# Hexadecanoic acid, methyl ester

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| **Other names:** | Acide hexadecanoique methyl ester |
| | Emery 2216 |
| | Metholene 2216 |
| | Methyl hexadecanoate |
| | Methyl n-hexadecanoate |
| | Methyl palmitate |
| | Palmitic acid, methyl ester |
| | Radia 7120 |
| | Uniphat A60 |
| | n-Hexadecanoic acid methyl ester |
| **Inchi:** | InChI=1S/C17H34O2/c1-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17(18)19-2/h3-16H2,1-2H3 |
| **InchiKey:** | FLIACVVOZYBSBS-UHFFFAOYSA-N |
| **Formula:** | C17H34O2 |
| **SMILES:** | CCCCCCCCCCCCCCCC(=O)OC |
| **Mol. weight [g/mol]:** | 270.45 |
| **CAS:** | 112-39-0 |

# Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| chl | -10107.00 ± 3.80 | kJ/mol | NIST Webbook |
| chs | -10669.00 ± 0.40 | kJ/mol | NIST Webbook |
| gf | -141.66 | kJ/mol | Joback Method |
| hf | -639.01 | kJ/mol | Joback Method |
| hfl | -1441.80 ± 3.80 | kJ/mol | NIST Webbook |
| hfus | 60.04 | kJ/mol | Heat Capacity Measurements of 13 Methyl Esters of n-Carboxylic Acids from Methyloctanoate to Methyleicosanoate between 5 K and 350 K |
| hvap | 93.20 | kJ/mol | NIST Webbook |
| hvap | 96.40 | kJ/mol | NIST Webbook |
| hvap | 96.80 ± 0.60 | kJ/mol | NIST Webbook |
| log10ws | -5.80 | | Crippen Method |
| logp | 5.641 | | Crippen Method |
| mcvol | 257.830 | ml/mol | McGowan Method |
| pc | 1271.87 | kPa | Joback Method |
| rinpol | 1927.00 | | NIST Webbook |

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|---|---|---|
| rinpol | 1911.00 | NIST Webbook |
| rinpol | 1915.75 | NIST Webbook |
| rinpol | 1904.00 | NIST Webbook |
| rinpol | 1898.00 | NIST Webbook |
| rinpol | 1927.30 | NIST Webbook |
| rinpol | 1926.00 | NIST Webbook |
| rinpol | 321.34 | NIST Webbook |
| rinpol | 1925.90 | NIST Webbook |
| rinpol | 1912.00 | NIST Webbook |
| rinpol | 1907.00 | NIST Webbook |
| rinpol | 1924.00 | NIST Webbook |
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| rinpol | 1909.00 | NIST Webbook |
| rinpol | 1920.00 | NIST Webbook |
| rinpol | 321.34 | NIST Webbook |
| rinpol | 321.34 | NIST Webbook |
| rinpol | 321.19 | NIST Webbook |
| rinpol | 331.30 | NIST Webbook |
| rinpol | 331.20 | NIST Webbook |
| rinpol | 331.20 | NIST Webbook |
| rinpol | 1937.00 | NIST Webbook |
| rinpol | 322.66 | NIST Webbook |
| rinpol | 319.52 | NIST Webbook |
| rinpol | 1908.00 | NIST Webbook |
| rinpol | 1907.00 | NIST Webbook |
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| rinpol | 1935.00 | NIST Webbook |
| rinpol | 1908.00 | NIST Webbook |
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| rinpol | 1904.10 | NIST Webbook |
| rinpol | 1905.20 | NIST Webbook |
| rinpol | 1906.40 | NIST Webbook |
| rinpol | 1907.60 | NIST Webbook |
| rinpol | 1908.90 | NIST Webbook |
| rinpol | 1910.20 | NIST Webbook |
| rinpol | 1911.50 | NIST Webbook |
| rinpol | 1912.00 | NIST Webbook |
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| rinpol | 1894.00 | NIST Webbook |
| rinpol | 1909.00 | NIST Webbook |
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| rinpol | 1927.30 | NIST Webbook |
| rinpol | 1927.70 | NIST Webbook |
| rinpol | 1926.00 | NIST Webbook |
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| rinpol | 1909.00 | NIST Webbook |
| rinpol | 1904.00 | NIST Webbook |
| rinpol | 1905.00 | NIST Webbook |
| rinpol | 1907.32 | NIST Webbook |
| rinpol | 1908.17 | NIST Webbook |
| rinpol | 1908.87 | NIST Webbook |
| rinpol | 1915.75 | NIST Webbook |
| rinpol | 1909.61 | NIST Webbook |
| rinpol | 1914.72 | NIST Webbook |
| rinpol | 1908.65 | NIST Webbook |
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| ripol | 2210.00 | NIST Webbook |
| ripol | 2178.00 | NIST Webbook |

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| ripol | 2223.00 | | NIST Webbook |
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| ripol | 2251.00 | | NIST Webbook |
| ripol | 2191.00 | | NIST Webbook |
| ripol | 2217.00 | | NIST Webbook |
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| ripol | 2177.00 | | NIST Webbook |
| ripol | 2170.00 | | NIST Webbook |
| ripol | 2202.00 | | NIST Webbook |
| ripol | 2213.00 | | NIST Webbook |
| ss | 495.09 | J/mol×K | NIST Webbook |
| tb | 664.65 | K | Joback Method |

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|---|---|---|---|
| tc | 760.00 | K | Vapor-liquid critical point measurements of fifteen compounds by the pulse-heating method |
| tf | 302.00 ± 2.00 | K | NIST Webbook |
| tf | 304.00 ± 1.00 | K | NIST Webbook |
| tf | 303.05 ± 0.35 | K | NIST Webbook |
| tf | 302.74 ± 0.10 | K | NIST Webbook |
| vc | 1.012 | m3/kmol | Joback Method |

# Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 784.95 | J/mol×K | 748.46 | Joback Method |
| cpg | 816.25 | J/mol×K | 804.33 | Joback Method |
| cpg | 830.80 | J/mol×K | 832.26 | Joback Method |
| cpg | 768.17 | J/mol×K | 720.52 | Joback Method |
| cpg | 750.62 | J/mol×K | 692.59 | Joback Method |
| cpg | 732.28 | J/mol×K | 664.65 | Joback Method |
| cpg | 800.97 | J/mol×K | 776.39 | Joback Method |
| cps | 474.47 | J/mol×K | 298.15 | NIST Webbook |
| dvisc | 0.0023360 | Pa×s | 333.15 | Group Contribution Model for Predicting Viscosity of Fatty Compounds |
| dvisc | 0.0037640 | Pa×s | 313.15 | Group Contribution Model for Predicting Viscosity of Fatty Compounds |
| dvisc | 0.0015499 | Pa×s | 363.15 | Densities and Viscosities of Fatty Acid Methyl and Ethyl Esters |
| dvisc | 0.0042122 | Pa×s | 308.15 | Densities and Viscosities of Fatty Acid Methyl and Ethyl Esters |
| dvisc | 0.0016659 | Pa×s | 358.15 | Densities and Viscosities of Fatty Acid Methyl and Ethyl Esters |
| dvisc | 0.0017960 | Pa×s | 353.15 | Densities and Viscosities of Fatty Acid Methyl and Ethyl Esters |

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| dvisc | 0.0019421 | Pa×s | 348.15 | Densities and Viscosities of Fatty Acid Methyl and Ethyl Esters |
| dvisc | 0.0037551 | Pa×s | 313.15 | Densities and Viscosities of Fatty Acid Methyl and Ethyl Esters |
| dvisc | 0.0033682 | Pa×s | 318.15 | Densities and Viscosities of Fatty Acid Methyl and Ethyl Esters |
| dvisc | 0.0030378 | Pa×s | 323.15 | Densities and Viscosities of Fatty Acid Methyl and Ethyl Esters |
| dvisc | 0.0029310 | Pa×s | 323.15 | Group Contribution Model for Predicting Viscosity of Fatty Compounds |
| dvisc | 0.0021073 | Pa×s | 343.15 | Densities and Viscosities of Fatty Acid Methyl and Ethyl Esters |
| dvisc | 0.0027540 | Pa×s | 328.15 | Densities and Viscosities of Fatty Acid Methyl and Ethyl Esters |
| dvisc | 0.0025083 | Pa×s | 333.15 | Densities and Viscosities of Fatty Acid Methyl and Ethyl Esters |
| dvisc | 0.0019460 | Pa×s | 343.15 | Group Contribution Model for Predicting Viscosity of Fatty Compounds |
| dvisc | 0.0022947 | Pa×s | 338.15 | Densities and Viscosities of Fatty Acid Methyl and Ethyl Esters |
| hfust | 14.97 | kJ/mol | 302.20 | NIST Webbook |
| hfust | 56.00 | kJ/mol | 305.20 | NIST Webbook |
| hfust | 68.16 | kJ/mol | 307.20 | NIST Webbook |
| hsubt | 152.00 ± 2.00 | kJ/mol | 296.00 | NIST Webbook |
| hvapt | 96.20 | kJ/mol | 298.15 | the vaporization enthaplies and vapor pressures of a series of unstaurated fatty acid methyl esters by correlation gas chromatography |

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| hvapt | 101.80 | kJ/mol | 298.00 | A Comparison of Results by Correlation Gas Chromatography with Another Gas Chromatographic Retention Time Technique. The Effects of Retention Time Coincidence on Vaporization Enthalpy and Vapor Pressure | |
| hvapt | 78.20 | kJ/mol | 498.00 | NIST Webbook | |
| hvapt | 82.40 | kJ/mol | 477.00 | NIST Webbook | |
| hvapt | 71.40 | kJ/mol | 448.50 | NIST Webbook | |
| hvapt | 93.40 | kJ/mol | 350.00 | NIST Webbook | |
| hvapt | 83.30 ± 0.40 | kJ/mol | 397.00 | NIST Webbook | |
| hvapt | 82.60 | kJ/mol | 411.50 | NIST Webbook | |
| pvap | 5.11e-03 | kPa | 361.55 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |
| pvap | 2.15e-04 | kPa | 326.56 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |
| pvap | 2.38e-04 | kPa | 327.52 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |
| pvap | 2.35e-04 | kPa | 327.52 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |

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| pvap | 2.68e-04 | kPa | 328.98 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 2.97e-04 | kPa | 329.96 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 3.40e-04 | kPa | 331.42 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 3.76e-04 | kPa | 332.37 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 3.77e-04 | kPa | 332.37 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 4.29e-04 | kPa | 333.83 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 4.70e-04 | kPa | 334.83 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |

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| pvap | 5.48e-04 | kPa | 336.28 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |
| pvap | 6.04e-04 | kPa | 337.23 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |
| pvap | 5.99e-04 | kPa | 337.23 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |
| pvap | 6.83e-04 | kPa | 338.69 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |
| pvap | 7.52e-04 | kPa | 339.69 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |
| pvap | 8.56e-04 | kPa | 341.14 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |
| pvap | 9.46e-04 | kPa | 342.09 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |

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| pvap | 9.34e-04 | kPa | 342.09 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 1.07e-03 | kPa | 343.55 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 1.18e-03 | kPa | 344.55 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 1.23e-03 | kPa | 345.01 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 1.33e-03 | kPa | 346.00 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 1.46e-03 | kPa | 346.95 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 1.46e-03 | kPa | 346.95 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |

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| pvap | 1.66e-03 | kPa | 348.41 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 1.82e-03 | kPa | 349.41 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 1.89e-03 | kPa | 349.87 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 2.05e-03 | kPa | 350.86 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 2.26e-03 | kPa | 351.82 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 2.53e-03 | kPa | 353.27 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 2.77e-03 | kPa | 354.29 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |

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|---|---|---|---|---|
| pvap | 2.88e-03 | kPa | 354.73 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 3.11e-03 | kPa | 355.73 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 3.41e-03 | kPa | 356.67 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 3.81e-03 | kPa | 358.13 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 4.17e-03 | kPa | 359.16 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 4.33e-03 | kPa | 359.59 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 4.29e-03 | kPa | 359.63 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |

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|---|---|---|---|---|
| pvap | 4.67e-03 | kPa | 360.59 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 1.85e-04 | kPa | 325.11 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 5.65e-03 | kPa | 363.00 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 6.17e-03 | kPa | 364.02 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 6.38e-03 | kPa | 364.45 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 6.32e-03 | kPa | 364.49 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 1.66e-04 | kPa | 324.12 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |

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|---|---|---|---|---|
| pvap | 7.47e-03 | kPa | 366.41 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 8.23e-03 | kPa | 367.87 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 8.93e-03 | kPa | 368.87 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 9.21e-03 | kPa | 369.32 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 0.01 | kPa | 371.29 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 0.01 | kPa | 371.74 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 0.01 | kPa | 372.64 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |

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|---|---|---|---|---|---|
| pvap | 0.01 | kPa | 372.73 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |
| pvap | 4.00 | kPa | 486.57 | Vapor liquid equilibrium of fatty acid ethyl esters determined using DSC | |
| pvap | 0.13 | kPa | 407.12 | Measurements and Correlations of the Density, Viscosity, and Vapor Pressure for Methyl Ricinoleate | |
| pvap | 0.21 | kPa | 414.26 | Measurements and Correlations of the Density, Viscosity, and Vapor Pressure for Methyl Ricinoleate | |
| pvap | 0.24 | kPa | 418.18 | Measurements and Correlations of the Density, Viscosity, and Vapor Pressure for Methyl Ricinoleate | |
| pvap | 0.27 | kPa | 422.34 | Measurements and Correlations of the Density, Viscosity, and Vapor Pressure for Methyl Ricinoleate | |
| pvap | 0.30 | kPa | 424.68 | Measurements and Correlations of the Density, Viscosity, and Vapor Pressure for Methyl Ricinoleate | |
| pvap | 0.36 | kPa | 427.54 | Measurements and Correlations of the Density, Viscosity, and Vapor Pressure for Methyl Ricinoleate | |

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|---|---|---|---|---|
| pvap | 0.41 | kPa | 429.32 | Measurements and Correlations of the Density, Viscosity, and Vapor Pressure for Methyl Ricinoleate |
| pvap | 0.42 | kPa | 432.32 | Measurements and Correlations of the Density, Viscosity, and Vapor Pressure for Methyl Ricinoleate |
| pvap | 0.52 | kPa | 434.18 | Measurements and Correlations of the Density, Viscosity, and Vapor Pressure for Methyl Ricinoleate |
| pvap | 0.55 | kPa | 437.30 | Measurements and Correlations of the Density, Viscosity, and Vapor Pressure for Methyl Ricinoleate |
| pvap | 0.56 | kPa | 438.44 | Measurements and Correlations of the Density, Viscosity, and Vapor Pressure for Methyl Ricinoleate |
| pvap | 0.65 | kPa | 439.60 | Measurements and Correlations of the Density, Viscosity, and Vapor Pressure for Methyl Ricinoleate |
| pvap | 0.66 | kPa | 441.00 | Measurements and Correlations of the Density, Viscosity, and Vapor Pressure for Methyl Ricinoleate |
| pvap | 0.84 | kPa | 445.36 | Measurements and Correlations of the Density, Viscosity, and Vapor Pressure for Methyl Ricinoleate |
| pvap | 0.85 | kPa | 447.06 | Measurements and Correlations of the Density, Viscosity, and Vapor Pressure for Methyl Ricinoleate |

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| pvap | 0.02 | kPa | 373.15 | Isothermal Vapor Pressures of Three Binary Systems: n-Tetradecane + Methyl Dodecanoate, Methyl Tetradecanoate, or Methyl Hexadecanoate between 353.15 and 453.15 K | |
| pvap | 0.03 | kPa | 383.15 | Isothermal Vapor Pressures of Three Binary Systems: n-Tetradecane + Methyl Dodecanoate, Methyl Tetradecanoate, or Methyl Hexadecanoate between 353.15 and 453.15 K | |
| pvap | 0.05 | kPa | 393.15 | Isothermal Vapor Pressures of Three Binary Systems: n-Tetradecane + Methyl Dodecanoate, Methyl Tetradecanoate, or Methyl Hexadecanoate between 353.15 and 453.15 K | |
| pvap | 0.10 | kPa | 403.15 | Isothermal Vapor Pressures of Three Binary Systems: n-Tetradecane + Methyl Dodecanoate, Methyl Tetradecanoate, or Methyl Hexadecanoate between 353.15 and 453.15 K | |

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| pvap | 0.16 | kPa | 413.15 | Isothermal Vapor Pressures of Three Binary Systems: n-Tetradecane + Methyl Dodecanoate, Methyl Tetradecanoate, or Methyl Hexadecanoate between 353.15 and 453.15 K |
| pvap | 0.28 | kPa | 423.15 | Isothermal Vapor Pressures of Three Binary Systems: n-Tetradecane + Methyl Dodecanoate, Methyl Tetradecanoate, or Methyl Hexadecanoate between 353.15 and 453.15 K |
| pvap | 0.46 | kPa | 433.15 | Isothermal Vapor Pressures of Three Binary Systems: n-Tetradecane + Methyl Dodecanoate, Methyl Tetradecanoate, or Methyl Hexadecanoate between 353.15 and 453.15 K |
| pvap | 0.76 | kPa | 443.15 | Isothermal Vapor Pressures of Three Binary Systems: n-Tetradecane + Methyl Dodecanoate, Methyl Tetradecanoate, or Methyl Hexadecanoate between 353.15 and 453.15 K |
| pvap | 1.21 | kPa | 453.15 | Isothermal Vapor Pressures of Three Binary Systems: n-Tetradecane + Methyl Dodecanoate, Methyl Tetradecanoate, or Methyl Hexadecanoate between 353.15 and 453.15 K |

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| pvap | 0.10 | kPa | 408.30 | Isobaric Vapor Liquid Equilibrium of the Mixture of Methyl Palmitate and Methyl Stearate at 0.1 kPa, 1 kPa, 5 kPa, and 10 kPa |
| pvap | 1.00 | kPa | 450.90 | Isobaric Vapor Liquid Equilibrium of the Mixture of Methyl Palmitate and Methyl Stearate at 0.1 kPa, 1 kPa, 5 kPa, and 10 kPa |
| pvap | 5.00 | kPa | 490.80 | Isobaric Vapor Liquid Equilibrium of the Mixture of Methyl Palmitate and Methyl Stearate at 0.1 kPa, 1 kPa, 5 kPa, and 10 kPa |
| pvap | 10.00 | kPa | 511.25 | Isobaric Vapor Liquid Equilibrium of the Mixture of Methyl Palmitate and Methyl Stearate at 0.1 kPa, 1 kPa, 5 kPa, and 10 kPa |
| pvap | 1.44e-04 | kPa | 322.67 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 1.43e-04 | kPa | 322.66 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 1.28e-04 | kPa | 321.71 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |

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|---|---|---|---|---|
| pvap | 1.12e-04 | kPa | 320.26 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 1.00e-04 | kPa | 319.27 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 8.76e-05 | kPa | 317.82 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 8.23e-05 | kPa | 317.81 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 7.59e-05 | kPa | 316.85 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 6.90e-05 | kPa | 315.40 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |
| pvap | 6.00e-05 | kPa | 314.42 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |

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|---|---|---|---|---|---|
| pvap | 4.82e-05 | kPa | 312.97 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |
| pvap | 5.32e-05 | kPa | 312.96 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |
| pvap | 4.57e-05 | kPa | 312.00 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |
| pvap | 2.81e-05 | kPa | 308.12 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics | |
| pvap | 0.77 | kPa | 444.15 | Measurement and correlation of the density, viscosity and vapor pressure of fatty acid 2-ethyhexyl esters | |
| pvap | 0.62 | kPa | 440.15 | Measurement and correlation of the density, viscosity and vapor pressure of fatty acid 2-ethyhexyl esters | |
| pvap | 0.58 | kPa | 438.45 | Measurement and correlation of the density, viscosity and vapor pressure of fatty acid 2-ethyhexyl esters | |

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|---|---|---|---|---|---|
| pvap | 0.53 | kPa | 436.25 | Measurement and correlation of the density, viscosity and vapor pressure of fatty acid 2-ethyhexyl esters | |
| pvap | 0.45 | kPa | 433.35 | Measurement and correlation of the density, viscosity and vapor pressure of fatty acid 2-ethyhexyl esters | |
| pvap | 0.42 | kPa | 432.25 | Measurement and correlation of the density, viscosity and vapor pressure of fatty acid 2-ethyhexyl esters | |
| pvap | 0.40 | kPa | 430.75 | Measurement and correlation of the density, viscosity and vapor pressure of fatty acid 2-ethyhexyl esters | |
| pvap | 0.35 | kPa | 428.35 | Measurement and correlation of the density, viscosity and vapor pressure of fatty acid 2-ethyhexyl esters | |
| pvap | 0.31 | kPa | 425.25 | Measurement and correlation of the density, viscosity and vapor pressure of fatty acid 2-ethyhexyl esters | |
| pvap | 0.28 | kPa | 423.15 | Measurement and correlation of the density, viscosity and vapor pressure of fatty acid 2-ethyhexyl esters | |

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|---|---|---|---|---|
| pvap | 0.21 | kPa | 419.15 | Measurement and correlation of the density, viscosity and vapor pressure of fatty acid 2-ethyhexyl esters |
| pvap | 1.20 | kPa | 452.65 | Experimental vapor pressures (from 1 Pa to 100 kPa) of six saturated Fatty Acid Methyl Esters (FAMEs): Methyl hexanoate, methyl octanoate, methyl decanoate, methyl dodecanoate, methyl tetradecanoate and methyl hexadecanoate |
| pvap | 0.73 | kPa | 442.67 | Experimental vapor pressures (from 1 Pa to 100 kPa) of six saturated Fatty Acid Methyl Esters (FAMEs): Methyl hexanoate, methyl octanoate, methyl decanoate, methyl dodecanoate, methyl tetradecanoate and methyl hexadecanoate |
| pvap | 0.45 | kPa | 432.68 | Experimental vapor pressures (from 1 Pa to 100 kPa) of six saturated Fatty Acid Methyl Esters (FAMEs): Methyl hexanoate, methyl octanoate, methyl decanoate, methyl dodecanoate, methyl tetradecanoate and methyl hexadecanoate |

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|---|---|---|---|---|---|
| pvap | 0.27 | kPa | 422.44 | Experimental vapor pressures (from 1 Pa to 100 kPa) of six saturated Fatty Acid Methyl Esters (FAMEs): Methyl hexanoate, methyl octanoate, methyl decanoate, methyl dodecanoate, methyl tetradecanoate and methyl hexadecanoate | |
| pvap | 0.16 | kPa | 412.54 | Experimental vapor pressures (from 1 Pa to 100 kPa) of six saturated Fatty Acid Methyl Esters (FAMEs): Methyl hexanoate, methyl octanoate, methyl decanoate, methyl dodecanoate, methyl tetradecanoate and methyl hexadecanoate | |
| pvap | 0.09 | kPa | 402.41 | Experimental vapor pressures (from 1 Pa to 100 kPa) of six saturated Fatty Acid Methyl Esters (FAMEs): Methyl hexanoate, methyl octanoate, methyl decanoate, methyl dodecanoate, methyl tetradecanoate and methyl hexadecanoate | |

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|---|---|---|---|---|
| pvap | 0.05 | kPa | 392.48 | Experimental vapor pressures (from 1 Pa to 100 kPa) of six saturated Fatty Acid Methyl Esters (FAMEs): Methyl hexanoate, methyl octanoate, methyl decanoate, methyl dodecanoate, methyl tetradecanoate and methyl hexadecanoate |
| pvap | 0.03 | kPa | 382.55 | Experimental vapor pressures (from 1 Pa to 100 kPa) of six saturated Fatty Acid Methyl Esters (FAMEs): Methyl hexanoate, methyl octanoate, methyl decanoate, methyl dodecanoate, methyl tetradecanoate and methyl hexadecanoate |
| pvap | 0.70 | kPa | 442.35 | Measurement and correlation of the density, viscosity and vapor pressure of fatty acid 2-ethyhexyl esters |
| pvap | 6.84e-03 | kPa | 365.45 | Fatty acids methyl esters: Complementary measurements and comprehensive analysis of vaporization thermodynamics |

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|---|---|---|---|---|
| pvap | 0.01 | kPa | 372.35 | Experimental vapor pressures (from 1 Pa to 100 kPa) of six saturated Fatty Acid Methyl Esters (FAMEs): Methyl hexanoate, methyl octanoate, methyl decanoate, methyl dodecanoate, methyl tetradecanoate and methyl hexadecanoate |
| speedsl | 1250.00 | m/s | 333.15 | Density and Speed of Sound Measurements on Five Fatty Acid Methyl Esters at 83 kPa and Temperatures from (278.15 to 338.15) K |
| speedsl | 1268.00 | m/s | 328.15 | Density and Speed of Sound Measurements on Five Fatty Acid Methyl Esters at 83 kPa and Temperatures from (278.15 to 338.15) K |
| speedsl | 1285.00 | m/s | 323.15 | Density and Speed of Sound Measurements on Five Fatty Acid Methyl Esters at 83 kPa and Temperatures from (278.15 to 338.15) K |
| speedsl | 1303.00 | m/s | 318.15 | Density and Speed of Sound Measurements on Five Fatty Acid Methyl Esters at 83 kPa and Temperatures from (278.15 to 338.15) K |

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|---|---|---|---|---|
| speedsl | 1320.00 | m/s | 313.15 | Density and Speed of Sound Measurements on Five Fatty Acid Methyl Esters at 83 kPa and Temperatures from (278.15 to 338.15) K |
| speedsl | 1338.00 | m/s | 308.15 | Density and Speed of Sound Measurements on Five Fatty Acid Methyl Esters at 83 kPa and Temperatures from (278.15 to 338.15) K |
| speedsl | 1233.00 | m/s | 338.15 | Density and Speed of Sound Measurements on Five Fatty Acid Methyl Esters at 83 kPa and Temperatures from (278.15 to 338.15) K |

# Pressure Dependent Properties

| Property code | Value | Unit | Pressure [kPa] | Source |
|---|---|---|---|---|
| tbrp | 436.70 | K | 0.50 | NIST Webbook |

# Correlations

| Information | Value |
|---|---|
| Property code | pvap |
| Equation | ln(Pvp) = A + B/(T + C) |
| Coeff. A | 1.50314e+01 |
| Coeff. B | -5.16468e+03 |
| Coeff. C | -1.09270e+02 |
| Temperature range (K), min. | 459.57 |
| Temperature range (K), max. | 640.62 |

# Datasets

## Speed of sound, m/s

| Pressure, kPa - Liquid | Temperature, K - Liquid | Speed of sound, m/s - Liquid |
|---|---|---|
| 100.00 | 313.15 | 1317.2 |
| 10000.00 | 313.15 | 1365.4 |
| 20000.00 | 313.15 | 1411.5 |
| 30000.00 | 313.15 | 1454.4 |
| 40000.00 | 313.15 | 1494.8 |
| 100.00 | 323.15 | 1283.4 |
| 10000.00 | 323.15 | 1333.7 |
| 20000.00 | 323.15 | 1381.1 |
| 30000.00 | 323.15 | 1425.2 |
| 40000.00 | 323.15 | 1467.4 |
| 50000.00 | 323.15 | 1506.9 |
| 100.00 | 343.15 | 1215.3 |
| 10000.00 | 343.15 | 1270.1 |
| 20000.00 | 343.15 | 1319.7 |
| 30000.00 | 343.15 | 1366.8 |
| 40000.00 | 343.15 | 1410.5 |
| 50000.00 | 343.15 | 1450.6 |
| 100.00 | 363.15 | 1150.1 |
| 10000.00 | 363.15 | 1208.9 |
| 20000.00 | 363.15 | 1262.5 |
| 30000.00 | 363.15 | 1311.1 |
| 40000.00 | 363.15 | 1355.7 |
| 50000.00 | 363.15 | 1400.9 |
| 100.00 | 383.15 | 1087.2 |
| 10000.00 | 383.15 | 1150.3 |
| 20000.00 | 383.15 | 1207.5 |
| 30000.00 | 383.15 | 1259.3 |
| 40000.00 | 383.15 | 1310.8 |
| 50000.00 | 383.15 | 1358.3 |
| 100.00 | 393.15 | 1056.9 |
| 10000.00 | 393.15 | 1121.2 |
| 20000.00 | 393.15 | 1180.4 |
| 30000.00 | 393.15 | 1234.2 |

| | | |
|---|---|---|
| 40000.00 | 393.15 | 1284.7 |
| 50000.00 | 393.15 | 1334.0 |

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| **McGowan Method:** | http://link.springer.com/article/10.1007/BF02311772 |
| **Crippen Method:** | https://www.chemeo.com/doc/models/crippen_log10ws |
| **Fatty acids methyl esters:** | https://www.doi.org/10.1016/j.jct.2019.01.007 |
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| **A Comparison of Results by Correlation Gas Chromatography with Another Gas Chromatographic Technique: The Effects of Retention Time Coincidence on Measurements of 13 Methyl Esters of Carboxylic Acids** | https://www.doi.org/10.1021/je8003854 |
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| **Vapor liquid critical point measurements of fifteen compounds by the pulse heating method:** | https://www.doi.org/10.1016/j.fluid.2014.07.038 |
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# Legend

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|---|---|
| **chl:** | Standard liquid enthalpy of combustion |
| **chs:** | Standard solid enthalpy of combustion |
| **cpg:** | Ideal gas heat capacity |
| **cps:** | Solid phase heat capacity |
| **dvisc:** | Dynamic viscosity |
| **gf:** | Standard Gibbs free energy of formation |
| **hf:** | Enthalpy of formation at standard conditions |
| **hfl:** | Liquid phase enthalpy of formation at standard conditions |
| **hfus:** | Enthalpy of fusion at standard conditions |
| **hfust:** | Enthalpy of fusion at a given temperature |
| **hsubt:** | Enthalpy of sublimation at a given temperature |
| **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 |
| **pvap:** | Vapor pressure |
| **rinpol:** | Non-polar retention indices |
| **ripol:** | Polar retention indices |
| **speedsl:** | Speed of sound in fluid |
| **ss:** | Solid phase molar entropy at standard conditions |
| **tb:** | Normal Boiling Point Temperature |
| **tbrp:** | Boiling point at reduced pressure |
| **tc:** | Critical Temperature |
| **tf:** | Normal melting (fusion) point |
| **vc:** | Critical Volume |