# Propane, 1,1-dimethoxy-2-methyl-

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|---|---|
| **Other names:** | Isobutylaldehyde dimethyl acetal |
| | Isobutyraldehyde dimethylacetal |
| | 1,1-Dimethoxy-2-methylpropane |
| | Propane, 2-methyl, 1,1-dimethoxy |
| | Isobutanal, dimethylacetal |
| **Inchi:** | InChI=1S/C6H14O2/c1-5(2)6(7-3)8-4/h5-6H,1-4H3 |
| **InchiKey:** | YINGOXPFQFTXIX-UHFFFAOYSA-N |
| **Formula:** | C6H14O2 |
| **SMILES:** | COC(OC)C(C)C |
| **Mol. weight [g/mol]:** | 118.17 |
| **CAS:** | 41632-89-7 |

## Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| gf | -215.24 | kJ/mol | Joback Method |
| hf | -442.17 | kJ/mol | Joback Method |
| hfus | 6.63 | kJ/mol | Joback Method |
| hvap | 32.99 | kJ/mol | Joback Method |
| log10ws | -0.87 | | Crippen Method |
| logp | 1.261 | | Crippen Method |
| mcvol | 107.140 | ml/mol | McGowan Method |
| pc | 3045.68 | kPa | Joback Method |
| rinpol | 733.00 | | NIST Webbook |
| rinpol | 701.00 | | NIST Webbook |
| rinpol | 733.00 | | NIST Webbook |
| rinpol | 691.00 | | NIST Webbook |
| rinpol | 701.00 | | NIST Webbook |
| tb | 380.64 | K | Joback Method |
| tc | 553.72 | K | Joback Method |
| tf | 184.10 ± 0.60 | K | NIST Webbook |
| vc | 0.396 | m3/kmol | Joback Method |

## Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 204.51 | J/mol×K | 380.64 | Joback Method |
| cpg | 215.09 | J/mol×K | 409.49 | Joback Method |
| cpg | 225.43 | J/mol×K | 438.33 | Joback Method |
| cpg | 235.51 | J/mol×K | 467.18 | Joback Method |
| cpg | 245.33 | J/mol×K | 496.03 | Joback Method |
| cpg | 254.88 | J/mol×K | 524.87 | Joback Method |
| cpg | 264.15 | J/mol×K | 553.72 | Joback Method |
| dvisc | 0.0086655 | Pa×s | 171.84 | Joback Method |
| dvisc | 0.0026859 | Pa×s | 206.64 | Joback Method |
| dvisc | 0.0011669 | Pa×s | 241.44 | Joback Method |
| dvisc | 0.0006254 | Pa×s | 276.24 | Joback Method |
| dvisc | 0.0003854 | Pa×s | 311.04 | Joback Method |
| dvisc | 0.0002618 | Pa×s | 345.84 | Joback Method |
| dvisc | 0.0001909 | Pa×s | 380.64 | Joback Method |

# Sources

**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=C41632897&Units=SI
**Crippen Method:** http://pubs.acs.org/doi/abs/10.1021/ci990307l

# 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 |