# Propanoic acid, 2-hydroxy-2-methyl-, methyl ester

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|---|---|
| **Other names:** | Methyl «alpha»-hydroxyisobutyrate |
| | Lactic acid, 2-methyl-, methyl ester |
| | Methyl 2-hydroxy-2-methylpropionate |
| | Methyl 2-hydroxyisobutyrate |
| | Methyl 2-methyllactate |
| | Methyl ester of 2-methyllactic acid |
| | 2-Hydroxyisobutyric acid, methyl ester |
| **Inchi:** | InChI=1S/C5H10O3/c1-5(2,7)4(6)8-3/h7H,1-3H3 |
| **InchiKey:** | XYVQFUJDGOBPQI-UHFFFAOYSA-N |
| **Formula:** | C5H10O3 |
| **SMILES:** | COC(=O)C(C)(C)O |
| **Mol. weight [g/mol]:** | 118.13 |
| **CAS:** | 2110-78-3 |

# Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| gf | -376.68 | kJ/mol | Joback Method |
| hf | -552.31 | kJ/mol | Joback Method |
| hfus | 8.17 | kJ/mol | Joback Method |
| hvap | 51.26 | kJ/mol | Joback Method |
| log10ws | -0.15 | | Crippen Method |
| logp | -0.070 | | Crippen Method |
| mcvol | 94.620 | ml/mol | McGowan Method |
| pc | 4211.09 | kPa | Joback Method |
| rinpol | 1118.00 | | NIST Webbook |
| rinpol | 1118.00 | | NIST Webbook |
| rinpol | 1116.00 | | NIST Webbook |
| tb | 410.20 | K | NIST Webbook |
| tc | 661.63 | K | Joback Method |
| tf | 281.51 | K | Joback Method |
| vc | 0.347 | m3/kmol | Joback Method |

# Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 207.95 | J/mol×K | 479.04 | Joback Method |
| cpg | 246.44 | J/mol×K | 631.20 | Joback Method |
| cpg | 239.51 | J/mol×K | 600.77 | Joback Method |
| cpg | 232.21 | J/mol×K | 570.34 | Joback Method |
| cpg | 224.53 | J/mol×K | 539.90 | Joback Method |
| cpg | 216.44 | J/mol×K | 509.47 | Joback Method |
| cpg | 253.01 | J/mol×K | 661.63 | Joback Method |
| dvisc | 0.0001875 | Pa×s | 479.04 | Joback Method |
| dvisc | 0.0003027 | Pa×s | 446.12 | Joback Method |
| dvisc | 0.0005275 | Pa×s | 413.20 | Joback Method |
| dvisc | 0.0010120 | Pa×s | 380.27 | Joback Method |
| dvisc | 0.0021967 | Pa×s | 347.35 | Joback Method |
| dvisc | 0.0056086 | Pa×s | 314.43 | Joback Method |
| dvisc | 0.0178299 | Pa×s | 281.51 | Joback Method |

# Sources

**McGowan Method:** http://link.springer.com/article/10.1007/BF02311772
**NIST Webbook:** http://webbook.nist.gov/cgi/cbook.cgi?ID=C2110783&Units=SI
**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

# 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

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