 | kPa | Joback Method |
| rinpol | 2417.00 | | NIST Webbook |
| tb | 812.86 | K | Joback Method |
| tc | 1028.63 | K | Joback Method |
| tf | 504.45 | K | Joback Method |
| vc | 0.958 | m3/kmol | Joback Method |

## Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 860.49 | J/mol×K | 812.86 | Joback Method |
| cpg | 947.42 | J/mol×K | 992.67 | Joback Method |
| cpg | 932.16 | J/mol×K | 956.71 | Joback Method |
| cpg | 915.93 | J/mol×K | 920.74 | Joback Method |
| cpg | 898.65 | J/mol×K | 884.78 | Joback Method |
| cpg | 880.20 | J/mol×K | 848.82 | Joback Method |
| cpg | 961.83 | J/mol×K | 1028.63 | Joback Method |
| dvisc | 0.0040331 | Pa×s | 812.86 | Joback Method |
| dvisc | 0.0042760 | Pa×s | 761.46 | Joback Method |

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|---|---|---|---|---|
| dvisc | 0.0045720 | Pa×s | 710.06 | Joback Method |
| dvisc | 0.0049398 | Pa×s | 658.65 | Joback Method |
| dvisc | 0.0054076 | Pa×s | 607.25 | Joback Method |
| dvisc | 0.0060196 | Pa×s | 555.85 | Joback Method |
| dvisc | 0.0068488 | Pa×s | 504.45 | Joback Method |

# 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=U405497&Units=SI

# 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
**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
**rinpol:** Non-polar retention indices
**tb:** Normal Boiling Point Temperature
**tc:** Critical Temperature
**tf:** Normal melting (fusion) point
**vc:** Critical Volume