# cis-11-Eicosenoic acid, methyl ester

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| **Other names:** | (Z)-Methyl eicosa-11-enoate |
| | 11-Eicosenoic acid, methyl ester, (Z)- |
| | Methyl (Z)-11-eicosenoate |
| | cis-Methyl 11-eicosenoate |
| | methyl cis-11-eicosenoate |
| | methyl cis-icos-11-enoate |
| **Inchi:** | InChI=1S/C21H40O2/c1-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-19-20-21(22)23-2/h1 |
| **InchiKey:** | RBKMRGOHCLRTLZ-KHPPLWFESA-N |
| **Formula:** | C21H40O2 |
| **SMILES:** | CCCCCCCCC=CCCCCCCCCCC(=O)OC |
| **Mol. weight [g/mol]:** | 324.54 |
| **CAS:** | 2390-09-2 |

# Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| chl | -13190.00 | kJ/mol | NIST Webbook |
| gf | -27.76 | kJ/mol | Joback Method |
| hf | -604.35 | kJ/mol | Joback Method |
| hfus | 53.13 | kJ/mol | Joback Method |
| hvap | 115.80 ± 0.70 | kJ/mol | NIST Webbook |
| log10ws | -7.33 | | Crippen Method |
| logp | 6.977 | | Crippen Method |
| mcvol | 309.890 | ml/mol | McGowan Method |
| pc | 1016.83 | kPa | Joback Method |
| rinpol | 2279.00 | | NIST Webbook |
| rinpol | 2309.50 | | NIST Webbook |
| rinpol | 2278.00 | | NIST Webbook |
| rinpol | 2278.00 | | NIST Webbook |
| rinpol | 2279.00 | | NIST Webbook |
| rinpol | 2302.00 | | NIST Webbook |
| tb | 760.33 | K | Joback Method |
| tc | 936.69 | K | Joback Method |
| tf | 393.51 | K | Joback Method |
| vc | 1.216 | m3/kmol | Joback Method |

# Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 1049.56 | J/mol×K | 936.69 | Joback Method |
| cpg | 1018.40 | J/mol×K | 877.90 | Joback Method |
| cpg | 1001.56 | J/mol×K | 848.51 | Joback Method |
| cpg | 983.86 | J/mol×K | 819.12 | Joback Method |
| cpg | 965.24 | J/mol×K | 789.72 | Joback Method |
| cpg | 945.68 | J/mol×K | 760.33 | Joback Method |
| cpg | 1034.38 | J/mol×K | 907.29 | Joback Method |
| dvisc | 0.0025461 | Pa×s | 348.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0045289 | Pa×s | 318.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0040624 | Pa×s | 323.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0036649 | Pa×s | 328.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0033231 | Pa×s | 333.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0030278 | Pa×s | 338.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |

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| dvisc | 0.0027709 | Pa×s | 343.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0050803 | Pa×s | 313.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0023484 | Pa×s | 353.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0021736 | Pa×s | 358.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0020186 | Pa×s | 363.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0018807 | Pa×s | 368.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0017576 | Pa×s | 373.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0057379 | Pa×s | 308.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0065284 | Pa×s | 303.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |

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| dvisc | 0.0074879 | Pa×s | 298.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0086667 | Pa×s | 293.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0101310 | Pa×s | 288.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0119750 | Pa×s | 283.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| dvisc | 0.0143400 | Pa×s | 278.15 | Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel |
| hvapt | 115.80 | kJ/mol | 298.15 | the vaporization enthaplies and vapor pressures of a series of unstaurated fatty acid methyl esters by correlation gas chromatography |

# Sources

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| **Densities and Viscosities of Minority Fatty Acid Methyl and Ethyl Esters Present in Biodiesel:** | https://www.doi.org/10.1021/je1012235 |
| **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=C2390092&Units=SI |
| **Crippen Method:** | http://pubs.acs.org/doi/abs/10.1021/ci990307l |
| **Crippen Method:** | https://www.chemeo.com/doc/models/crippen_log10ws |
| **the vaporization enthaplies and vapor pressures of a series of unstaurated fatty acid methyl esters by correlation gas chromatography:** | https://www.doi.org/10.1016/j.tca.2007.02.008 |

# Legend

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| **chl:** | Standard liquid enthalpy of combustion |
| **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 |
| **hvapt:** | Enthalpy of vaporization at a given temperature |
| **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 |