# Pentanedioic acid, 2-methyl-, dimethyl ester

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|---|---|
| **Other names:** | Glutaric acid, 2-methyl-, dimethyl ester |
| | «alpha»-Methylglutaric acid dimethyl ester |
| | Dimethyl «alpha»-methylglutarate |
| | Dimethyl 2-methylpentane-1,5-dioate |
| | Pentanedioic acid, 2-methyl-, 1,5-dimethyl ester |
| | Dimethyl-2-Methyl Glutarate |
| **Inchi:** | InChI=1S/C8H14O4/c1-6(8(10)12-3)4-5-7(9)11-2/h6H,4-5H2,1-3H3 |
| **InchiKey:** | ZWKKRUNHAVNSFW-UHFFFAOYSA-N |
| **Formula:** | C8H14O4 |
| **SMILES:** | COC(=O)CCC(C)C(=O)OC |
| **Mol. weight [g/mol]:** | 174.19 |
| **CAS:** | 14035-94-0 |

## Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| gf | -453.80 | kJ/mol | Joback Method |
| hf | -703.33 | kJ/mol | Joback Method |
| hfus | 18.53 | kJ/mol | Joback Method |
| hvap | 51.33 | kJ/mol | Joback Method |
| log10ws | -0.65 | | Crippen Method |
| logp | 0.749 | | Crippen Method |
| mcvol | 138.460 | ml/mol | McGowan Method |
| pc | 2811.36 | kPa | Joback Method |
| tb | 534.58 | K | Joback Method |
| tc | 722.01 | K | Joback Method |
| tf | 309.24 | K | Joback Method |
| vc | 0.525 | m3/kmol | Joback Method |

## Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 322.54 | J/mol×K | 534.58 | Joback Method |
| cpg | 376.76 | J/mol×K | 690.77 | Joback Method |
| cpg | 366.85 | J/mol×K | 659.53 | Joback Method |

| | | | | |
|---|---|---|---|---|
| cpg | 356.46 | J/mol×K | 628.29 | Joback Method |
| cpg | 345.61 | J/mol×K | 597.06 | Joback Method |
| cpg | 334.30 | J/mol×K | 565.82 | Joback Method |
| cpg | 386.20 | J/mol×K | 722.01 | Joback Method |
| dvisc | 0.0002153 | Pa×s | 534.58 | Joback Method |
| dvisc | 0.0002792 | Pa×s | 497.02 | Joback Method |
| dvisc | 0.0003777 | Pa×s | 459.47 | Joback Method |
| dvisc | 0.0005393 | Pa×s | 421.91 | Joback Method |
| dvisc | 0.0008255 | Pa×s | 384.35 | Joback Method |
| dvisc | 0.0013856 | Pa×s | 346.80 | Joback Method |
| dvisc | 0.0026376 | Pa×s | 309.24 | Joback Method |

# Sources

**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=C14035940&Units=SI
**Crippen Method:** http://pubs.acs.org/doi/abs/10.1021/ci990307l
**Crippen Method:** https://www.chemeo.com/doc/models/crippen_log10ws

# 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
**tb:** Normal Boiling Point Temperature
**tc:** Critical Temperature
**tf:** Normal melting (fusion) point
**vc:** Critical Volume

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