# Heptane

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|---|---|
| **Other names:** | Dipropylmethane |
| | Eptani |
| | Gettysolve-C |
| | Heptan |
| | Heptanen |
| | Heptyl hydride |
| | NSC 62784 |
| | Skellysolve C |
| | n-C7H16 |
| | n-Heptane |
| **Inchi:** | InChI=1S/C7H16/c1-3-5-7-6-4-2/h3-7H2,1-2H3 |
| **InchiKey:** | IMNFDUFMRHMDMM-UHFFFAOYSA-N |
| **Formula:** | C7H16 |
| **SMILES:** | CCCCCCC |
| **Mol. weight [g/mol]:** | 100.20 |
| **CAS:** | 142-82-5 |

# Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| af | 0.3490 | | KDB |
| aigt | 495.93 | K | KDB |
| ap | 342.850 | K | KDB |
| chl | -4810.30 | kJ/mol | NIST Webbook |
| chl | -4830.00 ± 120.00 | kJ/mol | NIST Webbook |
| chl | -4818.70 | kJ/mol | NIST Webbook |
| chl | -4817.16 ± 0.88 | kJ/mol | NIST Webbook |
| chl | -4815.00 ± 1.00 | kJ/mol | NIST Webbook |
| chl | -4816.91 ± 0.63 | kJ/mol | NIST Webbook |
| chl | -4817.00 ± 1.50 | kJ/mol | NIST Webbook |
| cpl | 223.91 | J/mol×K | THERMODYNAMICS OF MIXTURES CONTAINING AMINES. XIV. CpEm OF BENZYLAMINE WITH HEPTANE AT 293.15 K OR WITH METHANOL, 1-PROPANOL OR 1-PENTANOL AT (293.15-308.15) K |
| dm | 0.00 | debye | KDB |

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|---|---|---|---|
| fll | 1.00 | % in Air | KDB |
| flu | 7.00 | % in Air | KDB |
| fpo | 269.26 | K | KDB |
| gf | 8.00 | kJ/mol | KDB |
| gyrad | 4.2670 | | KDB |
| hcg | 4816.91 | kJ/mol | KDB |
| hcn | 4464.788 | kJ/mol | KDB |
| hf | -187.80 ± 0.79 | kJ/mol | NIST Webbook |
| hf | -187.90 | kJ/mol | KDB |
| hf | -189.30 | kJ/mol | NIST Webbook |
| hfl | -225.90 ± 1.30 | kJ/mol | NIST Webbook |
| hfl | -224.40 ± 0.79 | kJ/mol | NIST Webbook |
| hfus | 14.06 | kJ/mol | Measurement of Heat Capacity by Adiabatic Calorimetry and Calculation of Thermodynamic Functions of Standard Substances: Copper, Benzoic Acid, and Heptane (For Calibration of an Adiabatic Calorimeter) |
| hvap | 36.60 ± 0.10 | kJ/mol | NIST Webbook |
| hvap | 36.55 | kJ/mol | NIST Webbook |
| hvap | 32.00 ± 0.20 | kJ/mol | NIST Webbook |
| hvap | 36.66 | kJ/mol | NIST Webbook |
| hvap | 36.60 | kJ/mol | NIST Webbook |
| hvap | 36.54 | kJ/mol | NIST Webbook |
| hvap | 36.90 | kJ/mol | NIST Webbook |
| ie | 9.83 ± 0.15 | eV | NIST Webbook |
| ie | 10.15 | eV | NIST Webbook |
| ie | 10.16 | eV | NIST Webbook |
| ie | 9.91 | eV | NIST Webbook |
| ie | 9.90 ± 0.05 | eV | NIST Webbook |
| ie | 9.93 ± 0.10 | eV | NIST Webbook |
| ie | 10.08 | eV | NIST Webbook |
| ie | 9.93 ± 0.10 | eV | NIST Webbook |
| log10ws | -4.53 | | Estimated Solubility Method |
| log10ws | -4.53 | | Aqueous Solubility Prediction Method |
| logp | 2.977 | | Crippen Method |
| mcvol | 109.490 | ml/mol | McGowan Method |
| pc | 2723.80 ± 26.70 | kPa | NIST Webbook |
| pc | 2730.31 ± 20.68 | kPa | NIST Webbook |
| pc | 2750.00 ± 34.50 | kPa | NIST Webbook |
| pc | 2770.00 ± 50.66 | kPa | NIST Webbook |
| pc | 2736.00 ± 40.53 | kPa | NIST Webbook |

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|---|---|---|---|
| pc | 2736.52 ± 17.23 | kPa | NIST Webbook |
| pc | 2730.00 ± 103.42 | kPa | NIST Webbook |
| pc | 2760.00 ± 50.66 | kPa | NIST Webbook |
| pc | 2734.00 ± 5.00 | kPa | NIST Webbook |
| pc | 2736.00 | kPa | NIST Webbook |
| pc | 2734.00 ± 20.00 | kPa | NIST Webbook |
| pc | 2730.00 ± 10.00 | kPa | NIST Webbook |
| pc | 2730.00 ± 30.00 | kPa | NIST Webbook |
| pc | 2730.00 ± 40.00 | kPa | NIST Webbook |
| pc | 2740.00 ± 30.00 | kPa | NIST Webbook |
| pc | 2740.00 | kPa | KDB |
| pc | 2801.64 ± 20.26 | kPa | NIST Webbook |
| pc | 2735.77 ± 5.06 | kPa | NIST Webbook |
| pc | 2735.77 ± 4.05 | kPa | NIST Webbook |
| pc | 2775.00 ± 5.00 | kPa | NIST Webbook |
| rhoc | 234.47 ± 3.01 | kg/m3 | NIST Webbook |
| rhoc | 241.49 ± 5.01 | kg/m3 | NIST Webbook |
| rhoc | 241.49 ± 2.00 | kg/m3 | NIST Webbook |
| rhoc | 234.71 ± 1.60 | kg/m3 | NIST Webbook |
| rhoc | 234.67 ± 1.60 | kg/m3 | NIST Webbook |
| rhoc | 241.49 ± 15.03 | kg/m3 | NIST Webbook |
| rhoc | 232.47 ± 5.01 | kg/m3 | NIST Webbook |
| rhoc | 234.47 ± 5.01 | kg/m3 | NIST Webbook |
| rhoc | 233.47 ± 6.01 | kg/m3 | NIST Webbook |
| rhoc | 232.47 ± 10.02 | kg/m3 | NIST Webbook |
| rhoc | 234.07 ± 3.01 | kg/m3 | NIST Webbook |
| rhoc | 232.47 | kg/m3 | NIST Webbook |
| sl | 330.10 | J/mol×K | NIST Webbook |
| sl | 326.40 | J/mol×K | NIST Webbook |
| sl | 328.86 | J/mol×K | NIST Webbook |
| sl | 327.98 | J/mol×K | NIST Webbook |
| sl | 328.57 | J/mol×K | NIST Webbook |
| tb | 371.35 ± 0.40 | K | NIST Webbook |
| tb | 371.55 ± 0.40 | K | NIST Webbook |
| tb | 371.55 ± 0.50 | K | NIST Webbook |
| tb | 371.65 ± 0.30 | K | NIST Webbook |
| tb | 371.45 ± 0.15 | K | NIST Webbook |
| tb | 371.55 ± 0.50 | K | NIST Webbook |
| tb | 371.60 ± 0.20 | K | NIST Webbook |
| tb | 371.45 ± 0.30 | K | NIST Webbook |
| tb | 371.58 ± 0.08 | K | NIST Webbook |
| tb | 371.60 ± 0.20 | K | NIST Webbook |
| tb | 371.57 ± 0.02 | K | NIST Webbook |
| tb | 371.58 ± 0.20 | K | NIST Webbook |

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| tb | 371.55 ± 0.10 | K | NIST Webbook |
| tb | 371.50 ± 0.15 | K | NIST Webbook |
| tb | 371.60 ± 0.30 | K | NIST Webbook |
| tb | 370.30 ± 1.00 | K | NIST Webbook |
| tb | 371.55 ± 0.30 | K | NIST Webbook |
| tb | 371.57 ± 0.30 | K | NIST Webbook |
| tb | 371.55 ± 0.20 | K | NIST Webbook |
| tb | 371.57 ± 0.30 | K | NIST Webbook |
| tb | 371.57 ± 0.03 | K | NIST Webbook |
| tb | 371.68 ± 0.15 | K | NIST Webbook |
| tb | 371.55 ± 0.30 | K | NIST Webbook |
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| tb | 371.45 ± 0.50 | K | NIST Webbook |
| tb | 371.40 ± 0.50 | K | NIST Webbook |
| tb | 371.65 ± 0.50 | K | NIST Webbook |
| tb | 371.59 ± 0.30 | K | NIST Webbook |
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| tb | 371.55 ± 0.30 | K | NIST Webbook |
| tb | 371.60 ± 0.20 | K | NIST Webbook |
| tb | 371.10 ± 0.70 | K | NIST Webbook |
| tb | 371.55 ± 0.50 | K | NIST Webbook |
| tb | 371.55 ± 0.30 | K | NIST Webbook |
| tb | 371.55 ± 0.30 | K | NIST Webbook |
| tb | 371.60 ± 0.40 | K | NIST Webbook |
| tb | 371.60 ± 0.30 | K | NIST Webbook |
| tb | 371.55 ± 0.70 | K | NIST Webbook |
| tb | 371.55 ± 0.60 | K | NIST Webbook |
| tb | 371.40 ± 1.00 | K | NIST Webbook |
| tb | 371.54 ± 0.10 | K | NIST Webbook |
| tb | 371.55 ± 0.50 | K | NIST Webbook |
| tb | 371.57 ± 0.01 | K | NIST Webbook |
| tb | 371.57 ± 0.30 | K | NIST Webbook |
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| tb | 371.55 ± 0.30 | K | NIST Webbook |
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| tb | 371.57 ± 0.30 | K | NIST Webbook |
| tb | 371.70 ± 0.20 | K | NIST Webbook |
| tb | 371.55 ± 0.50 | K | NIST Webbook |
| tb | 371.55 ± 0.30 | K | NIST Webbook |
| tb | 371.20 ± 0.70 | K | NIST Webbook |
| tb | 371.54 ± 0.15 | K | NIST Webbook |

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| tb | 372.00 ± 1.50 | K | NIST Webbook |
| tb | 371.55 ± 0.50 | K | NIST Webbook |
| tb | 371.58 ± 0.05 | K | NIST Webbook |
| tb | 371.15 ± 1.00 | K | NIST Webbook |
| tb | 371.55 ± 0.20 | K | NIST Webbook |
| tb | 371.70 ± 0.20 | K | NIST Webbook |
| tb | 371.15 ± 2.00 | K | NIST Webbook |
| tb | 371.55 ± 0.25 | K | NIST Webbook |
| tb | 371.75 ± 0.40 | K | NIST Webbook |
| tb | 371.55 ± 1.00 | K | NIST Webbook |
| tb | 371.60 ± 0.30 | K | NIST Webbook |
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| tb | 371.10 ± 0.60 | K | NIST Webbook |
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| tb | 371.71 ± 0.20 | K | NIST Webbook |
| tb | 371.35 ± 0.50 | K | NIST Webbook |
| tb | 371.90 ± 1.50 | K | NIST Webbook |
| tb | 371.46 ± 0.25 | K | NIST Webbook |
| tb | 371.65 ± 0.50 | K | NIST Webbook |
| tb | 371.70 ± 5.00 | K | NIST Webbook |
| tb | 371.55 ± 0.20 | K | NIST Webbook |
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| tb | 371.49 ± 0.30 | K | NIST Webbook |
| tb | 371.30 ± 0.80 | K | NIST Webbook |
| tb | 371.30 ± 1.00 | K | NIST Webbook |
| tb | 371.65 ± 1.50 | K | NIST Webbook |
| tb | 371.45 ± 1.50 | K | NIST Webbook |
| tb | 371.15 ± 1.00 | K | NIST Webbook |
| tb | 371.15 ± 2.00 | K | NIST Webbook |
| tb | 371.90 ± 1.50 | K | NIST Webbook |
| tb | 371.60 ± 0.30 | K | NIST Webbook |
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| tb | 371.58 ± 0.20 | K | NIST Webbook |
| tb | 371.55 ± 0.50 | K | NIST Webbook |
| tb | 371.55 ± 0.50 | K | NIST Webbook |
| tb | 371.65 ± 0.70 | K | NIST Webbook |
| tb | 371.68 ± 0.20 | K | NIST Webbook |

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| tb | 371.60 ± 0.20 | K | NIST Webbook |
| tb | 371.00 ± 3.00 | K | NIST Webbook |
| tb | 370.65 ± 1.50 | K | NIST Webbook |
| tb | 371.46 ± 0.05 | K | NIST Webbook |
| tb | 371.77 ± 0.15 | K | NIST Webbook |
| tb | 371.70 ± 0.30 | K | NIST Webbook |
| tb | 371.55 ± 0.20 | K | NIST Webbook |
| tb | 371.59 ± 0.10 | K | NIST Webbook |
| tb | 371.60 ± 0.40 | K | NIST Webbook |
| tb | 371.45 ± 0.40 | K | NIST Webbook |
| tb | 371.00 ± 0.30 | K | NIST Webbook |
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| tb | 371.60 ± 0.30 | K | NIST Webbook |
| tb | 372.00 ± 2.00 | K | NIST Webbook |
| tb | 371.53 ± 0.10 | K | NIST Webbook |
| tb | 371.64 ± 0.08 | K | NIST Webbook |
| tb | 371.35 ± 0.30 | K | NIST Webbook |
| tb | 371.50 ± 0.50 | K | NIST Webbook |
| tb | 371.60 ± 0.20 | K | NIST Webbook |
| tb | 371.53 ± 0.30 | K | NIST Webbook |
| tb | 371.54 ± 0.01 | K | NIST Webbook |
| tb | 371.60 | K | NIST Webbook |
| tb | 371.55 ± 0.50 | K | NIST Webbook |
| tb | 371.46 ± 0.10 | K | NIST Webbook |
| tb | 371.60 | K | NIST Webbook |
| tb | 371.80 ± 0.30 | K | NIST Webbook |
| tb | 371.55 ± 0.10 | K | NIST Webbook |
| tb | 371.46 ± 0.10 | K | NIST Webbook |
| tb | 371.50 ± 0.20 | K | NIST Webbook |
| tb | 371.65 | K | Isobaric Vapor-Liquid Equilibria of Heptane + 1-Butanol and Heptane + 1-Pentanol Systems at (53.3 and 91.3) kPa |
| tb | 371.50 | K | Vapor-Liquid Equilibrium in the Binary Systems 2-Butanol + tert-Amyl Methyl Ether, 2-Butanol + Heptane, and Heptane + tert-Amyl Methyl Ether |

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| tb | 371.56 | K | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| tb | 371.18 | K | Densities and Excess Molar Properties of Dimethyl Carbonate with Alkanes (C6 to C10) and VLE of Dimethyl Carbonate with Alkanes (C9 to C10) at 101.3 kPa |
| tb | 371.35 | K | Isobaric Vapor-Liquid Equilibria and Excess Properties for the Binary Systems of Methyl Esters + Heptane |
| tb | 370.97 | K | A New Test System for Distillation Efficiency Experiments at Elevated Liquid Viscosities: Vapor-Liquid Equilibrium and Liquid Viscosity Data for Cyclopentanol + Cyclohexanol |
| tb | 371.28 | K | Vapor Liquid Equilibria Measurements for Di-n-Propyl Ether and Butyl Ethyl Ether with n-Heptane |
| tb | 371.35 | K | Excess volumes, densities, speeds of sound and viscosities for the binary systems of diisopropyl ether with hydrocarbons at 303.15K |
| tb | 371.53 | K | Isobaric vapor-liquid equilibrium of three binary systems containing dimethyl succinate, dimethyl glutarate and dimethyl adipate at 2, 5.2 and 8.3 kPa |
| tb | 371.50 | K | Excess molar volumes of the ternary system {methylcyclohexane (1) + cyclohexane (2) + n-alkanes (3)} at T = 298.15 K |
| tb | 371.56 | K | Solutions of alkyl methanoates and alkanes: Simultaneous modeling of phase equilibria and mixing properties. Estimation of behavior by UNIFAC with recalculation of parameters |
| tb | 371.64 | K | Isobaric vapor-liquid equilibrium for systems containing sulfur compounds |

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| tb | 371.40 | K | Isobaric vapor-liquid equilibrium for binary systemsof toluene + o-xylene, benzene + o-xylene, nonane + benzene and nonane + heptane at 101.3 kPa |
| tb | 371.64 | K | Isobaric vapor-liquid equilibrium for four binary systems of 3-methylthiophene |
| tb | 371.64 | K | Isobaric vapor-liquid equilibrium for four binary systems of thiophene |
| tb | 371.35 | K | Measurements and correlation of vapour liquid equilibria of 2-butanone and hydrocarbons binary systems at two different pressures |
| tb | 371.47 | K | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| tb | 371.60 | K | KDB |
| tb | 371.65 ± 0.60 | K | NIST Webbook |
| tb | 371.56 ± 0.15 | K | NIST Webbook |
| tb | 371.50 ± 0.50 | K | NIST Webbook |
| tc | 540.20 ± 0.30 | K | NIST Webbook |
| tc | 540.00 ± 1.00 | K | NIST Webbook |
| tc | 542.65 ± 0.50 | K | NIST Webbook |
| tc | 540.16 ± 0.06 | K | NIST Webbook |
| tc | 540.16 ± 0.05 | K | NIST Webbook |
| tc | 540.50 ± 0.55 | K | NIST Webbook |
| tc | 540.53 ± 0.27 | K | NIST Webbook |
| tc | 540.30 ± 0.33 | K | NIST Webbook |
| tc | 540.28 ± 0.20 | K | NIST Webbook |
| tc | 540.60 ± 0.40 | K | NIST Webbook |
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| tc | 540.00 ± 0.30 | K | NIST Webbook |
| tc | 541.00 ± 0.50 | K | NIST Webbook |
| tc | 542.70 ± 0.70 | K | NIST Webbook |
| tc | 539.90 ± 0.30 | K | NIST Webbook |
| tc | 540.14 | K | Experimental determination of critical data of multi-component mixtures containing potential gasoline additives 2-butanol by a flow-type apparatus |
| tc | 539.86 ± 0.07 | K | NIST Webbook |

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| tc | 540.20 ± 0.30 | K | NIST Webbook |
| tc | 540.68 ± 0.08 | K | NIST Webbook |
| tc | 540.20 | K | NIST Webbook |
| tc | 540.17 ± 0.10 | K | NIST Webbook |
| tc | 540.10 | K | NIST Webbook |
| tc | 540.30 | K | NIST Webbook |
| tc | 539.80 ± 0.30 | K | NIST Webbook |
| tc | 540.40 ± 0.40 | K | NIST Webbook |
| tc | 540.00 ± 1.00 | K | NIST Webbook |
| tc | 536.70 ± 4.00 | K | NIST Webbook |
| tc | 540.20 | K | KDB |
| tc | 540.10 | K | Measurement of critical properties for binary and ternary mixtures containing potential gasoline additive diethyl carbonate (DEC) |
| tc | 540.00 | K | Measurement of critical temperatures and critical pressures for binary mixtures of methyl tert-butyl ether (MTBE) + alcohol and MTBE + alkane |
| tc | 540.00 | K | Measurement and correlation of critical properties for binary mixtures and ternary mixtures containing gasoline additives |
| tc | 536.80 ± 2.00 | K | NIST Webbook |
| tc | 540.60 | K | The Critical Temperatures of a Number of (i) (Chloroalkane (C3 C4) + Hydrocarbon (C6 C7)) Binary Mixtures and (ii) (Aromatic Halocarbon (Chlorobenzene, Fluorobenzene, 1,2-Dichlorobenzene, or 1,3-Dichlorobenzene) + Alkane (C8)) Binary Mixtures |
| tc | 540.10 | K | Measurement of Critical Properties for Binary and Ternary Mixtures Containing n-Butanol and n-Alkane |
| tc | 540.14 | K | Determination of the Critical Properties of C6 C10 n-Alkanes and Their Binary Systems Using a Flow Apparatus |
| tf | 182.55 ± 0.20 | K | NIST Webbook |
| tf | 182.54 ± 0.03 | K | NIST Webbook |
| tf | 182.55 ± 0.20 | K | NIST Webbook |

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| tf | 182.54 ± 0.01 | K | NIST Webbook |
| tf | 176.05 ± 1.00 | K | NIST Webbook |
| tf | 183.15 ± 0.30 | K | NIST Webbook |
| tf | 182.65 ± 0.40 | K | NIST Webbook |
| tf | 182.65 ± 0.50 | K | NIST Webbook |
| tf | 182.65 ± 0.50 | K | NIST Webbook |
| tf | 182.50 ± 0.08 | K | NIST Webbook |
| tf | 182.55 ± 0.40 | K | NIST Webbook |
| tf | 182.45 ± 0.50 | K | NIST Webbook |
| tf | 181.95 ± 1.00 | K | NIST Webbook |
| tf | 182.49 ± 0.20 | K | NIST Webbook |
| tf | 182.53 ± 0.15 | K | NIST Webbook |
| tf | 182.34 ± 0.30 | K | NIST Webbook |
| tf | 183.15 ± 1.50 | K | NIST Webbook |
| tf | 183.15 ± 2.00 | K | NIST Webbook |
| tf | 182.35 ± 0.40 | K | NIST Webbook |
| tf | 182.57 ± 0.08 | K | NIST Webbook |
| tf | 182.35 ± 0.30 | K | NIST Webbook |
| tf | 182.55 ± 0.07 | K | NIST Webbook |
| tf | 182.47 ± 0.20 | K | NIST Webbook |
| tf | 183.15 ± 1.50 | K | NIST Webbook |
| tf | 182.55 ± 0.20 | K | NIST Webbook |
| tf | 182.51 ± 0.20 | K | NIST Webbook |
| tf | 182.49 ± 0.15 | K | NIST Webbook |
| tf | 182.50 ± 0.15 | K | NIST Webbook |
| tf | 182.12 ± 0.20 | K | NIST Webbook |
| tf | 182.54 ± 0.02 | K | NIST Webbook |
| tf | 182.31 | K | Aqueous Solubility Prediction Method |
| tf | 182.45 ± 0.30 | K | NIST Webbook |
| tf | 182.45 ± 0.15 | K | NIST Webbook |
| tf | 182.54 ± 0.01 | K | NIST Webbook |
| tf | 182.53 ± 0.02 | K | NIST Webbook |
| tf | 182.45 ± 0.20 | K | NIST Webbook |
| tf | 182.49 ± 0.08 | K | NIST Webbook |
| tf | 182.54 ± 0.03 | K | NIST Webbook |
| tf | 182.50 ± 0.06 | K | NIST Webbook |
| tf | 182.54 ± 0.03 | K | NIST Webbook |
| tf | 182.54 ± 0.05 | K | NIST Webbook |
| tf | 182.65 ± 0.40 | K | NIST Webbook |
| tf | 182.54 ± 0.02 | K | NIST Webbook |
| tf | 182.54 ± 0.03 | K | NIST Webbook |
| tf | 182.50 | K | KDB |
| tf | 183.15 ± 2.00 | K | NIST Webbook |
| tf | 182.56 ± 0.05 | K | NIST Webbook |

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| tf | 182.55 ± 0.02 | K | NIST Webbook |
| tf | 182.58 ± 0.05 | K | NIST Webbook |
| tf | 182.57 ± 0.10 | K | NIST Webbook |
| tf | 182.55 ± 0.20 | K | NIST Webbook |
| tf | 182.55 ± 0.20 | K | NIST Webbook |
| tf | 182.55 ± 0.20 | K | NIST Webbook |
| tf | 182.53 ± 0.10 | K | NIST Webbook |
| tt | 182.53 ± 0.02 | K | NIST Webbook |
| tt | 182.60 ± 0.20 | K | NIST Webbook |
| tt | 182.20 ± 0.20 | K | NIST Webbook |
| tt | 187.57 ± 0.03 | K | NIST Webbook |
| tt | 183.56 ± 0.06 | K | NIST Webbook |
| tt | 182.56 ± 0.03 | K | NIST Webbook |
| tt | 182.55 | K | KDB |
| tt | 183.20 ± 0.10 | K | NIST Webbook |
| tt | 182.57 ± 0.05 | K | NIST Webbook |
| tt | 182.59 ± 0.06 | K | NIST Webbook |
| tt | 182.59 ± 0.02 | K | NIST Webbook |
| tt | 182.70 ± 0.20 | K | NIST Webbook |
| tt | 182.56 ± 0.05 | K | NIST Webbook |
| tt | 182.55 ± 0.03 | K | NIST Webbook |
| tt | 182.55 ± 0.05 | K | NIST Webbook |
| tt | 182.55 ± 0.03 | K | NIST Webbook |
| tt | 182.56 ± 0.04 | K | NIST Webbook |
| tt | 182.56 ± 0.04 | K | NIST Webbook |
| tt | 182.55 ± 0.04 | K | NIST Webbook |
| tt | 182.56 ± 0.20 | K | NIST Webbook |
| tt | 182.55 ± 0.01 | K | NIST Webbook |
| tt | 182.53 ± 0.04 | K | NIST Webbook |
| tt | 182.56 ± 0.05 | K | NIST Webbook |
| tt | 182.56 ± 0.00 | K | NIST Webbook |
| tt | 182.56 ± 0.01 | K | NIST Webbook |
| tt | 182.56 ± 0.01 | K | NIST Webbook |
| tt | 182.55 ± 0.02 | K | NIST Webbook |
| tt | 182.56 ± 0.02 | K | NIST Webbook |
| tt | 182.55 ± 0.04 | K | NIST Webbook |
| tt | 182.55 ± 0.02 | K | NIST Webbook |
| tt | 182.55 ± 0.02 | K | NIST Webbook |
| tt | 182.56 ± 0.20 | K | NIST Webbook |
| vc | 0.428 | m3/kmol | NIST Webbook |
| vc | 0.425 ± 0.001 | m3/kmol | NIST Webbook |
| vc | 0.428 | m3/kmol | KDB |

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|---|---|---|---|
| volm | 1.47e-04 | m3/mol | Thermodynamic study of (heptane + amine) mixtures. II. Excess and partial molar volumes at 298.15 K |
| volm | 1.47e-04 | m3/mol | Thermodynamic Study of Heptane + Silicone Mixtures. Excess Volumes and Enthalpies at 298.15 K |
| zc | 0.2610980 | | KDB |
| zra | 0.26 | | KDB |

# Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 191.50 ± 0.19 | J/mol×K | 357.10 | NIST Webbook |
| cpg | 238.49 ± 0.24 | J/mol×K | 466.10 | NIST Webbook |
| cpg | 225.31 ± 0.23 | J/mol×K | 434.35 | NIST Webbook |
| cpg | 210.75 ± 0.21 | J/mol×K | 400.40 | NIST Webbook |
| cpg | 198.78 ± 0.20 | J/mol×K | 373.15 | NIST Webbook |
| cpl | 228.54 | J/mol×K | 308.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 210.90 | J/mol×K | 300.80 | NIST Webbook |
| cpl | 211.30 | J/mol×K | 298.00 | NIST Webbook |
| cpl | 224.60 | J/mol×K | 296.50 | NIST Webbook |
| cpl | 224.85 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 224.74 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 224.74 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 233.13 | J/mol×K | 299.80 | NIST Webbook |
| cpl | 247.30 | J/mol×K | 332.00 | NIST Webbook |
| cpl | 224.93 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 224.93 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 328.61 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 209.60 | J/mol×K | 250.00 | NIST Webbook |
| cpl | 226.53 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 225.30 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 224.19 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 223.40 | J/mol×K | 298.00 | NIST Webbook |

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|---|---|---|---|---|
| cpl | 224.71 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 255.00 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 226.50 | J/mol×K | 333.15 | NIST Webbook |
| cpl | 220.00 | J/mol×K | 285.00 | NIST Webbook |
| cpl | 224.60 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 225.60 | J/mol×K | 300.00 | NIST Webbook |
| cpl | 224.66 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 224.62 | J/mol×K | 297.86 | NIST Webbook |
| cpl | 224.69 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 224.00 | J/mol×K | 298.00 | NIST Webbook |
| cpl | 224.80 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 225.33 | J/mol×K | 300.00 | NIST Webbook |
| cpl | 224.76 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 224.78 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 224.71 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 224.73 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 224.78 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 224.78 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 224.71 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 225.14 | J/mol×K | 300.00 | NIST Webbook |
| cpl | 224.72 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 222.88 | J/mol×K | 293.15 | NIST Webbook |
| cpl | 224.73 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 224.72 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 224.64 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 240.03 | J/mol×K | 333.15 | Heat Capacities of Binary Mixtures of Acetic Acid with Acetic Anhydride and Methenamine at Different Temperatures |
| cpl | 230.37 | J/mol×K | 313.15 | Heat Capacities of Binary Mixtures of Acetic Acid with Acetic Anhydride and Methenamine at Different Temperatures |

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|---|---|---|---|---|---|
| cpl | 230.87 | J/mol×K | 313.15 | Isobaric Heat Capacity Measurements of Liquid Methane, Ethane, and Propane by Differential Scanning Calorimetry at High Pressures and Low Temperatures | |
| cpl | 229.16 | J/mol×K | 313.15 | Isobaric Heat Capacity Measurements of Liquid Methane, Ethane, and Propane by Differential Scanning Calorimetry at High Pressures and Low Temperatures | |
| cpl | 225.25 | J/mol×K | 303.15 | Isobaric Heat Capacity Measurements of Liquid Methane, Ethane, and Propane by Differential Scanning Calorimetry at High Pressures and Low Temperatures | |
| cpl | 205.11 | J/mol×K | 238.15 | Isobaric Heat Capacity Measurements of Liquid Methane, Ethane, and Propane by Differential Scanning Calorimetry at High Pressures and Low Temperatures | |
| cpl | 206.22 | J/mol×K | 238.15 | Isobaric Heat Capacity Measurements of Liquid Methane, Ethane, and Propane by Differential Scanning Calorimetry at High Pressures and Low Temperatures | |

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| cpl | 201.51 | J/mol×K | 228.15 | Isobaric Heat Capacity Measurements of Liquid Methane, Ethane, and Propane by Differential Scanning Calorimetry at High Pressures and Low Temperatures |
| cpl | 202.31 | J/mol×K | 228.15 | Isobaric Heat Capacity Measurements of Liquid Methane, Ethane, and Propane by Differential Scanning Calorimetry at High Pressures and Low Temperatures |
| cpl | 222.87 | J/mol×K | 293.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 223.23 | J/mol×K | 294.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 223.60 | J/mol×K | 295.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 223.97 | J/mol×K | 296.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |

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|---|---|---|---|---|
| cpl | 224.35 | J/mol×K | 297.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 224.72 | J/mol×K | 298.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 225.10 | J/mol×K | 299.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 225.47 | J/mol×K | 300.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 223.00 | J/mol×K | 298.00 | NIST Webbook |
| cpl | 224.30 | J/mol×K | 298.10 | NIST Webbook |
| cpl | 222.20 | J/mol×K | 299.20 | NIST Webbook |
| cpl | 217.00 | J/mol×K | 303.00 | NIST Webbook |
| cpl | 226.53 | J/mol×K | 303.15 | NIST Webbook |
| cpl | 225.96 | J/mol×K | 303.15 | Isobaric Heat Capacity Measurements of Liquid Methane, Ethane, and Propane by Differential Scanning Calorimetry at High Pressures and Low Temperatures |

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|---|---|---|---|---|
| cpl | 225.87 | J/mol×K | 301.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 226.22 | J/mol×K | 302.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 226.61 | J/mol×K | 303.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 227.00 | J/mol×K | 304.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 227.40 | J/mol×K | 305.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 227.75 | J/mol×K | 306.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |

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| cpl | 230.51 | J/mol×K | 313.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 230.11 | J/mol×K | 312.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 229.71 | J/mol×K | 311.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 229.30 | J/mol×K | 310.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 228.14 | J/mol×K | 307.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| cpl | 228.95 | J/mol×K | 309.15 | Heat Capacity, Speed of Ultrasound, and Density for 1,5-Dibromopentane + Heptane within the Temperature Range from 293.15 K to 313.15 K |

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| dvisc | 0.0001590 | Pa×s | 403.20 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0002487 | Pa×s | 343.15 | Excess Molar Volumes and Viscosities of Binary Mixtures of Dimethyl Carbonate with Chlorobenzene, Hexane, and Heptane from (293.15 to 353.15) K and at Atmospheric Pressure |
| dvisc | 0.0000978 | Pa×s | 473.20 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0001047 | Pa×s | 463.20 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0001135 | Pa×s | 453.10 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0001193 | Pa×s | 443.40 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |

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| dvisc | 0.0001308 | Pa×s | 433.20 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0001392 | Pa×s | 423.20 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0001488 | Pa×s | 413.20 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0001717 | Pa×s | 393.20 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0001853 | Pa×s | 383.20 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0002027 | Pa×s | 373.30 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |

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| dvisc | 0.0002207 | Pa×s | 363.20 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0002382 | Pa×s | 353.30 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0002562 | Pa×s | 343.30 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0002834 | Pa×s | 333.10 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0003097 | Pa×s | 323.00 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0003422 | Pa×s | 313.20 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |

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| dvisc | 0.0003848 | Pa×s | 303.20 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0003830 | Pa×s | 303.15 | Volumetric and Viscous Properties at Several Temperatures for Binary Mixtures of N-Methylpiperazine with Methylcyclohexane or n-Heptane |
| dvisc | 0.0003329 | Pa×s | 313.15 | Viscometric and Volumetric Properties of 10 Regular Binary Systems at 308.15 K and 313.15 K |
| dvisc | 0.0003497 | Pa×s | 308.15 | Viscometric and Volumetric Properties of 10 Regular Binary Systems at 308.15 K and 313.15 K |
| dvisc | 0.0003420 | Pa×s | 313.15 | Volumetric and Viscous Properties at Several Temperatures for Binary Mixtures of N-Methylpiperazine with Methylcyclohexane or n-Heptane |
| dvisc | 0.0004040 | Pa×s | 298.15 | Volumetric and Viscous Properties at Several Temperatures for Binary Mixtures of N-Methylpiperazine with Methylcyclohexane or n-Heptane |

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| dvisc | 0.0003250 | Pa×s | 313.15 | Density, Viscosity, and Speed of Sound of (Methyl Benzoate + Cyclohexane), (Methyl Benzoate + n-Hexane), (Methyl Benzoate + Heptane), and (Methyl Benzoate + Octane) at Temperatures of (303.15, 308.15, and 313.15) K |
| dvisc | 0.0003500 | Pa×s | 308.15 | Density, Viscosity, and Speed of Sound of (Methyl Benzoate + Cyclohexane), (Methyl Benzoate + n-Hexane), (Methyl Benzoate + Heptane), and (Methyl Benzoate + Octane) at Temperatures of (303.15, 308.15, and 313.15) K |
| dvisc | 0.0003750 | Pa×s | 303.15 | Density, Viscosity, and Speed of Sound of (Methyl Benzoate + Cyclohexane), (Methyl Benzoate + n-Hexane), (Methyl Benzoate + Heptane), and (Methyl Benzoate + Octane) at Temperatures of (303.15, 308.15, and 313.15) K |
| dvisc | 0.0003560 | Pa×s | 308.15 | Densities and Viscosities of Binary Mixtures of Tri-n-butyl Phosphate + Cyclohexane, + n-Heptane at T ) (288.15, 293.15, 298.15, 303.15, and 308.15) K |
| dvisc | 0.0003750 | Pa×s | 303.15 | Densities and Viscosities of Binary Mixtures of Tri-n-butyl Phosphate + Cyclohexane, + n-Heptane at T ) (288.15, 293.15, 298.15, 303.15, and 308.15) K |

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| dvisc | 0.0003960 | Pa×s | 298.15 | Densities and Viscosities of Binary Mixtures of Tri-n-butyl Phosphate + Cyclohexane, + n-Heptane at T ) (288.15, 293.15, 298.15, 303.15, and 308.15) K |
| dvisc | 0.0004170 | Pa×s | 293.15 | Densities and Viscosities of Binary Mixtures of Tri-n-butyl Phosphate + Cyclohexane, + n-Heptane at T ) (288.15, 293.15, 298.15, 303.15, and 308.15) K |
| dvisc | 0.0000896 | Pa×s | 483.10 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0000817 | Pa×s | 493.20 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0000745 | Pa×s | 503.20 | Viscosity measurements of hydrocarbon fuel at temperatures from (303.2 to 513.2) K and pressures up to 5.1 MPa using a two-capillary viscometer |
| dvisc | 0.0004009 | Pa×s | 298.15 | Thermodynamic Properties of Binary Mixtures of p-Xylene with Cyclohexane, Heptane, Octane, and N-Methyl-2-pyrrolidone at Several Temperatures |

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|---|---|---|---|---|
| dvisc | 0.0003750 | Pa×s | 303.15 | Thermodynamic Properties of Binary Mixtures of p-Xylene with Cyclohexane, Heptane, Octane, and N-Methyl-2-pyrrolidone at Several Temperatures |
| dvisc | 0.0003373 | Pa×s | 313.15 | Thermodynamic Properties of Binary Mixtures of p-Xylene with Cyclohexane, Heptane, Octane, and N-Methyl-2-pyrrolidone at Several Temperatures |
| dvisc | 0.0003074 | Pa×s | 323.15 | Thermodynamic Properties of Binary Mixtures of p-Xylene with Cyclohexane, Heptane, Octane, and N-Methyl-2-pyrrolidone at Several Temperatures |
| dvisc | 0.0002793 | Pa×s | 333.15 | Thermodynamic Properties of Binary Mixtures of p-Xylene with Cyclohexane, Heptane, Octane, and N-Methyl-2-pyrrolidone at Several Temperatures |
| dvisc | 0.0002541 | Pa×s | 343.15 | Thermodynamic Properties of Binary Mixtures of p-Xylene with Cyclohexane, Heptane, Octane, and N-Methyl-2-pyrrolidone at Several Temperatures |
| dvisc | 0.0004038 | Pa×s | 293.15 | Excess Molar Volumes and Viscosities of Binary Mixtures of Dimethyl Carbonate with Chlorobenzene, Hexane, and Heptane from (293.15 to 353.15) K and at Atmospheric Pressure |

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| dvisc | 0.0003831 | Pa×s | 298.15 | Excess Molar Volumes and Viscosities of Binary Mixtures of Dimethyl Carbonate with Chlorobenzene, Hexane, and Heptane from (293.15 to 353.15) K and at Atmospheric Pressure |
| dvisc | 0.0003629 | Pa×s | 303.15 | Excess Molar Volumes and Viscosities of Binary Mixtures of Dimethyl Carbonate with Chlorobenzene, Hexane, and Heptane from (293.15 to 353.15) K and at Atmospheric Pressure |
| dvisc | 0.0003274 | Pa×s | 313.15 | Excess Molar Volumes and Viscosities of Binary Mixtures of Dimethyl Carbonate with Chlorobenzene, Hexane, and Heptane from (293.15 to 353.15) K and at Atmospheric Pressure |
| dvisc | 0.0002980 | Pa×s | 323.15 | Excess Molar Volumes and Viscosities of Binary Mixtures of Dimethyl Carbonate with Chlorobenzene, Hexane, and Heptane from (293.15 to 353.15) K and at Atmospheric Pressure |
| dvisc | 0.0002704 | Pa×s | 333.15 | Excess Molar Volumes and Viscosities of Binary Mixtures of Dimethyl Carbonate with Chlorobenzene, Hexane, and Heptane from (293.15 to 353.15) K and at Atmospheric Pressure |

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| dvisc | 0.0005260 | Pa×s | 273.15 | Densities and Viscosities of MTBE + Heptane or Octane at p ) 0.1 MPa from (273.15 to 363.15) K |
| dvisc | 0.0004950 | Pa×s | 278.15 | Densities and Viscosities of MTBE + Heptane or Octane at p ) 0.1 MPa from (273.15 to 363.15) K |
| dvisc | 0.0004650 | Pa×s | 283.15 | Densities and Viscosities of MTBE + Heptane or Octane at p ) 0.1 MPa from (273.15 to 363.15) K |
| dvisc | 0.0004380 | Pa×s | 288.15 | Densities and Viscosities of MTBE + Heptane or Octane at p ) 0.1 MPa from (273.15 to 363.15) K |
| dvisc | 0.0004150 | Pa×s | 293.15 | Densities and Viscosities of MTBE + Heptane or Octane at p ) 0.1 MPa from (273.15 to 363.15) K |
| dvisc | 0.0003920 | Pa×s | 298.15 | Densities and Viscosities of MTBE + Heptane or Octane at p ) 0.1 MPa from (273.15 to 363.15) K |
| dvisc | 0.0003720 | Pa×s | 303.15 | Densities and Viscosities of MTBE + Heptane or Octane at p ) 0.1 MPa from (273.15 to 363.15) K |
| dvisc | 0.0003540 | Pa×s | 308.15 | Densities and Viscosities of MTBE + Heptane or Octane at p ) 0.1 MPa from (273.15 to 363.15) K |

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| dvisc | 0.0004410 | Pa×s | 288.15 | Densities and Viscosities of Binary Mixtures of Tri-n-butyl Phosphate + Cyclohexane, + n-Heptane at T ) (288.15, 293.15, 298.15, 303.15, and 308.15) K |
| dvisc | 0.0004142 | Pa×s | 293.15 | Densities and Viscosities of Ternary Mixtures of Heptane, Octane, Nonane, and Hexyl Benzene from 293.15 K to 313.15 K |
| dvisc | 0.0003928 | Pa×s | 298.15 | Densities and Viscosities of Ternary Mixtures of Heptane, Octane, Nonane, and Hexyl Benzene from 293.15 K to 313.15 K |
| dvisc | 0.0003728 | Pa×s | 303.15 | Densities and Viscosities of Ternary Mixtures of Heptane, Octane, Nonane, and Hexyl Benzene from 293.15 K to 313.15 K |
| dvisc | 0.0003541 | Pa×s | 308.15 | Densities and Viscosities of Ternary Mixtures of Heptane, Octane, Nonane, and Hexyl Benzene from 293.15 K to 313.15 K |
| dvisc | 0.0003374 | Pa×s | 313.15 | Densities and Viscosities of Ternary Mixtures of Heptane, Octane, Nonane, and Hexyl Benzene from 293.15 K to 313.15 K |
| dvisc | 0.0003360 | Pa×s | 313.15 | Densities and Viscosities of MTBE + Heptane or Octane at p ) 0.1 MPa from (273.15 to 363.15) K |
| hfust | 14.16 | kJ/mol | 182.20 | NIST Webbook |

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| hfust | 14.04 | kJ/mol | 182.60 | NIST Webbook |
| hfust | 14.03 | kJ/mol | 182.56 | NIST Webbook |
| hfust | 14.06 | kJ/mol | 182.56 | NIST Webbook |
| hfust | 14.06 | kJ/mol | 182.70 | NIST Webbook |
| hfust | 14.04 | kJ/mol | 182.52 | NIST Webbook |
| hfust | 14.02 | kJ/mol | 182.56 | NIST Webbook |
| hfust | 14.02 | kJ/mol | 182.56 | NIST Webbook |
| hfust | 14.16 | kJ/mol | 182.20 | NIST Webbook |
| hfust | 14.04 | kJ/mol | 182.55 | NIST Webbook |
| hfust | 14.04 | kJ/mol | 182.55 | NIST Webbook |
| hfust | 14.05 | kJ/mol | 182.59 | NIST Webbook |
| hfust | 13.99 | kJ/mol | 182.57 | NIST Webbook |
| hfust | 14.04 | kJ/mol | 182.60 | NIST Webbook |
| hsubt | 57.90 | kJ/mol | 183.00 | NIST Webbook |
| hvapt | 33.20 ± 0.10 | kJ/mol | 350.00 | NIST Webbook |
| hvapt | 36.00 | kJ/mol | 335.50 | NIST Webbook |
| hvapt | 32.00 | kJ/mol | 371.00 | NIST Webbook |
| hvapt | 35.50 | kJ/mol | 353.50 | NIST Webbook |
| hvapt | 33.10 ± 0.10 | kJ/mol | 353.00 | NIST Webbook |
| hvapt | 34.40 ± 0.10 | kJ/mol | 333.00 | NIST Webbook |
| hvapt | 34.50 ± 0.10 | kJ/mol | 331.00 | NIST Webbook |
| hvapt | 35.60 ± 0.10 | kJ/mol | 313.00 | NIST Webbook |
| hvapt | 36.10 | kJ/mol | 330.50 | NIST Webbook |
| hvapt | 36.10 | kJ/mol | 318.00 | NIST Webbook |
| hvapt | 36.10 | kJ/mol | 336.00 | NIST Webbook |
| hvapt | 35.20 | kJ/mol | 360.50 | NIST Webbook |
| hvapt | 34.70 | kJ/mol | 350.50 | NIST Webbook |
| hvapt | 31.77 | kJ/mol | 371.60 | NIST Webbook |
| hvapt | 36.72 | kJ/mol | 298.00 | Enthalpies of Vaporization and Vapor Pressures of Some Deuterated Hydrocarbons. Liquid-Vapor Pressure Isotope Effects |
| hvapt | 35.40 | kJ/mol | 355.50 | NIST Webbook |
| hvapt | 31.70 | kJ/mol | 371.60 | KDB |
| hvapt | 36.40 | kJ/mol | 318.00 | NIST Webbook |
| kvisc | 0.0000005 | m2/s | 313.15 | Experimental and Predicted Kinematic Viscosities for Alkane + Chloroalkane Mixtures |

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| kvisc | 0.0000006 | m2/s | 298.15 | Experimental and Predicted Kinematic Viscosities for Alkane + Chloroalkane Mixtures |
| kvisc | 0.0000007 | m2/s | 283.15 | Experimental and Predicted Kinematic Viscosities for Alkane + Chloroalkane Mixtures |
| kvisc | 0.0000005 | m2/s | 313.15 | Kinematic Viscosities for Ether + Alkane Mixtures: Experimental Results and UNIFAC-VISCO Parameters |
| kvisc | 0.0000006 | m2/s | 298.15 | Kinematic Viscosities for Ether + Alkane Mixtures: Experimental Results and UNIFAC-VISCO Parameters |
| kvisc | 0.0000007 | m2/s | 283.15 | Kinematic Viscosities for Ether + Alkane Mixtures: Experimental Results and UNIFAC-VISCO Parameters |
| pvap | 1911.60 | kPa | 515.27 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 2019.09 | kPa | 518.99 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 2116.11 | kPa | 522.22 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 2219.70 | kPa | 525.53 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |

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| pvap | 2309.81 | kPa | 528.30 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 2416.50 | kPa | 531.47 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 1793.01 | kPa | 510.95 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 2621.76 | kPa | 537.20 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 1.53 | kPa | 273.15 | Isothermal Vapor-Liquid Equilibria and Excess Enthalpies of (Propyl Ethanoate + Heptane), (Propyl Ethanoate + Cyclohexane), and (Propyl Ethanoate + 1-Hexene) |
| pvap | 2.76 | kPa | 283.15 | Isothermal Vapor-Liquid Equilibria and Excess Enthalpies of (Propyl Ethanoate + Heptane), (Propyl Ethanoate + Cyclohexane), and (Propyl Ethanoate + 1-Hexene) |
| pvap | 4.74 | kPa | 293.15 | Isothermal Vapor-Liquid Equilibria and Excess Enthalpies of (Propyl Ethanoate + Heptane), (Propyl Ethanoate + Cyclohexane), and (Propyl Ethanoate + 1-Hexene) |

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| pvap | 6.10 | kPa | 298.15 | Isothermal Vapor-Liquid Equilibria and Excess Enthalpies of (Propyl Ethanoate + Heptane), (Propyl Ethanoate + Cyclohexane), and (Propyl Ethanoate + 1-Hexene) |
| pvap | 7.79 | kPa | 303.15 | Isothermal Vapor-Liquid Equilibria and Excess Enthalpies of (Propyl Ethanoate + Heptane), (Propyl Ethanoate + Cyclohexane), and (Propyl Ethanoate + 1-Hexene) |
| pvap | 12.32 | kPa | 313.15 | Isothermal Vapor-Liquid Equilibria and Excess Enthalpies of (Propyl Ethanoate + Heptane), (Propyl Ethanoate + Cyclohexane), and (Propyl Ethanoate + 1-Hexene) |
| pvap | 18.85 | kPa | 323.15 | Isothermal Vapor-Liquid Equilibria and Excess Enthalpies of (Propyl Ethanoate + Heptane), (Propyl Ethanoate + Cyclohexane), and (Propyl Ethanoate + 1-Hexene) |
| pvap | 27.99 | kPa | 333.15 | Isothermal Vapor-Liquid Equilibria and Excess Enthalpies of (Propyl Ethanoate + Heptane), (Propyl Ethanoate + Cyclohexane), and (Propyl Ethanoate + 1-Hexene) |

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| pvap | 40.43 | kPa | 343.15 | Isothermal Vapor-Liquid Equilibria and Excess Enthalpies of (Propyl Ethanoate + Heptane), (Propyl Ethanoate + Cyclohexane), and (Propyl Ethanoate + 1-Hexene) | |
| pvap | 56.99 | kPa | 353.15 | Isothermal Vapor-Liquid Equilibria and Excess Enthalpies of (Propyl Ethanoate + Heptane), (Propyl Ethanoate + Cyclohexane), and (Propyl Ethanoate + 1-Hexene) | |
| pvap | 78.59 | kPa | 363.15 | Isothermal Vapor-Liquid Equilibria and Excess Enthalpies of (Propyl Ethanoate + Heptane), (Propyl Ethanoate + Cyclohexane), and (Propyl Ethanoate + 1-Hexene) | |
| pvap | 8.32 | kPa | 305.26 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) | |
| pvap | 10.55 | kPa | 310.22 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) | |
| pvap | 1699.51 | kPa | 507.39 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry | |

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| pvap | 14.07 | kPa | 316.50 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 16.19 | kPa | 319.71 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 19.10 | kPa | 323.62 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 21.45 | kPa | 326.44 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 23.79 | kPa | 329.04 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 26.14 | kPa | 331.48 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |

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| pvap | 27.97 | kPa | 333.21 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 30.51 | kPa | 335.50 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 32.84 | kPa | 337.48 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 35.53 | kPa | 339.56 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 37.87 | kPa | 341.35 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 40.12 | kPa | 342.96 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |

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| pvap | 42.35 | kPa | 344.47 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 44.75 | kPa | 346.04 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 46.71 | kPa | 347.28 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 49.09 | kPa | 348.72 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 51.49 | kPa | 350.12 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 53.41 | kPa | 351.21 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |

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| pvap | 55.76 | kPa | 352.49 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 57.88 | kPa | 353.62 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 60.18 | kPa | 354.79 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 63.11 | kPa | 356.25 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 66.42 | kPa | 357.84 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 68.27 | kPa | 358.68 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |

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| pvap | 71.15 | kPa | 359.98 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 74.25 | kPa | 361.33 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 76.55 | kPa | 362.30 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 79.00 | kPa | 363.32 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 81.28 | kPa | 364.24 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 84.05 | kPa | 365.32 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |

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| pvap | 86.30 | kPa | 366.20 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 88.10 | kPa | 366.87 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 91.09 | kPa | 367.97 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 93.46 | kPa | 368.83 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 96.33 | kPa | 369.84 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 98.98 | kPa | 370.85 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |

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| pvap | 100.00 | kPa | 371.11 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 100.68 | kPa | 371.35 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 101.32 | kPa | 371.56 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 103.92 | kPa | 372.42 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 106.48 | kPa | 373.25 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 108.71 | kPa | 373.98 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |

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| pvap | 111.77 | kPa | 374.93 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 113.35 | kPa | 375.41 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 116.21 | kPa | 376.29 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 119.14 | kPa | 377.17 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 120.32 | kPa | 377.51 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 123.70 | kPa | 378.49 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |

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| pvap | 126.80 | kPa | 379.37 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 130.00 | kPa | 380.26 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 132.04 | kPa | 380.83 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 182.39 | kPa | 392.89 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 186.60 | kPa | 393.79 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 189.67 | kPa | 394.43 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |

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| pvap | 192.97 | kPa | 395.10 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 196.04 | kPa | 395.73 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 197.85 | kPa | 396.09 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 199.97 | kPa | 396.50 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 1.54 | kPa | 273.15 | Excess Properties and Vapor Pressure of 2-Diethylaminoethylamine + n-Heptane |
| pvap | 4.76 | kPa | 293.15 | Excess Properties and Vapor Pressure of 2-Diethylaminoethylamine + n-Heptane |
| pvap | 6.14 | kPa | 298.15 | Excess Properties and Vapor Pressure of 2-Diethylaminoethylamine + n-Heptane |

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| pvap | 7.83 | kPa | 303.15 | Excess Properties and Vapor Pressure of 2-Diethylaminoethylamine + n-Heptane |
| pvap | 12.39 | kPa | 313.15 | Excess Properties and Vapor Pressure of 2-Diethylaminoethylamine + n-Heptane |
| pvap | 18.96 | kPa | 323.15 | Excess Properties and Vapor Pressure of 2-Diethylaminoethylamine + n-Heptane |
| pvap | 28.14 | kPa | 333.15 | Excess Properties and Vapor Pressure of 2-Diethylaminoethylamine + n-Heptane |
| pvap | 40.64 | kPa | 343.15 | Excess Properties and Vapor Pressure of 2-Diethylaminoethylamine + n-Heptane |
| pvap | 57.27 | kPa | 353.15 | Excess Properties and Vapor Pressure of 2-Diethylaminoethylamine + n-Heptane |
| pvap | 78.94 | kPa | 363.15 | Excess Properties and Vapor Pressure of 2-Diethylaminoethylamine + n-Heptane |
| pvap | 12.33 | kPa | 313.15 | Vapor-Liquid Equilibria of Binary Mixtures Containing 1-Butanol and Hydrocarbons at 313.15 K |
| pvap | 12.33 | kPa | 313.15 | Vapor Liquid Equilibria of Binary Mixtures Containing 2-Butanol and Hydrocarbons at 313.15 K |

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| pvap | 477.00 | kPa | 433.15 | In Situ Determination of Phase Equilibria of Methyl Benzoate + Alkane Mixtures Using an Infrared Absorption Method. Comparison with Polar GC-SAFT Predictions |
| pvap | 587.00 | kPa | 443.15 | In Situ Determination of Phase Equilibria of Methyl Benzoate + Alkane Mixtures Using an Infrared Absorption Method. Comparison with Polar GC-SAFT Predictions |
| pvap | 703.00 | kPa | 453.15 | In Situ Determination of Phase Equilibria of Methyl Benzoate + Alkane Mixtures Using an Infrared Absorption Method. Comparison with Polar GC-SAFT Predictions |
| pvap | 1604.13 | kPa | 503.59 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 1518.18 | kPa | 500.01 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 1443.40 | kPa | 496.77 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 1384.19 | kPa | 494.11 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 1313.39 | kPa | 490.81 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |

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| pvap | 1242.28 | kPa | 487.36 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 1169.38 | kPa | 483.67 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 1092.41 | kPa | 479.57 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 1030.55 | kPa | 476.11 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 983.90 | kPa | 473.39 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 925.23 | kPa | 469.84 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 850.62 | kPa | 465.07 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 773.29 | kPa | 459.78 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 726.16 | kPa | 456.35 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 666.97 | kPa | 451.80 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 619.76 | kPa | 447.95 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 568.27 | kPa | 443.50 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |

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| pvap | 518.27 | kPa | 438.86 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 467.65 | kPa | 433.81 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 420.15 | kPa | 428.69 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 378.80 | kPa | 423.85 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 341.76 | kPa | 419.17 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 302.76 | kPa | 413.80 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 275.09 | kPa | 409.66 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 248.92 | kPa | 405.44 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 224.89 | kPa | 401.26 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 200.79 | kPa | 396.70 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 185.50 | kPa | 393.58 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 166.41 | kPa | 389.41 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |

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| pvap | 145.56 | kPa | 384.39 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 120.89 | kPa | 377.68 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 110.39 | kPa | 374.50 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 102.90 | kPa | 372.08 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| pvap | 101.30 | kPa | 370.97 | A New Test System for Distillation Efficiency Experiments at Elevated Liquid Viscosities: Vapor-Liquid Equilibrium and Liquid Viscosity Data for Cyclopentanol + Cyclohexanol |
| pvap | 57.10 | kPa | 353.15 | Bubble Pressure Measurement and Prediction for n-Hexadecane and n-Eicosane + Cyclohexane, Methylcyclohexane, and Ethylcyclohexane Binary Mixtures from 303.15 to 393.15 K |
| pvap | 40.60 | kPa | 343.15 | Bubble Pressure Measurement and Prediction for n-Hexadecane and n-Eicosane + Cyclohexane, Methylcyclohexane, and Ethylcyclohexane Binary Mixtures from 303.15 to 393.15 K |

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| pvap | 28.20 | kPa | 333.15 | Bubble Pressure Measurement and Prediction for n-Hexadecane and n-Eicosane + Cyclohexane, Methylcyclohexane, and Ethylcyclohexane Binary Mixtures from 303.15 to 393.15 K |
| pvap | 19.00 | kPa | 323.15 | Bubble Pressure Measurement and Prediction for n-Hexadecane and n-Eicosane + Cyclohexane, Methylcyclohexane, and Ethylcyclohexane Binary Mixtures from 303.15 to 393.15 K |
| pvap | 12.40 | kPa | 313.15 | Bubble Pressure Measurement and Prediction for n-Hexadecane and n-Eicosane + Cyclohexane, Methylcyclohexane, and Ethylcyclohexane Binary Mixtures from 303.15 to 393.15 K |
| pvap | 7.90 | kPa | 303.15 | Bubble Pressure Measurement and Prediction for n-Hexadecane and n-Eicosane + Cyclohexane, Methylcyclohexane, and Ethylcyclohexane Binary Mixtures from 303.15 to 393.15 K |
| pvap | 100.00 | kPa | 371.58 | Isobaric Vapor-Liquid Equilibrium for Two Binary Systems of n-Heptane + sec-Butyl Acetate and Methylcyclohexane + sec-Butyl Acetate under Atmosphere |

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| pvap | 85.00 | kPa | 365.65 | Experimental Vapor-Liquid Equilibria and Thermodynamic Modeling of the Methanol + n-Heptane and 1-Butanol + Aniline Binary Systems |
| pvap | 23.04 | kPa | 328.15 | Isothermal Vapor-Liquid Equilibria for Binary Mixtures of Methyl Nonafluorobutyl Ether + Acetone, Cyclopentyl Methyl Ether, Ethyl Acetate, n-Heptane, Methanol, and Toluene |
| pvap | 18.90 | kPa | 323.15 | Measurement and Correlation of Isothermal Binary Vapor Liquid Equilibrium for Diethyl Carbonate + Isooctane/n-Heptane/Toluene Systems |
| pvap | 15.33 | kPa | 318.15 | Measurement and Correlation of Isothermal Binary Vapor Liquid Equilibrium for Diethyl Carbonate + Isooctane/n-Heptane/Toluene Systems |
| pvap | 12.34 | kPa | 313.15 | Measurement and Correlation of Isothermal Binary Vapor Liquid Equilibrium for Diethyl Carbonate + Isooctane/n-Heptane/Toluene Systems |
| pvap | 9.85 | kPa | 308.15 | Measurement and Correlation of Isothermal Binary Vapor Liquid Equilibrium for Diethyl Carbonate + Isooctane/n-Heptane/Toluene Systems |

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| pvap | 7.79 | kPa | 303.15 | Measurement and Correlation of Isothermal Binary Vapor Liquid Equilibrium for Diethyl Carbonate + Isooctane/n-Heptane/Toluene Systems |
| pvap | 57.09 | kPa | 353.15 | Vapor Liquid Equilibrium and Excess Enthalpy Data for Systems Containing N,N-Dimethylacetamide |
| pvap | 60.00 | kPa | 354.63 | Vapor Liquid Equilibria Measurements for Di-n-Propyl Ether and Butyl Ethyl Ether with n-Heptane |
| pvap | 26.15 | kPa | 331.39 | Vapor Liquid Equilibria Measurements for Di-n-Propyl Ether and Butyl Ethyl Ether with n-Heptane |
| pvap | 30.59 | kPa | 335.45 | Vapor Liquid Equilibria Measurements for Di-n-Propyl Ether and Butyl Ethyl Ether with n-Heptane |
| pvap | 38.89 | kPa | 341.94 | Vapor Liquid Equilibria Measurements for Di-n-Propyl Ether and Butyl Ethyl Ether with n-Heptane |
| pvap | 46.80 | kPa | 347.16 | Vapor Liquid Equilibria Measurements for Di-n-Propyl Ether and Butyl Ethyl Ether with n-Heptane |
| pvap | 50.97 | kPa | 349.68 | Vapor Liquid Equilibria Measurements for Di-n-Propyl Ether and Butyl Ethyl Ether with n-Heptane |

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| pvap | 56.20 | kPa | 352.58 | Vapor Liquid Equilibria Measurements for Di-n-Propyl Ether and Butyl Ethyl Ether with n-Heptane |
| pvap | 64.60 | kPa | 356.78 | Vapor Liquid Equilibria Measurements for Di-n-Propyl Ether and Butyl Ethyl Ether with n-Heptane |
| pvap | 70.24 | kPa | 359.38 | Vapor Liquid Equilibria Measurements for Di-n-Propyl Ether and Butyl Ethyl Ether with n-Heptane |
| pvap | 76.47 | kPa | 362.11 | Vapor Liquid Equilibria Measurements for Di-n-Propyl Ether and Butyl Ethyl Ether with n-Heptane |
| pvap | 83.45 | kPa | 364.95 | Vapor Liquid Equilibria Measurements for Di-n-Propyl Ether and Butyl Ethyl Ether with n-Heptane |
| pvap | 88.40 | kPa | 366.87 | Vapor Liquid Equilibria Measurements for Di-n-Propyl Ether and Butyl Ethyl Ether with n-Heptane |
| pvap | 101.30 | kPa | 371.28 | Vapor Liquid Equilibria Measurements for Di-n-Propyl Ether and Butyl Ethyl Ether with n-Heptane |
| pvap | 94.00 | kPa | 368.85 | Vapor Liquid Equilibria Measurements for the Five Linear C6 Esters with n-Octane |
| pvap | 6.10 | kPa | 298.15 | Thermophysical Study of the n-Hexane or n-Heptane with 1-Chloropropane Systems |

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| pvap | 101.30 | kPa | 371.53 | Isobaric vapor-liquid equilibrium of three binary systems containing dimethyl succinate, dimethyl glutarate and dimethyl adipate at 2, 5.2 and 8.3 kPa |
| pvap | 18.91 | kPa | 323.15 | Measurement and correlation of (vapor + liquid) equilibria for the {2-propoxyethanol (C3E1) + n-hexane} and the {2-propoxyethanol (C3E1) + n-heptane} systems |
| pvap | 12.24 | kPa | 313.15 | Measurement and correlation of (vapor + liquid) equilibria for the {2-propoxyethanol (C3E1) + n-hexane} and the {2-propoxyethanol (C3E1) + n-heptane} systems |
| pvap | 7.92 | kPa | 303.15 | Measurement and correlation of (vapor + liquid) equilibria for the {2-propoxyethanol (C3E1) + n-hexane} and the {2-propoxyethanol (C3E1) + n-heptane} systems |
| pvap | 18.95 | kPa | 323.15 | Phase equilibria for mixtures containing nonionic surfactant systems: Modeling and experiments |

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| pvap | 12.33 | kPa | 313.15 | Phase equilibria for mixtures containing nonionic surfactant systems: Modeling and experiments |
| pvap | 7.87 | kPa | 303.15 | Phase equilibria for mixtures containing nonionic surfactant systems: Modeling and experiments |
| pvap | 40.43 | kPa | 343.15 | Excess properties and vapour pressure of (3-diethylaminopropylamine + n-alkanes) |
| pvap | 27.98 | kPa | 333.15 | Excess properties and vapour pressure of (3-diethylaminopropylamine + n-alkanes) |
| pvap | 18.85 | kPa | 323.15 | Excess properties and vapour pressure of (3-diethylaminopropylamine + n-alkanes) |
| pvap | 12.32 | kPa | 313.15 | Excess properties and vapour pressure of (3-diethylaminopropylamine + n-alkanes) |
| pvap | 7.79 | kPa | 303.15 | Excess properties and vapour pressure of (3-diethylaminopropylamine + n-alkanes) |
| pvap | 9.87 | kPa | 308.15 | Experimental and predicted vapour-liquid equilibrium of the binary mixtures n-heptane + chlorobutane isomers |
| pvap | 6.09 | kPa | 298.15 | Experimental and predicted vapour-liquid equilibrium of the binary mixtures n-heptane + chlorobutane isomers |

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| pvap | 3.63 | kPa | 288.15 | Experimental and predicted vapour-liquid equilibrium of the binary mixtures n-heptane + chlorobutane isomers | |
| pvap | 57.56 | kPa | 353.01 | Isothermal vapor-liquid equilibria and excess molar enthalpy of 2-methylpyrazine (2MP) containing binary mixtures. Comparison with DISQUAC predictions | |
| pvap | 40.62 | kPa | 343.04 | Isothermal vapor-liquid equilibria and excess molar enthalpy of 2-methylpyrazine (2MP) containing binary mixtures. Comparison with DISQUAC predictions | |
| pvap | 28.13 | kPa | 333.07 | Isothermal vapor-liquid equilibria and excess molar enthalpy of 2-methylpyrazine (2MP) containing binary mixtures. Comparison with DISQUAC predictions | |
| pvap | 18.98 | kPa | 323.10 | Isothermal vapor-liquid equilibria and excess molar enthalpy of 2-methylpyrazine (2MP) containing binary mixtures. Comparison with DISQUAC predictions | |
| pvap | 12.41 | kPa | 313.12 | Isothermal vapor-liquid equilibria and excess molar enthalpy of 2-methylpyrazine (2MP) containing binary mixtures. Comparison with DISQUAC predictions | |

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| pvap | 7.81 | kPa | 303.15 | Isothermal vapor-liquid equilibria and excess molar enthalpy of 2-methylpyrazine (2MP) containing binary mixtures. Comparison with DISQUAC predictions |
| pvap | 4.77 | kPa | 293.25 | Isothermal vapor-liquid equilibria and excess molar enthalpy of 2-methylpyrazine (2MP) containing binary mixtures. Comparison with DISQUAC predictions |
| pvap | 2.77 | kPa | 283.21 | Isothermal vapor-liquid equilibria and excess molar enthalpy of 2-methylpyrazine (2MP) containing binary mixtures. Comparison with DISQUAC predictions |
| pvap | 1.55 | kPa | 273.27 | Isothermal vapor-liquid equilibria and excess molar enthalpy of 2-methylpyrazine (2MP) containing binary mixtures. Comparison with DISQUAC predictions |
| pvap | 0.82 | kPa | 263.45 | Isothermal vapor-liquid equilibria and excess molar enthalpy of 2-methylpyrazine (2MP) containing binary mixtures. Comparison with DISQUAC predictions |
| pvap | 12.31 | kPa | 313.15 | Thermodynamic behaviour of second generation biofuels: Vapour liquid equilibria and excess enthalpies of the binary mixtures 2-pentanol and n-heptane or 2,2,4-trimethylpentane |

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| pvap | 2190.00 | kPa | 523.20 | A novel continuous flow apparatus with a video camera system for high pressure phase equilibrium measurements |
| pvap | 2180.00 | kPa | 523.20 | A novel continuous flow apparatus with a video camera system for high pressure phase equilibrium measurements |
| pvap | 2170.00 | kPa | 523.20 | A novel continuous flow apparatus with a video camera system for high pressure phase equilibrium measurements |
| pvap | 1470.00 | kPa | 498.20 | A novel continuous flow apparatus with a video camera system for high pressure phase equilibrium measurements |
| pvap | 1460.00 | kPa | 498.20 | A novel continuous flow apparatus with a video camera system for high pressure phase equilibrium measurements |
| pvap | 1490.00 | kPa | 498.20 | A novel continuous flow apparatus with a video camera system for high pressure phase equilibrium measurements |
| pvap | 980.00 | kPa | 473.20 | A novel continuous flow apparatus with a video camera system for high pressure phase equilibrium measurements |

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| pvap | 980.00 | kPa | 473.10 | A novel continuous flow apparatus with a video camera system for high pressure phase equilibrium measurements |
| pvap | 960.00 | kPa | 473.30 | A novel continuous flow apparatus with a video camera system for high pressure phase equilibrium measurements |
| pvap | 12.34 | kPa | 313.15 | Phase equilibrium properties of the ternary mixture dibutyl ether + toluene + heptane at 313.15 K |
| pvap | 101.30 | kPa | 371.35 | Measurements and correlation of vapour liquid equilibria of 2-butanone and hydrocarbons binary systems at two different pressures |
| pvap | 20.00 | kPa | 324.56 | Measurements and correlation of vapour liquid equilibria of 2-butanone and hydrocarbons binary systems at two different pressures |
| pvap | 100.00 | kPa | 371.20 | Isobaric vapor liquid equilibria for the n-hexane + 2-isopropoxyethanol and n-heptane + 2-isopropoxyethanol systems |
| pvap | 80.00 | kPa | 363.74 | Isobaric vapor liquid equilibria for the n-hexane + 2-isopropoxyethanol and n-heptane + 2-isopropoxyethanol systems |

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| pvap | 60.00 | kPa | 354.72 | Isobaric vapor liquid equilibria for the n-hexane + 2-isopropoxyethanol and n-heptane + 2-isopropoxyethanol systems |
| pvap | 93.32 | kPa | 368.70 | Determination and correlation of vapor liquid equilibrium for binary systems consisting of close-boiling components |
| pvap | 79.99 | kPa | 363.64 | Determination and correlation of vapor liquid equilibrium for binary systems consisting of close-boiling components |
| pvap | 66.66 | kPa | 357.85 | Determination and correlation of vapor liquid equilibrium for binary systems consisting of close-boiling components |
| pvap | 53.33 | kPa | 351.08 | Determination and correlation of vapor liquid equilibrium for binary systems consisting of close-boiling components |
| pvap | 40.00 | kPa | 342.77 | Determination and correlation of vapor liquid equilibrium for binary systems consisting of close-boiling components |
| pvap | 101.46 | kPa | 371.66 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |

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| pvap | 101.30 | kPa | 371.47 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| pvap | 86.56 | kPa | 366.23 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| pvap | 81.76 | kPa | 364.36 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| pvap | 80.00 | kPa | 363.67 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| pvap | 79.55 | kPa | 363.44 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| pvap | 75.87 | kPa | 362.03 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| pvap | 67.99 | kPa | 358.49 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |

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| pvap | 63.98 | kPa | 356.61 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| pvap | 58.57 | kPa | 353.90 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| pvap | 53.30 | kPa | 351.14 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| pvap | 50.62 | kPa | 349.53 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| pvap | 47.80 | kPa | 347.85 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| pvap | 42.88 | kPa | 344.76 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| pvap | 35.66 | kPa | 339.70 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |

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| pvap | 32.24 | kPa | 336.95 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| pvap | 29.69 | kPa | 334.81 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| pvap | 26.49 | kPa | 331.82 | Isobaric vapor liquid equilibria for binary systems of butyl chlorides with heptane, toluene and cyclohexane at 101.3, 80.0 and 53.3 kPa |
| pvap | 13.09 | kPa | 314.93 | Measurements of the Excess Properties and Vapor-Liquid Equilibria at 101.32 kPa for Mixtures of Ethyl Ethanoate + Alkanes (from C5 to C10) |
| pvap | 2525.68 | kPa | 534.57 | Vapor Pressures of n-Heptane Determined by Comparative Ebulliometry |
| rfi | 1.37197 | | 323.15 | Experimental Determination of Densities and Refractive Indices of the Ternary Mixture 2-Methyl-2-propanol + Cyclohexylamine + n-Heptane at T = (303.15 to 323.15) K |
| rfi | 1.38776 | | 293.15 | Mixing properties of binary mixtures presenting azeotropes at several temperatures |

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| rfi | 1.38760 | 293.15 | Bubble points of some binary mixtures formed by o-cresol at 95.75 kPa |
| rfi | 1.38517 | 298.15 | Phase behaviour of 1-methyl-3-octylimidazolium bis[trifluoromethylsulfonyl]imide with thiophene and aliphatic hydrocarbons: The influence of n-alkane chain length |
| rfi | 1.38517 | 298.15 | A study on the liquid liquid equilibria of 1-alkyl-3-methylimidazolium hexafluorophosphate with ethanol and alkanes |
| rfi | 1.38517 | 298.15 | Thiophene separation from aliphatic hydrocarbons using the 1-ethyl-3-methylimidazolium ethylsulfate ionic liquid |
| rfi | 1.38730 | 293.20 | Liquid phase equilibria for mixtures of (an aliphatic hydrocarbon + toluene + gamma-butyrolactone) |
| rfi | 1.38780 | 293.15 | A novel static analytical apparatus for phase equilibrium measurements |
| rfi | 1.37480 | 318.15 | Thermodynamic properties of (an ester + an alkane). XVI. Experimental HEm and V Em values and a new correlation method for (an alkyl ethanoate + an n-alkane) at 318.15 K |
| rfi | 1.38720 | 293.15 | Physical properties of {anisole + n-alkanes} at temperatures between (293.15 and 303.15) K |

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| rfi | 1.38550 | 298.15 | Physical properties of {anisole + n-alkanes} at temperatures between (293.15 and 303.15) K |
| rfi | 1.38270 | 303.15 | Physical properties of {anisole + n-alkanes} at temperatures between (293.15 and 303.15) K |
| rfi | 1.38600 | 298.15 | Excess properties of the binary mixtures of methylcyclohexane + alkanes (C6 to C12) at T = 298.15 K to T = 308.15 K |
| rfi | 1.38360 | 303.15 | Excess properties of the binary mixtures of methylcyclohexane + alkanes (C6 to C12) at T = 298.15 K to T = 308.15 K |
| rfi | 1.38100 | 308.15 | Excess properties of the binary mixtures of methylcyclohexane + alkanes (C6 to C12) at T = 298.15 K to T = 308.15 K |
| rfi | 1.38820 | 293.10 | (Liquid + liquid) equilibria of three ternary systems: (heptane + benzene + N-formylmorpholine), (heptane + toluene + N-formylmorpholine), (heptane + xylene + N-formylmorpholine) from T = (298.15 to 353.15) K |
| rfi | 1.38517 | 298.15 | Mixing properties of binary mixtures presenting azeotropes at several temperatures |

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| rfi | 1.38258 | 303.15 | Mixing properties of binary mixtures presenting azeotropes at several temperatures |
| rfi | 1.50240 | 293.10 | (Liquid + liquid) equilibria of {heptane + xylene + N-formylmorpholine} ternary system |
| rfi | 1.38530 | 298.15 | Thermodynamic and acoustic properties of (heptane + dodecane) mixtures under elevated pressures |
| rfi | 1.38520 | 298.15 | Molar heat capacities for (2-methyl-2-butanol + heptane) mixtures and cyclopentanol at temperatures from (284 to 353) K |
| rfi | 1.38515 | 298.15 | Extraction of toluene from aliphatic compounds using an ionic liquid as solvent: Influence of the alkane on the (liquid + liquid) equilibrium |
| rfi | 1.38529 | 298.15 | Application of [HMim][NTf2], [HMim][TfO] and [BMim][TfO] ionic liquids on the extraction of toluene from alkanes: Effect of the anion and the alkyl chain length of the cation on the LLE |
| rfi | 1.38529 | 298.15 | 1-Alkyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide ionic liquids as solvents in the separation of azeotropic mixtures |

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| rfi | 1.38510 | 298.20 | (Liquid + liquid) equilibria of aqueous solutions of butyric acid with n-heptane and toluene at T = (298.2, 308.2, and 318.2) K |
| rfi | 1.38440 | 303.15 | (Liquid + liquid) equilibria measurements for ternary systems (sulfolane + a carboxylic acid + n-heptane) at T = 303.15 K and at 0.1 MPa |
| rfi | 1.38780 | 293.15 | Isothermal vapour-liquid equilibrium data for the binary systems of (CHF3 or C2F6) and n-heptane |
| rfi | 1.38520 | 298.15 | Isothermal vapour-liquid equilibrium data for the binary systems of (CHF3 or C2F6) and n-heptane |
| rfi | 1.38527 | 298.15 | Measurement of VLE Data by Using an Experimental Installation with Automatic Control: Modeling of Binary Systems of Methyl Acetate or Ethyl Acetate with n-Heptane or 2,2,4-Trimethylpentane at Both 0.1 and 1.5 MPa |
| rfi | 1.38780 | 293.15 | Infinite Dilution Activity Coefficients of Hydrocarbons in Triethylene Glycol and Tetraethylene Glycol |

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| rfi | 1.38510 | 298.15 | Bubble Temperature Measurements on the Binary Mixtures of n-Heptane or Nitrobenzene or Chlorobenzene with Some Chloroethanes and Chloroethylenes at (94.6 to 95.8) kPa |
| rfi | 1.38510 | 298.15 | Bubble-Temperature Measurements on Some Binary Mixtures Formed by Tetrahydrofuran or Amyl Alcohol with Hydrocarbons, Chlorohydrocarbons, or Butanols at (94.6 or 95.8) kPa |
| rfi | 1.38760 | 293.15 | Limiting Activity Coefficients by Comparative Tensimetry: 1-Propanol and 1-Butanol in Heptane and in Octane |
| rfi | 1.38540 | 298.15 | Solubilities of Bis (2,2,6,6-Tetramethyl-4-Piperidinyl) Maleate in Hexane, Heptane, Octane, m-Xylene and Tetrahydrofuran from (253.15 to 310.15) K |
| rfi | 1.38530 | 298.15 | Activity Coefficients at Infinite Dilution of Cylcohexylamine + Octane, Toluene, Ethylbenzene, or Aniline and Excess Molar Volumes in Binary Mixtures of Cyclohexylamine + Heptane, Octane, Nonane, Decane, Undecane, Aniline, or Water |

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| rfi | 1.38500 | 298.20 | Liquid-Liquid Equilibria for Ternary Mixtures (an Ionic Liquid + Benzene +Heptane or Hexadecane) at T ) 298.2 K and Atmospheric Pressure |
| rfi | 1.38530 | 298.15 | Liquid-Liquid(-Liquid) Equilibria in Ternary Systems of Water + Cyclohexylamine + Aromatic Hydrocarbon (Toluene or Propylbenzene) or Aliphatic Hydrocarbon (Heptane or Octane) |
| rfi | 1.38530 | 298.15 | Vapor-Liquid Equilibrium for Binary System of Diethyl Sulfide + n-Heptane and Diethyl Sulfide + 2,2,4-Trimethylpentane at (363.15 and 353.15) K |
| rfi | 1.38515 | 298.15 | Separation of Benzene from Linear Alkanes (C6-C9) Using 1-Ethyl-3-Methylimidazolium Ethylsulfate at T = 298.15 K |
| rfi | 1.38259 | 303.15 | Experimental Determination of Densities and Refractive Indices of the Ternary Mixture 2-Methyl-2-propanol + Cyclohexylamine + n-Heptane at T = (303.15 to 323.15) K |
| rfi | 1.37995 | 308.15 | Experimental Determination of Densities and Refractive Indices of the Ternary Mixture 2-Methyl-2-propanol + Cyclohexylamine + n-Heptane at T = (303.15 to 323.15) K |

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| rfi | 1.37731 | 313.15 | Experimental Determination of Densities and Refractive Indices of the Ternary Mixture 2-Methyl-2-propanol + Cyclohexylamine + n-Heptane at T = (303.15 to 323.15) K |
| rfi | 1.37463 | 318.15 | Experimental Determination of Densities and Refractive Indices of the Ternary Mixture 2-Methyl-2-propanol + Cyclohexylamine + n-Heptane at T = (303.15 to 323.15) K |
| rfi | 1.38515 | 298.15 | Extraction of Benzene from Aliphatic Compounds Using Commercial Ionic Liquids as Solvents: Study of the Liquid Liquid Equilibrium at T = 298.15 K |
| rfi | 1.38530 | 298.15 | Measurements and Correlations of the Isobaric Vapor Liquid Equilibria of Binary Mixtures and Excess Properties for Mixtures Containing an Alkyl (Methyl, Ethyl) Butanoate with an Alkane (Heptane, Nonane) at 101.3 kPa |

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| rfi | 1.38520 | 298.15 | Multiproperty Correlation of Experimental Data of the Binaries Propyl Ethanoate + Alkanes (Pentane to Decane). New Experimental Information for Vapor Liquid Equilibrium and Mixing Properties |
| rfi | 1.37480 | 318.15 | Multiproperty Correlation of Experimental Data of the Binaries Propyl Ethanoate + Alkanes (Pentane to Decane). New Experimental Information for Vapor Liquid Equilibrium and Mixing Properties |
| rfi | 1.38770 | 293.15 | Vapor Liquid Equilibrium Data for the Morpholine-4-carbaldehyde + n-Hexane or n-Heptane Binary Systems Using a Static-Synthetic Apparatus |
| rfi | 1.38530 | 298.15 | Improvements in the Experimentation and the Representation of Thermodynamic Properties (iso-p VLE and yE) of Alkyl Propanoate + Alkane Binaries |
| rfi | 1.38850 | 298.10 | Excess Enthalpies and Thermal Conductivity Coefficients for Binary Mixtures of Carbon Tetrachloride and Four Alkanes (C5 to C8) at a Temperature of 298.15 K |
| rfi | 1.38511 | 298.15 | KDB |

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| rfi | 1.53800 | | 298.15 | Thermodynamic and Acoustic Properties of Mixtures of Dibromomethane + Heptane |
| rhol | 662.52 | kg/m3 | 318.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |
| rhol | 667.37 | kg/m3 | 310.71 | Density of Working Liquids for Diffusion Vacuum Pumps |
| rhol | 675.75 | kg/m3 | 301.62 | Density of Working Liquids for Diffusion Vacuum Pumps |
| rhol | 683.67 | kg/m3 | 293.15 | Density of Working Liquids for Diffusion Vacuum Pumps |
| rhol | 640.29 | kg/m3 | 343.15 | Densities and Viscosities of Corn Oil + n-Alkanes Blends from (288.15 to 343.15) K at 0.1 MPa |
| rhol | 644.84 | kg/m3 | 338.15 | Densities and Viscosities of Corn Oil + n-Alkanes Blends from (288.15 to 343.15) K at 0.1 MPa |
| rhol | 649.33 | kg/m3 | 333.15 | Densities and Viscosities of Corn Oil + n-Alkanes Blends from (288.15 to 343.15) K at 0.1 MPa |
| rhol | 653.79 | kg/m3 | 328.15 | Densities and Viscosities of Corn Oil + n-Alkanes Blends from (288.15 to 343.15) K at 0.1 MPa |
| rhol | 658.19 | kg/m3 | 323.15 | Densities and Viscosities of Corn Oil + n-Alkanes Blends from (288.15 to 343.15) K at 0.1 MPa |

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| rhol | 662.55 | kg/m3 | 318.15 | Densities and Viscosities of Corn Oil + n-Alkanes Blends from (288.15 to 343.15) K at 0.1 MPa |
| rhol | 666.89 | kg/m3 | 313.15 | Densities and Viscosities of Corn Oil + n-Alkanes Blends from (288.15 to 343.15) K at 0.1 MPa |
| rhol | 671.20 | kg/m3 | 308.15 | Densities and Viscosities of Corn Oil + n-Alkanes Blends from (288.15 to 343.15) K at 0.1 MPa |
| rhol | 675.47 | kg/m3 | 303.15 | Densities and Viscosities of Corn Oil + n-Alkanes Blends from (288.15 to 343.15) K at 0.1 MPa |
| rhol | 679.71 | kg/m3 | 298.15 | Densities and Viscosities of Corn Oil + n-Alkanes Blends from (288.15 to 343.15) K at 0.1 MPa |
| rhol | 683.93 | kg/m3 | 293.15 | Densities and Viscosities of Corn Oil + n-Alkanes Blends from (288.15 to 343.15) K at 0.1 MPa |
| rhol | 688.13 | kg/m3 | 288.15 | Densities and Viscosities of Corn Oil + n-Alkanes Blends from (288.15 to 343.15) K at 0.1 MPa |
| rhol | 657.98 | kg/m3 | 323.15 | Density and Surface Tension of Binary Mixtures of 2,2,4-Trimethylpentane + n-Heptane, 2,2,4-Trimethylpentane + n-Octane, Ethyl Acetate + Benzene, and Butanenitrile + Benzene from (293.15 to 323.15) K |

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| rhol | 662.38 | kg/m3 | 318.15 | Density and Surface Tension of Binary Mixtures of 2,2,4-Trimethylpentane + n-Heptane, 2,2,4-Trimethylpentane + n-Octane, Ethyl Acetate + Benzene, and Butanenitrile + Benzene from (293.15 to 323.15) K |
| rhol | 666.74 | kg/m3 | 313.15 | Density and Surface Tension of Binary Mixtures of 2,2,4-Trimethylpentane + n-Heptane, 2,2,4-Trimethylpentane + n-Octane, Ethyl Acetate + Benzene, and Butanenitrile + Benzene from (293.15 to 323.15) K |
| rhol | 671.07 | kg/m3 | 308.15 | Density and Surface Tension of Binary Mixtures of 2,2,4-Trimethylpentane + n-Heptane, 2,2,4-Trimethylpentane + n-Octane, Ethyl Acetate + Benzene, and Butanenitrile + Benzene from (293.15 to 323.15) K |
| rhol | 675.37 | kg/m3 | 303.15 | Density and Surface Tension of Binary Mixtures of 2,2,4-Trimethylpentane + n-Heptane, 2,2,4-Trimethylpentane + n-Octane, Ethyl Acetate + Benzene, and Butanenitrile + Benzene from (293.15 to 323.15) K |

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| rhol | 679.64 | kg/m3 | 298.15 | Density and Surface Tension of Binary Mixtures of 2,2,4-Trimethylpentane + n-Heptane, 2,2,4-Trimethylpentane + n-Octane, Ethyl Acetate + Benzene, and Butanenitrile + Benzene from (293.15 to 323.15) K |
| rhol | 683.89 | kg/m3 | 293.15 | Density and Surface Tension of Binary Mixtures of 2,2,4-Trimethylpentane + n-Heptane, 2,2,4-Trimethylpentane + n-Octane, Ethyl Acetate + Benzene, and Butanenitrile + Benzene from (293.15 to 323.15) K |
| rhol | 665.84 | kg/m3 | 313.15 | Excess molar volumes of (1-chlorobutane +heptane + 2-butanone or 2-pentanone) at 288.15 , 303.15 and 313.15 K . Measurements and correlations. |
| rhol | 675.84 | kg/m3 | 303.15 | Excess molar volumes of (1-chlorobutane +heptane + 2-butanone or 2-pentanone) at 288.15 , 303.15 and 313.15 K . Measurements and correlations. |
| rhol | 688.59 | kg/m3 | 288.15 | Excess molar volumes of (1-chlorobutane +heptane + 2-butanone or 2-pentanone) at 288.15 , 303.15 and 313.15 K . Measurements and correlations. |

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| rhol | 679.49 | kg/m3 | 298.15 | Excess molar volumes and isentropic compressibilities changes of mixing of tetrahydropyran + benzene + cyclo or n-alkanes ternary mixtures at 308.15 K |
| rhol | 657.90 | kg/m3 | 323.15 | Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K |
| rhol | 662.27 | kg/m3 | 318.15 | Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K |
| rhol | 666.62 | kg/m3 | 313.15 | Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K |

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| rhol | 670.94 | kg/m3 | 308.15 | Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K |
| rhol | 659.85 | kg/m3 | 319.85 | Density of Working Liquids for Diffusion Vacuum Pumps |
| rhol | 679.49 | kg/m3 | 298.15 | Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K |
| rhol | 683.73 | kg/m3 | 293.15 | Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K |
| rhol | 687.95 | kg/m3 | 288.15 | Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K |

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| rhol | 679.49 | kg/m3 | 298.15 | Topological and thermodynamic investigations of binary mixtures: Molar excess volumes, molar excess enthalpies and isentropic compressibility changes of mixing |
| rhol | 679.71 | kg/m3 | 298.15 | Liquid-liquid equilibria for (2-hydroxy benzaldehyde + n-alkane) mixtures. Intermolecular and proximity effects in systems containing hydroxyl and aldehyde groups |
| rhol | 642.00 | kg/m3 | 343.15 | Effect of temperature on intermolecular interactions between the organic solvents: Insights from density and excess volume |
| rhol | 651.00 | kg/m3 | 333.15 | Effect of temperature on intermolecular interactions between the organic solvents: Insights from density and excess volume |
| rhol | 660.00 | kg/m3 | 323.15 | Effect of temperature on intermolecular interactions between the organic solvents: Insights from density and excess volume |
| rhol | 668.00 | kg/m3 | 313.15 | Effect of temperature on intermolecular interactions between the organic solvents: Insights from density and excess volume |

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| rhol | 676.00 | kg/m3 | 303.15 | Effect of temperature on intermolecular interactions between the organic solvents: Insights from density and excess volume |
| rhol | 651.92 | kg/m3 | 329.04 | Density of Working Liquids for Diffusion Vacuum Pumps |
| rhol | 685.00 | kg/m3 | 293.15 | Effect of temperature on intermolecular interactions between the organic solvents: Insights from density and excess volume |
| rhol | 689.00 | kg/m3 | 288.15 | Effect of temperature on intermolecular interactions between the organic solvents: Insights from density and excess volume |
| rhol | 679.46 | kg/m3 | 298.15 | Conformational analysis of branched alkanes using limiting partial molar volumes |
| rhol | 683.78 | kg/m3 | 293.15 | Surface tension and density of mixtures of m-xylene + n-alkane at 293.15 K: Analysis under the extended Langmuir and Shereshefsky models |
| rhol | 679.50 | kg/m3 | 298.15 | Fully automatized apparatus for determining speed of sound for liquids in the temperature and pressure interval (283.15-343.15) K and (0.1-95) MPa |

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| rhol | 679.57 | kg/m3 | 298.15 | (Liquid + liquid) equilibrium of ternary and quaternary systems containing heptane, cyclohexane, toluene and the ionic liquid [EMim][N(CN)2]. Experimental data and correlation |
| rhol | 679.54 | kg/m3 | 298.15 | Extraction desulfurization process of fuels with ionic liquids |
| rhol | 679.57 | kg/m3 | 298.15 | Quaternary (liquid + liquid) equilibrium data for the extraction of toluene from alkanes using the ionic liquid [EMim][MSO4] |
| rhol | 679.54 | kg/m3 | 298.15 | Effect of the alkyl side chain of the 1-alkylpiperidinium-based ionic liquids on desulfurization of fuels |
| rhol | 679.48 | kg/m3 | 298.15 | Separation of sulfur compounds from alkanes with 1-alkylcyanopyridinium-based ionic liquids |
| rhol | 679.78 | kg/m3 | 298.15 | Density, viscosity and excess molar volume of binary mixtures of tri-n-octylamine + diluents (n-heptane, n-octane, n-nonane, and n-decane) at various temperatures |
| rhol | 675.54 | kg/m3 | 303.15 | Density, viscosity and excess molar volume of binary mixtures of tri-n-octylamine + diluents (n-heptane, n-octane, n-nonane, and n-decane) at various temperatures |

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| rhol | 684.05 | kg/m3 | 293.15 | Density, viscosity and excess molar volume of binary mixtures of tri-n-octylamine + diluents (n-heptane, n-octane, n-nonane, and n-decane) at various temperatures |
| rhol | 692.44 | kg/m3 | 283.15 | Density, viscosity and excess molar volume of binary mixtures of tri-n-octylamine + diluents (n-heptane, n-octane, n-nonane, and n-decane) at various temperatures |
| rhol | 679.60 | kg/m3 | 298.15 | Cation effect of ammonium imide based ionic liquids in alcohols extraction from alcohol-alkane azeotropic mixtures |
| rhol | 675.23 | kg/m3 | 303.15 | Experimental determination and modelling of densities and excess molar volumes of ternary system (1-butanol + cyclohexylamine + n-heptane) and corresponding binaries from 288.15 to 323.15K |
| rhol | 658.26 | kg/m3 | 323.15 | Volumetric and acoustic properties of binary mixtures of tri-n-butyl phosphate with n-hexane, cyclohexane, and n-heptane from T = (298.15 to 323.15) K |

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| rhol | 662.65 | kg/m3 | 318.15 | Volumetric and acoustic properties of binary mixtures of tri-n-butyl phosphate with n-hexane, cyclohexane, and n-heptane from T = (298.15 to 323.15) K |
| rhol | 667.01 | kg/m3 | 313.15 | Volumetric and acoustic properties of binary mixtures of tri-n-butyl phosphate with n-hexane, cyclohexane, and n-heptane from T = (298.15 to 323.15) K |
| rhol | 671.33 | kg/m3 | 308.15 | Volumetric and acoustic properties of binary mixtures of tri-n-butyl phosphate with n-hexane, cyclohexane, and n-heptane from T = (298.15 to 323.15) K |
| rhol | 675.63 | kg/m3 | 303.15 | Volumetric and acoustic properties of binary mixtures of tri-n-butyl phosphate with n-hexane, cyclohexane, and n-heptane from T = (298.15 to 323.15) K |
| rhol | 679.91 | kg/m3 | 298.15 | Volumetric and acoustic properties of binary mixtures of tri-n-butyl phosphate with n-hexane, cyclohexane, and n-heptane from T = (298.15 to 323.15) K |

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| rhol | 679.71 | kg/m3 | 298.15 | Thermodynamics of mixtures containing amines. XI. Liquid + liquid equilibria and molar excess enthalpies at 298.15 K for N-methylaniline + hydrocarbon systems. Characterization in terms of DISQUAC and ERAS models |
| rhol | 680.00 | kg/m3 | 298.15 | Phase diagrams of (hexane + methanol + 2,2,2-trifluoroethanol) at three temperatures: Measurement and correlation |
| rhol | 679.54 | kg/m3 | 298.15 | Experimental and theoretical study of surface tension of binary mixtures of (n-alkyl acetates + heptane, benzene, and toluene) |
| rhol | 679.47 | kg/m3 | 298.15 | Solvent extraction of thiophene from n-alkanes (C7, C12, and C16) using the ionic liquid [C8mim][BF4] |
| rhol | 626.26 | kg/m3 | 358.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |
| rhol | 630.95 | kg/m3 | 353.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |
| rhol | 635.60 | kg/m3 | 348.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |

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| rhol | 640.19 | kg/m3 | 343.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |
| rhol | 644.74 | kg/m3 | 338.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |
| rhol | 649.24 | kg/m3 | 333.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |
| rhol | 653.71 | kg/m3 | 328.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |
| rhol | 658.13 | kg/m3 | 323.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |
| rhol | 644.32 | kg/m3 | 338.26 | Density of Working Liquids for Diffusion Vacuum Pumps |
| rhol | 635.91 | kg/m3 | 347.53 | Density of Working Liquids for Diffusion Vacuum Pumps |
| rhol | 627.85 | kg/m3 | 356.84 | Density of Working Liquids for Diffusion Vacuum Pumps |
| rhol | 679.00 | kg/m3 | 298.15 | Liquid-Liquid Equilibrium Data for Ternary Systems Containing Alkanes (n-Pentane, n-Hexane, n-Heptane, and n-Octane) + Alcohol (Methanol and Ethanol) + Protic Ionic Liquid (2-HEAF) |

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| rhol | 679.40 | kg/m3 | 298.15 | Viscosities of Dimethyl Carbonate or Diethyl Carbonate with Alkanes at Four Temperatures. New UNIFAC-VISCO Parameters |
| rhol | 683.91 | kg/m3 | 293.15 | Excess Molar Enthalpies for Binary Mixtures of Ethanol + Acetone, + Octane, + Cyclohexane and 1-Propanol + Acetone, + Octane, + Heptane at 323.15 |
| rhol | 682.30 | kg/m3 | 298.20 | Ternary Liquid-Liquid Equilibria for Mixtures of 1-Methyl-3-octylimidazolium Chloride + an Alkanol + an Alkane at 298.2 K and 1 bar |
| rhol | 680.17 | kg/m3 | 298.15 | Excess Enthalpies of Binary Mixtures of 1-Hexene with Some n-Alkanes at 298.15 K |
| rhol | 679.57 | kg/m3 | 298.15 | Application of 1-alkyl-3-methylpyridinium bis(trifluoromethylsulfonyl)imide ionic liquids for the ethanol removal from its mixtures with alkanes |
| rhol | 679.50 | kg/m3 | 298.15 | Vapor-Liquid Equilibrium Data for the Binary Decafluoropentane (HFC-43-10meec) + Heptane, Decafluoropentane + Butyl Ethyl Ether, Octafluorobutane (HFC-338pcc) + Butyl Ethyl Ether, and Heptafluoro Propyl Methyl Ether (HFE-347mcc) + HFC-338pcc Systems at 101.3 kPa |

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| rhol | 679.54 | kg/m3 | 298.15 | Thermodynamics of Mixtures Containing Ethers. Part III. Liquid-Liquid Equilibria for 2,5,8,11-Tetraoxadodecane or 2,5,8,11,14-Pentaoxapentadecane + Selected N-Alkanes |
| rhol | 679.50 | kg/m3 | 298.15 | Vapor-Liquid Equilibria for the Ternary Systems of Methyl tert-Butyl Ether + Methanol + Methylcyclohexane and Methyl tert-Butyl Ether + Methanol + n-Heptane and Constituent Binary Systems at 313.15 K |
| rhol | 679.63 | kg/m3 | 298.15 | Thermodynamics of Mixtures Containing a Strongly Polar Compound. 8. Liquid-Liquid Equilibria for N,N-Dialkylamide + Selected N-Alkanes |
| rhol | 683.82 | kg/m3 | 293.15 | Thermophysical and Acoustical Properties of the Binary Mixtures 1,2-Dibromoethane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| rhol | 679.59 | kg/m3 | 298.15 | Thermophysical and Acoustical Properties of the Binary Mixtures 1,2-Dibromoethane + Heptane within the Temperature Range from 293.15 K to 313.15 K |

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| rhol | 675.31 | kg/m3 | 303.15 | Thermophysical and Acoustical Properties of the Binary Mixtures 1,2-Dibromoethane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| rhol | 671.02 | kg/m3 | 308.15 | Thermophysical and Acoustical Properties of the Binary Mixtures 1,2-Dibromoethane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| rhol | 666.68 | kg/m3 | 313.15 | Thermophysical and Acoustical Properties of the Binary Mixtures 1,2-Dibromoethane + Heptane within the Temperature Range from 293.15 K to 313.15 K |
| rhol | 679.43 | kg/m3 | 298.15 | Liquid-Liquid(-Liquid) Equilibria in Ternary Systems of Aliphatic Hydrocarbons (Heptane or Octane) + Phenols + Water |
| rhol | 679.86 | kg/m3 | 298.20 | Apparent and Partial Molar Volumes at Infinite Dilution and Solid Liquid Equilibria of Dibenzothiophene + Alkane Systems |
| rhol | 679.71 | kg/m3 | 298.15 | Thermodynamics of Mixtures Containing Aromatic Alcohols. 1. Liquid Liquid Equilibria for (Phenylmethanol + Alkane) Systems |

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| rhol | 683.85 | kg/m3 | 293.15 | Thermodynamics of Mixtures Containing Amines. XII. Volumetric and Speed of Sound Data at (293.15, 298.15, and 303.15) K for N-Methylaniline + Hydrocarbon Systems |
| rhol | 679.60 | kg/m3 | 298.15 | Thermodynamics of Mixtures Containing Amines. XII. Volumetric and Speed of Sound Data at (293.15, 298.15, and 303.15) K for N-Methylaniline + Hydrocarbon Systems |
| rhol | 675.53 | kg/m3 | 303.15 | Thermodynamics of Mixtures Containing Amines. XII. Volumetric and Speed of Sound Data at (293.15, 298.15, and 303.15) K for N-Methylaniline + Hydrocarbon Systems |
| rhol | 679.54 | kg/m3 | 298.15 | Excess Enthalpy and Excess Volume for Pyridine + Methyldiethanolamine and Pyridine + Ethanolamine Mixtures |
| rhol | 683.99 | kg/m3 | 293.15 | Excess Molar Volumes and Viscosities of Binary Systems of Butylcyclohexane with n-Alkanes (C7 to C14) at T = 293.15 K to 313.15 K |
| rhol | 679.74 | kg/m3 | 298.15 | Excess Molar Volumes and Viscosities of Binary Systems of Butylcyclohexane with n-Alkanes (C7 to C14) at T = 293.15 K to 313.15 K |

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| rhol | 675.41 | kg/m3 | 303.15 | Excess Molar Volumes and Viscosities of Binary Systems of Butylcyclohexane with n-Alkanes (C7 to C14) at T = 293.15 K to 313.15 K |
| rhol | 671.12 | kg/m3 | 308.15 | Excess Molar Volumes and Viscosities of Binary Systems of Butylcyclohexane with n-Alkanes (C7 to C14) at T = 293.15 K to 313.15 K |
| rhol | 666.92 | kg/m3 | 313.15 | Excess Molar Volumes and Viscosities of Binary Systems of Butylcyclohexane with n-Alkanes (C7 to C14) at T = 293.15 K to 313.15 K |
| rhol | 683.85 | kg/m3 | 293.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, and Surface Tension of Binary Mixtures of n-Heptane + 2,2,4-Trimethylpentane at (293.15 to 338.15) K and 0.1 MPa |
| rhol | 679.61 | kg/m3 | 298.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, and Surface Tension of Binary Mixtures of n-Heptane + 2,2,4-Trimethylpentane at (293.15 to 338.15) K and 0.1 MPa |

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| rhol | 675.35 | kg/m3 | 303.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, and Surface Tension of Binary Mixtures of n-Heptane + 2,2,4-Trimethylpentane at (293.15 to 338.15) K and 0.1 MPa |
| rhol | 679.63 | kg/m3 | 298.15 | Thermodynamics of Mixtures Containing a Strongly Polar Compound. 9. Liquid-Liquid Equilibria for epsilon-Caprolactam + Selected Alkanes |
| rhol | 671.05 | kg/m3 | 308.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, and Surface Tension of Binary Mixtures of n-Heptane + 2,2,4-Trimethylpentane at (293.15 to 338.15) K and 0.1 MPa |
| rhol | 666.73 | kg/m3 | 313.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, and Surface Tension of Binary Mixtures of n-Heptane + 2,2,4-Trimethylpentane at (293.15 to 338.15) K and 0.1 MPa |
| rhol | 662.38 | kg/m3 | 318.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, and Surface Tension of Binary Mixtures of n-Heptane + 2,2,4-Trimethylpentane at (293.15 to 338.15) K and 0.1 MPa |
| rhol | 666.87 | kg/m3 | 313.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |

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| rhol | 657.99 | kg/m3 | 323.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, and Surface Tension of Binary Mixtures of n-Heptane + 2,2,4-Trimethylpentane at (293.15 to 338.15) K and 0.1 MPa |
| rhol | 653.57 | kg/m3 | 328.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, and Surface Tension of Binary Mixtures of n-Heptane + 2,2,4-Trimethylpentane at (293.15 to 338.15) K and 0.1 MPa |
| rhol | 649.11 | kg/m3 | 333.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, and Surface Tension of Binary Mixtures of n-Heptane + 2,2,4-Trimethylpentane at (293.15 to 338.15) K and 0.1 MPa |
| rhol | 644.60 | kg/m3 | 338.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, and Surface Tension of Binary Mixtures of n-Heptane + 2,2,4-Trimethylpentane at (293.15 to 338.15) K and 0.1 MPa |
| rhol | 680.02 | kg/m3 | 298.15 | Binary Liquid Liquid Equilibria of ?-Valerolactone with Some Hydrocarbons |
| rhol | 680.00 | kg/m3 | 298.15 | Liquid-Liquid Equilibrium of (Cyclohexane + 2,2,2-Trifluoroethanol) and (Cyclohexane + Methanol) from (278.15 to 318.15) K |

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| rhol | 680.00 | kg/m3 | 298.15 | Effect of Temperature on Phase Equilibrium of the Mixed-Solvent System of (2,2,2-Trifluoroethanol + Methanol + Cyclohexane) |
| rhol | 687.95 | kg/m3 | 288.15 | Densities and Excess Molar Volumes of 2-Butanol + Cyclohexanamine + Heptane and 2-Butanol + n-Heptane at Temperatures between (288.15 and 323.15) K |
| rhol | 683.73 | kg/m3 | 293.15 | Densities and Excess Molar Volumes of 2-Butanol + Cyclohexanamine + Heptane and 2-Butanol + n-Heptane at Temperatures between (288.15 and 323.15) K |
| rhol | 679.49 | kg/m3 | 298.15 | Densities and Excess Molar Volumes of 2-Butanol + Cyclohexanamine + Heptane and 2-Butanol + n-Heptane at Temperatures between (288.15 and 323.15) K |
| rhol | 675.23 | kg/m3 | 303.15 | Densities and Excess Molar Volumes of 2-Butanol + Cyclohexanamine + Heptane and 2-Butanol + n-Heptane at Temperatures between (288.15 and 323.15) K |
| rhol | 670.94 | kg/m3 | 308.15 | Densities and Excess Molar Volumes of 2-Butanol + Cyclohexanamine + Heptane and 2-Butanol + n-Heptane at Temperatures between (288.15 and 323.15) K |

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| rhol | 666.62 | kg/m3 | 313.15 | Densities and Excess Molar Volumes of 2-Butanol + Cyclohexanamine + Heptane and 2-Butanol + n-Heptane at Temperatures between (288.15 and 323.15) K |
| rhol | 662.27 | kg/m3 | 318.15 | Densities and Excess Molar Volumes of 2-Butanol + Cyclohexanamine + Heptane and 2-Butanol + n-Heptane at Temperatures between (288.15 and 323.15) K |
| rhol | 684.00 | kg/m3 | 293.00 | KDB |
| rhol | 684.00 | kg/m3 | 293.15 | Densities and Kinematic Viscosities of a Quinary Regular Liquid System and Its Five Quaternary Subsystems at 293.15A K and 298.15A K |
| rhol | 679.70 | kg/m3 | 298.15 | Densities and Kinematic Viscosities of a Quinary Regular Liquid System and Its Five Quaternary Subsystems at 293.15A K and 298.15A K |
| rhol | 683.53 | kg/m3 | 293.20 | Isobaric vapour liquid equilibria for binary mixtures of n-heptane with bromobenzene, chlorobenzene and fluorobenzene at atmospheric pressure |
| rhol | 679.54 | kg/m3 | 298.15 | Thermodynamic study of 1,1,2,2-tetrachloroethane + hydrocarbon mixtures I. Excess and solvation enthalpies |

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| rhol | 679.63 | kg/m3 | 298.15 | Thermodynamics of mixtures containing amines VI. Liquid liquid equilibria for mixtures of o-toluidine + selected alkanes |
| rhol | 688.25 | kg/m3 | 288.15 | Excess molar enthalpies of diethyl malonate+ (1-butanol, 2-methyl-1-propanol, 1-pentanol, n-heptane, and ethyl acetate) at T= (288.2, 298.2, 313.2, 328.2, 338.2, and 348.2 K) and p = 101.3 kPa |
| rhol | 679.79 | kg/m3 | 298.15 | Excess molar enthalpies of diethyl malonate+ (1-butanol, 2-methyl-1-propanol, 1-pentanol, n-heptane, and ethyl acetate) at T= (288.2, 298.2, 313.2, 328.2, 338.2, and 348.2 K) and p = 101.3 kPa |
| rhol | 666.89 | kg/m3 | 313.15 | Excess molar enthalpies of diethyl malonate+ (1-butanol, 2-methyl-1-propanol, 1-pentanol, n-heptane, and ethyl acetate) at T= (288.2, 298.2, 313.2, 328.2, 338.2, and 348.2 K) and p = 101.3 kPa |
| rhol | 653.72 | kg/m3 | 328.15 | Excess molar enthalpies of diethyl malonate+ (1-butanol, 2-methyl-1-propanol, 1-pentanol, n-heptane, and ethyl acetate) at T= (288.2, 298.2, 313.2, 328.2, 338.2, and 348.2 K) and p = 101.3 kPa |

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| rhol | 644.77 | kg/m3 | 338.15 | Excess molar enthalpies of diethyl malonate+ (1-butanol, 2-methyl-1-propanol, 1-pentanol, n-heptane, and ethyl acetate) at T= (288.2, 298.2, 313.2, 328.2, 338.2, and 348.2 K) and p = 101.3 kPa |
| rhol | 635.63 | kg/m3 | 348.15 | Excess molar enthalpies of diethyl malonate+ (1-butanol, 2-methyl-1-propanol, 1-pentanol, n-heptane, and ethyl acetate) at T= (288.2, 298.2, 313.2, 328.2, 338.2, and 348.2 K) and p = 101.3 kPa |
| rhol | 657.90 | kg/m3 | 323.15 | Densities and Excess Molar Volumes of 2-Butanol + Cyclohexanamine + Heptane and 2-Butanol + n-Heptane at Temperatures between (288.15 and 323.15) K |
| rhol | 683.80 | kg/m3 | 298.15 | Liquid-liquid equilibria for multicomponent mixtures of 2,2-dimethyl-1,3-dioxolane with n-heptane, toluene, ethanol and water |
| rhol | 679.55 | kg/m3 | 298.15 | Phase behaviour of tricyanomethanide-based ionic liquids with alcohols and hydrocarbons |

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| rhol | 679.60 | kg/m3 | 298.15 | Vapour liquid equilibrium at T = 308.15 K for binary systems: Dibromomethane + n-heptane, bromotrichloromethane + n-heptane, bromotrichloromethane + dibromomethane, bromotrichloromethane + bromochloromethane and dibromomethane + bromochloromethane. Experimental data and modelling |
| rhol | 679.48 | kg/m3 | 298.15 | Separation of pyridine from heptane with tricyanomethanide-based ionic liquids |
| rhol | 683.80 | kg/m3 | 298.15 | Liquid-liquid equilibria for ternary mixtures of 2,2-dimethyl-1,3-dioxolane-4-methanol with n-heptane, toluene, ethanol and water |
| rhol | 675.40 | kg/m3 | 303.15 | Effect of polarity and temperature on the binary interaction between D2EHPA extractant and organic solvents (kerosene, n-heptane, chlorobenzene and 1-octanol): Experimental and thermodynamics |
| rhol | 666.80 | kg/m3 | 313.15 | Effect of polarity and temperature on the binary interaction between D2EHPA extractant and organic solvents (kerosene, n-heptane, chlorobenzene and 1-octanol): Experimental and thermodynamics |

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| rhol | 657.70 | kg/m3 | 323.15 | Effect of polarity and temperature on the binary interaction between D2EHPA extractant and organic solvents (kerosene, n-heptane, chlorobenzene and 1-octanol): Experimental and thermodynamics |
| rhol | 648.40 | kg/m3 | 333.15 | Effect of polarity and temperature on the binary interaction between D2EHPA extractant and organic solvents (kerosene, n-heptane, chlorobenzene and 1-octanol): Experimental and thermodynamics |
| rhol | 681.48 | kg/m3 | 298.15 | Quaternary isothermal vapor-liquid equilibrium of the model biofuel 2-butanone + n-heptane + tetrahydrofuran + cyclohexane using Raman spectroscopic characterization |
| rhol | 690.60 | kg/m3 | 298.15 | Ternary (liquid + liquid) equilibria for mixtures of 1-hexyl-3-methylimidazolium (tetrafluoroborate or hexafluorophosphate) + benzene + an alkane at T = 298.2 K and p = 0.1 MPa |
| rhol | 679.66 | kg/m3 | 298.15 | Thermodynamic and acoustic properties of binary mixtures of alcohols and alkanes. I. Speed of sound in (ethanol + n-heptane) under elevated pressures |

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| rhol | 683.82 | kg/m3 | 293.22 | Thermodynamic and acoustic properties of binary mixtures of alcohols and alkanes. II. Density and heat capacity of (ethanol + n-heptane) under elevated pressures | |
| rhol | 679.75 | kg/m3 | 298.16 | Thermodynamic and acoustic properties of binary mixtures of alcohols and alkanes. II. Density and heat capacity of (ethanol + n-heptane) under elevated pressures | |
| rhol | 675.51 | kg/m3 | 303.17 | Thermodynamic and acoustic properties of binary mixtures of alcohols and alkanes. II. Density and heat capacity of (ethanol + n-heptane) under elevated pressures | |
| rhol | 671.21 | kg/m3 | 308.17 | Thermodynamic and acoustic properties of binary mixtures of alcohols and alkanes. II. Density and heat capacity of (ethanol + n-heptane) under elevated pressures | |
| rhol | 666.97 | kg/m3 | 313.17 | Thermodynamic and acoustic properties of binary mixtures of alcohols and alkanes. II. Density and heat capacity of (ethanol + n-heptane) under elevated pressures | |

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| rhol | 662.67 | kg/m3 | 318.18 | Thermodynamic and acoustic properties of binary mixtures of alcohols and alkanes. II. Density and heat capacity of (ethanol + n-heptane) under elevated pressures |
| rhol | 700.67 | kg/m3 | 273.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |
| rhol | 696.57 | kg/m3 | 278.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |
| rhol | 692.40 | kg/m3 | 283.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |
| rhol | 688.20 | kg/m3 | 288.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |
| rhol | 683.99 | kg/m3 | 293.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |
| rhol | 679.75 | kg/m3 | 298.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |
| rhol | 675.49 | kg/m3 | 303.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |
| rhol | 671.19 | kg/m3 | 308.15 | Experimental measurements and prediction of liquid densities for n-alkane mixtures |

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| rhol | 679.57 | kg/m3 | 298.15 | Capacity of two 1-butyl-1-methylpyrrolidinium-based ionic liquidsfor the extraction of ethanol from its mixtures with heptane and hexane |
| rhol | 680.00 | kg/m3 | 298.15 | Effect of temperature on intermolecular interactions between the organic solvents: Insights from density and excess volume |
| sfust | 78.81 | J/mol×K | 182.56 | NIST Webbook |
| sfust | 76.96 | J/mol×K | 182.59 | NIST Webbook |
| sfust | 76.89 | J/mol×K | 182.55 | NIST Webbook |
| sfust | 76.89 | J/mol×K | 182.55 | NIST Webbook |
| sfust | 76.93 | J/mol×K | 182.52 | NIST Webbook |
| sfust | 77.00 | J/mol×K | 182.70 | NIST Webbook |
| sfust | 77.02 | J/mol×K | 182.56 | NIST Webbook |
| sfust | 76.81 | J/mol×K | 182.56 | NIST Webbook |
| sfust | 77.73 | J/mol×K | 182.20 | NIST Webbook |
| sfust | 77.73 | J/mol×K | 182.20 | NIST Webbook |
| sfust | 76.81 | J/mol×K | 182.56 | NIST Webbook |
| speedsl | 801.60 | m/s | 378.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 400.30 | m/s | 478.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 379.00 | m/s | 483.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |

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| speedsl | 357.40 | m/s | 488.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 335.40 | m/s | 493.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 421.30 | m/s | 473.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 313.00 | m/s | 498.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 290.10 | m/s | 503.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 266.60 | m/s | 508.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 242.40 | m/s | 513.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |

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| speedsl | 217.30 | m/s | 518.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 190.90 | m/s | 523.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 162.70 | m/s | 528.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 442.20 | m/s | 468.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 462.80 | m/s | 463.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 483.30 | m/s | 458.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 503.60 | m/s | 453.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |

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| speedsl | 523.90 | m/s | 448.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 564.00 | m/s | 438.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 603.90 | m/s | 428.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 131.90 | m/s | 533.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 111.10 | m/s | 536.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 643.50 | m/s | 418.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 683.10 | m/s | 408.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |

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| speedsl | 742.30 | m/s | 393.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 861.20 | m/s | 363.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 921.10 | m/s | 348.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 981.50 | m/s | 333.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 1042.00 | m/s | 318.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |
| speedsl | 1108.00 | m/s | 302.15 | Measurement of the Speed of Sound in Hexane and Heptane at Temperatures from (303.15 to 536.15) K and Pressures from (1.0 to 8.5) MPa |

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| speedsl | 1066.90 | m/s | 313.15 | Excess Molar Volumes and Speed of Sound in Bromotrichloromethane + n-Heptane, Dibromomethane + n-Heptane, Bromotrichloromethane + Dibromomethane, and Bromotrichloromethane + Bromochloromethane at Temperatures from (293.15 to 313.15) K |
| speedsl | 1067.10 | m/s | 313.15 | Excess Molar Volumes and Speed of Sound in Bromotrichloromethane + n-Heptane, Dibromomethane + n-Heptane, Bromotrichloromethane + Dibromomethane, and Bromotrichloromethane + Bromochloromethane at Temperatures from (293.15 to 313.15) K |
| speedsl | 1088.10 | m/s | 308.15 | Excess Molar Volumes and Speed of Sound in Bromotrichloromethane + n-Heptane, Dibromomethane + n-Heptane, Bromotrichloromethane + Dibromomethane, and Bromotrichloromethane + Bromochloromethane at Temperatures from (293.15 to 313.15) K |

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| speedsl | 1088.20 | m/s | 308.15 | Excess Molar Volumes and Speed of Sound in Bromotrichloromethane + n-Heptane, Dibromomethane + n-Heptane, Bromotrichloromethane + Dibromomethane, and Bromotrichloromethane + Bromochloromethane at Temperatures from (293.15 to 313.15) K |
| speedsl | 1109.10 | m/s | 303.15 | Excess Molar Volumes and Speed of Sound in Bromotrichloromethane + n-Heptane, Dibromomethane + n-Heptane, Bromotrichloromethane + Dibromomethane, and Bromotrichloromethane + Bromochloromethane at Temperatures from (293.15 to 313.15) K |
| speedsl | 1109.60 | m/s | 303.15 | Excess Molar Volumes and Speed of Sound in Bromotrichloromethane + n-Heptane, Dibromomethane + n-Heptane, Bromotrichloromethane + Dibromomethane, and Bromotrichloromethane + Bromochloromethane at Temperatures from (293.15 to 313.15) K |

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| speedsl | 1130.90 | m/s | 298.15 | Excess Molar Volumes and Speed of Sound in Bromotrichloromethane + n-Heptane, Dibromomethane + n-Heptane, Bromotrichloromethane + Dibromomethane, and Bromotrichloromethane + Bromochloromethane at Temperatures from (293.15 to 313.15) K |
| speedsl | 1108.78 | m/s | 303.10 | Excess molar heat capacities for (decan-1-ol + n-heptane) at temperatures from (290 to 318) K. Experimental results and theoretical description using the ERAS model |
| speedsl | 1131.00 | m/s | 298.15 | Excess Molar Volumes and Speed of Sound in Bromotrichloromethane + n-Heptane, Dibromomethane + n-Heptane, Bromotrichloromethane + Dibromomethane, and Bromotrichloromethane + Bromochloromethane at Temperatures from (293.15 to 313.15) K |
| speedsl | 1152.20 | m/s | 293.15 | Excess Molar Volumes and Speed of Sound in Bromotrichloromethane + n-Heptane, Dibromomethane + n-Heptane, Bromotrichloromethane + Dibromomethane, and Bromotrichloromethane + Bromochloromethane at Temperatures from (293.15 to 313.15) K |

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| speedsl | 1152.60 | m/s | 293.15 | Excess Molar Volumes and Speed of Sound in Bromotrichloromethane + n-Heptane, Dibromomethane + n-Heptane, Bromotrichloromethane + Dibromomethane, and Bromotrichloromethane + Bromochloromethane at Temperatures from (293.15 to 313.15) K |
| speedsl | 1064.29 | m/s | 313.45 | Thermodynamic and Acoustic Properties of Mixtures of 1,6-Dichlorohexane with Heptane from (293 to 313) K |
| speedsl | 1087.42 | m/s | 308.06 | Thermodynamic and Acoustic Properties of Mixtures of 1,6-Dichlorohexane with Heptane from (293 to 313) K |
| speedsl | 1109.45 | m/s | 302.98 | Thermodynamic and Acoustic Properties of Mixtures of 1,6-Dichlorohexane with Heptane from (293 to 313) K |
| speedsl | 1131.06 | m/s | 298.00 | Thermodynamic and Acoustic Properties of Mixtures of 1,6-Dichlorohexane with Heptane from (293 to 313) K |
| speedsl | 1154.11 | m/s | 292.70 | Thermodynamic and Acoustic Properties of Mixtures of 1,6-Dichlorohexane with Heptane from (293 to 313) K |

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| speedsl | 1043.90 | m/s | 318.33 | Excess molar heat capacities for (decan-1-ol + n-heptane) at temperatures from (290 to 318) K. Experimental results and theoretical description using the ERAS model |
| speedsl | 1066.28 | m/s | 313.03 | Excess molar heat capacities for (decan-1-ol + n-heptane) at temperatures from (290 to 318) K. Experimental results and theoretical description using the ERAS model |
| speedsl | 1087.47 | m/s | 308.07 | Excess molar heat capacities for (decan-1-ol + n-heptane) at temperatures from (290 to 318) K. Experimental results and theoretical description using the ERAS model |
| speedsl | 1130.26 | m/s | 298.12 | Excess molar heat capacities for (decan-1-ol + n-heptane) at temperatures from (290 to 318) K. Experimental results and theoretical description using the ERAS model |
| speedsl | 1151.92 | m/s | 293.13 | Excess molar heat capacities for (decan-1-ol + n-heptane) at temperatures from (290 to 318) K. Experimental results and theoretical description using the ERAS model |
| srf | 0.02 | N/m | 288.15 | Interfacial Tensions of Imidazolium-Based Ionic Liquids with N-Alkanes and Cyclohexane |

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|---|---|---|---|---|
| srf | 0.02 | N/m | 318.49 | Surface Tension of 2,2-Dimethylbutane from (233 to 378) K |
| srf | 0.02 | N/m | 303.15 | Surface Tension of Binary Mixtures of 2,2,4-Trimethylpentane +1-Alkanols from 298.15 to 323.15 K |
| srf | 0.02 | N/m | 328.12 | Surface Tension of 2,2-Dimethylbutane from (233 to 378) K |
| srf | 0.02 | N/m | 333.13 | Surface Tension of 2,2-Dimethylbutane from (233 to 378) K |
| srf | 0.02 | N/m | 338.14 | Surface Tension of 2,2-Dimethylbutane from (233 to 378) K |
| srf | 0.02 | N/m | 343.12 | Surface Tension of 2,2-Dimethylbutane from (233 to 378) K |
| srf | 0.01 | N/m | 348.13 | Surface Tension of 2,2-Dimethylbutane from (233 to 378) K |
| srf | 0.01 | N/m | 358.12 | Surface Tension of 2,2-Dimethylbutane from (233 to 378) K |
| srf | 0.02 | N/m | 298.13 | Surface Tension of Diethyl Ether, Diisopropyl Ether, and Dibutyl Ether |
| srf | 0.02 | N/m | 303.18 | Surface Tension of Diethyl Ether, Diisopropyl Ether, and Dibutyl Ether |
| srf | 0.02 | N/m | 308.12 | Surface Tension of Diethyl Ether, Diisopropyl Ether, and Dibutyl Ether |

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|---|---|---|---|---|
| srf | 0.02 | N/m | 313.18 | Surface Tension of Diethyl Ether, Diisopropyl Ether, and Dibutyl Ether |
| srf | 0.02 | N/m | 318.17 | Surface Tension of Diethyl Ether, Diisopropyl Ether, and Dibutyl Ether |
| srf | 0.02 | N/m | 323.20 | Surface Tension of Diethyl Ether, Diisopropyl Ether, and Dibutyl Ether |
| srf | 0.02 | N/m | 328.15 | Surface Tension of Diethyl Ether, Diisopropyl Ether, and Dibutyl Ether |
| srf | 0.02 | N/m | 313.13 | Surface Tension of 2,2-Dimethylbutane from (233 to 378) K |
| srf | 0.02 | N/m | 303.49 | Surface Tension of 2,2-Dimethylbutane from (233 to 378) K |
| srf | 0.02 | N/m | 323.15 | Surface Tension of 2,2-Dimethylbutane from (233 to 378) K |
| srf | 0.02 | N/m | 323.15 | Surface Tension of Dilute Solutions of Alkanes in Cyclohexanol at Different Temperatures |
| srf | 0.02 | N/m | 318.15 | Surface Tension of Dilute Solutions of Alkanes in Cyclohexanol at Different Temperatures |
| srf | 0.02 | N/m | 313.15 | Surface Tension of Dilute Solutions of Alkanes in Cyclohexanol at Different Temperatures |

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|---|---|---|---|---|
| srf | 0.02 | N/m | 308.15 | Surface Tension of Dilute Solutions of Alkanes in Cyclohexanol at Different Temperatures |
| srf | 0.02 | N/m | 303.15 | Surface Tension of Dilute Solutions of Alkanes in Cyclohexanol at Different Temperatures |
| srf | 0.02 | N/m | 298.15 | Surface Tension of Dilute Solutions of Alkanes in Cyclohexanol at Different Temperatures |
| srf | 0.02 | N/m | 293.15 | Surface Tension of Dilute Solutions of Alkanes in Cyclohexanol at Different Temperatures |
| srf | 0.02 | N/m | 328.15 | Interfacial Tensions of Imidazolium-Based Ionic Liquids with N-Alkanes and Cyclohexane |
| srf | 0.02 | N/m | 318.15 | Interfacial Tensions of Imidazolium-Based Ionic Liquids with N-Alkanes and Cyclohexane |
| srf | 0.02 | N/m | 308.15 | Interfacial Tensions of Imidazolium-Based Ionic Liquids with N-Alkanes and Cyclohexane |
| srf | 0.02 | N/m | 298.15 | Interfacial Tensions of Imidazolium-Based Ionic Liquids with N-Alkanes and Cyclohexane |
| srf | 0.02 | N/m | 308.15 | Density and Surface Tension Variation with Temperature for Heptane + 1-Alkanol |

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|---|---|---|---|---|
| srf | 0.02 | N/m | 303.15 | Density and Surface Tension Variation with Temperature for Heptane + 1-Alkanol |
| srf | 0.02 | N/m | 298.15 | Density and Surface Tension Variation with Temperature for Heptane + 1-Alkanol |
| srf | 0.02 | N/m | 293.15 | Density and Surface Tension Variation with Temperature for Heptane + 1-Alkanol |
| srf | 0.02 | N/m | 288.15 | Density and Surface Tension Variation with Temperature for Heptane + 1-Alkanol |
| srf | 0.02 | N/m | 323.15 | Surface Properties of Dilute Solutions of Alkanes in Benzyl Alcohol |
| srf | 0.02 | N/m | 318.15 | Surface Properties of Dilute Solutions of Alkanes in Benzyl Alcohol |
| srf | 0.02 | N/m | 313.15 | Surface Properties of Dilute Solutions of Alkanes in Benzyl Alcohol |
| srf | 0.02 | N/m | 308.15 | Surface Properties of Dilute Solutions of Alkanes in Benzyl Alcohol |
| srf | 0.02 | N/m | 303.15 | Surface Properties of Dilute Solutions of Alkanes in Benzyl Alcohol |
| srf | 0.02 | N/m | 298.15 | Surface Properties of Dilute Solutions of Alkanes in Benzyl Alcohol |
| srf | 0.02 | N/m | 293.15 | Surface Properties of Dilute Solutions of Alkanes in Benzyl Alcohol |
| srf | 0.02 | N/m | 293.20 | KDB |

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|---|---|---|---|---|
| srf | 0.02 | N/m | 342.92 | Surface Tension of Pure Liquids and Binary Liquid Mixtures |
| srf | 0.02 | N/m | 337.88 | Surface Tension of Pure Liquids and Binary Liquid Mixtures |
| srf | 0.02 | N/m | 332.91 | Surface Tension of Pure Liquids and Binary Liquid Mixtures |
| srf | 0.02 | N/m | 327.88 | Surface Tension of Pure Liquids and Binary Liquid Mixtures |
| srf | 0.02 | N/m | 322.86 | Surface Tension of Pure Liquids and Binary Liquid Mixtures |
| srf | 0.02 | N/m | 317.86 | Surface Tension of Pure Liquids and Binary Liquid Mixtures |
| srf | 0.02 | N/m | 312.86 | Surface Tension of Pure Liquids and Binary Liquid Mixtures |
| srf | 0.02 | N/m | 307.86 | Surface Tension of Pure Liquids and Binary Liquid Mixtures |
| srf | 0.02 | N/m | 297.82 | Surface Tension of Pure Liquids and Binary Liquid Mixtures |
| srf | 0.02 | N/m | 292.81 | Surface Tension of Pure Liquids and Binary Liquid Mixtures |
| srf | 0.02 | N/m | 287.81 | Surface Tension of Pure Liquids and Binary Liquid Mixtures |
| srf | 0.02 | N/m | 282.83 | Surface Tension of Pure Liquids and Binary Liquid Mixtures |
| srf | 0.02 | N/m | 277.93 | Surface Tension of Pure Liquids and Binary Liquid Mixtures |
| srf | 0.02 | N/m | 318.15 | Surface Tension of Binary Mixtures of 2,2,4-Trimethylpentane +1-Alkanols from 298.15 to 323.15 K |

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|---|---|---|---|---|
| srf | 0.02 | N/m | 313.15 | Surface Tension of Binary Mixtures of 2,2,4-Trimethylpentane +1-Alkanols from 298.15 to 323.15 K |
| srf | 0.02 | N/m | 308.15 | Surface Tension of Binary Mixtures of 2,2,4-Trimethylpentane +1-Alkanols from 298.15 to 323.15 K |
| srf | 0.02 | N/m | 298.15 | Surface Tension of Binary Mixtures of 2,2,4-Trimethylpentane +1-Alkanols from 298.15 to 323.15 K |
| srf | 0.02 | N/m | 293.15 | Surface Tension of Binary Mixtures of 2,2,4-Trimethylpentane +1-Alkanols from 298.15 to 323.15 K |
| srf | 0.02 | N/m | 323.15 | Experimental and theoretical study of surface tension of n-pentane, n-heptane, and some of their mixtures at different temperatures |
| srf | 0.02 | N/m | 313.15 | Experimental and theoretical study of surface tension of n-pentane, n-heptane, and some of their mixtures at different temperatures |
| srf | 0.02 | N/m | 303.15 | Experimental and theoretical study of surface tension of n-pentane, n-heptane, and some of their mixtures at different temperatures |

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|---|---|---|---|---|
| srf | 0.02 | N/m | 293.15 | Experimental and theoretical study of surface tension of n-pentane, n-heptane, and some of their mixtures at different temperatures |
| srf | 0.02 | N/m | 283.15 | Experimental and theoretical study of surface tension of n-pentane, n-heptane, and some of their mixtures at different temperatures |
| srf | 0.02 | N/m | 302.83 | Surface Tension of Pure Liquids and Binary Liquid Mixtures |

# Pressure Dependent Properties

| Property code | Value | Unit | Pressure [kPa] | Source |
|---|---|---|---|---|
| tbp | 308.91 | K | 10.23 | A novel dynamic recirculating apparatus for vapour-liquid equilibrium measurements at moderate pressures and temperatures |
| tbp | 320.43 | K | 16.91 | A novel dynamic recirculating apparatus for vapour-liquid equilibrium measurements at moderate pressures and temperatures |
| tbp | 328.58 | K | 23.50 | A novel dynamic recirculating apparatus for vapour-liquid equilibrium measurements at moderate pressures and temperatures |

| | | | | |
|---|---|---|---|---|
| tbp | 339.42 | K | 35.39 | A novel dynamic recirculating apparatus for vapour-liquid equilibrium measurements at moderate pressures and temperatures |
| tbp | 352.66 | K | 56.16 | A novel dynamic recirculating apparatus for vapour-liquid equilibrium measurements at moderate pressures and temperatures |
| tbp | 358.24 | K | 67.57 | A novel dynamic recirculating apparatus for vapour-liquid equilibrium measurements at moderate pressures and temperatures |
| tbp | 361.37 | K | 74.44 | A novel dynamic recirculating apparatus for vapour-liquid equilibrium measurements at moderate pressures and temperatures |
| tbp | 363.45 | K | 79.37 | A novel dynamic recirculating apparatus for vapour-liquid equilibrium measurements at moderate pressures and temperatures |
| tbp | 366.31 | K | 86.51 | A novel dynamic recirculating apparatus for vapour-liquid equilibrium measurements at moderate pressures and temperatures |
| tbp | 371.21 | K | 100.11 | A novel dynamic recirculating apparatus for vapour-liquid equilibrium measurements at moderate pressures and temperatures |

# Correlations

| Information | Value |
|---|---|
| Property code | pvap |
| Equation | ln(Pvp) = A + B/(T + C) |
| Coeff. A | 1.42106e+01 |
| Coeff. B | -3.08981e+03 |
| Coeff. C | -4.94170e+01 |
| Temperature range (K), min. | 271.34 |
| Temperature range (K), max. | 396.62 |

| Information | Value |
|---|---|
| Property code | pvap |
| Equation | ln(Pvp) = A + B/T + C*ln(T) + D*T^2 |
| Coeff. A | 1.08146e+02 |
| Coeff. B | -8.03007e+03 |
| Coeff. C | -1.41239e+01 |
| Coeff. D | 1.20486e-05 |
| Temperature range (K), min. | 182.56 |
| Temperature range (K), max. | 540.26 |

# Datasets

## Molar heat capacity at constant pressure, J/K/mol

| Temperature, K - Liquid | Pressure, kPa - Liquid | Molar heat capacity at constant pressure, J/K/mol - Liquid |
|---|---|---|
| 273.15 | 100.00 | 216.20 |
| 273.15 | 5000.00 | 213.10 |
| 273.15 | 10000.00 | 210.90 |
| 273.15 | 15000.00 | 208.10 |
| 273.15 | 20000.00 | 207.20 |
| 293.15 | 100.00 | 224.10 |
| 293.15 | 5000.00 | 223.00 |

| | | |
|---|---|---|
| 293.15 | 10000.00 | 218.20 |
| 293.15 | 15000.00 | 216.80 |
| 293.15 | 20000.00 | 214.40 |
| 313.15 | 100.00 | 233.80 |
| 313.15 | 5000.00 | 230.30 |
| 313.15 | 10000.00 | 226.20 |
| 313.15 | 15000.00 | 223.10 |
| 313.15 | 20000.00 | 221.60 |
| 333.15 | 100.00 | 241.90 |
| 333.15 | 5000.00 | 238.70 |
| 333.15 | 10000.00 | 235.00 |
| 333.15 | 15000.00 | 232.00 |
| 333.15 | 20000.00 | 229.30 |

Reference *https://www.doi.org/10.1016/j.jct.2011.06.019*

## Viscosity, Pa*s

| Temperature, K - Liquid | Pressure, kPa - Liquid | Viscosity, Pa*s - Liquid |
|---|---|---|
| 298.15 | 98.00 | 0.0003960 |
| 298.15 | 24510.00 | 0.0004923 |
| 298.15 | 49030.00 | 0.0006020 |
| 298.15 | 98060.00 | 0.0008489 |
| 298.15 | 147100.00 | 0.0011368 |
| 298.15 | 196130.00 | 0.0014932 |
| 298.15 | 245160.00 | 0.0019099 |
| 303.15 | 98.00 | 0.0003730 |
| 303.15 | 24510.00 | 0.0004737 |
| 303.15 | 49030.00 | 0.0005696 |
| 303.15 | 98060.00 | 0.0008037 |
| 303.15 | 147100.00 | 0.0010712 |
| 303.15 | 196130.00 | 0.0013890 |
| 303.15 | 245160.00 | 0.0017442 |
| 323.11 | 49030.00 | 0.0004816 |
| 323.13 | 24510.00 | 0.0003966 |
| 323.20 | 98060.00 | 0.0006613 |
| 323.20 | 147100.00 | 0.0008700 |
| 323.21 | 196130.00 | 0.0011121 |
| 323.25 | 98.00 | 0.0003107 |
| 323.25 | 245160.00 | 0.0013779 |
| 362.80 | 147100.00 | 0.0006488 |

| | | |
|---|---|---|
| 362.83 | 98060.00 | 0.0004956 |
| 362.85 | 49030.00 | 0.0003626 |
| 362.87 | 196130.00 | 0.0008089 |
| 362.92 | 98.00 | 0.0002146 |
| 362.98 | 245160.00 | 0.0009926 |
| 363.07 | 24510.00 | 0.0002937 |
| 391.93 | 147100.00 | 0.0005310 |
| 392.00 | 196130.00 | 0.0006621 |
| 392.00 | 245160.00 | 0.0008047 |
| 392.04 | 98060.00 | 0.0004119 |
| 393.01 | 24510.00 | 0.0002366 |
| 393.14 | 49030.00 | 0.0002965 |
| 422.17 | 196130.00 | 0.0005591 |
| 422.24 | 98060.00 | 0.0003479 |
| 422.26 | 147100.00 | 0.0004464 |
| 422.58 | 24510.00 | 0.0001951 |
| 422.60 | 49030.00 | 0.0002476 |
| 423.04 | 245160.00 | 0.0006699 |
| 452.91 | 245160.00 | 0.0005770 |
| 453.04 | 196130.00 | 0.0004784 |
| 453.10 | 147100.00 | 0.0003883 |
| 453.16 | 98060.00 | 0.0003007 |
| 453.24 | 49030.00 | 0.0002134 |
| 453.40 | 24510.00 | 0.0001668 |
| 470.10 | 49030.00 | 0.0002021 |
| 470.19 | 24510.00 | 0.0001568 |
| 470.19 | 98060.00 | 0.0002858 |
| 470.19 | 147100.00 | 0.0003672 |
| 470.57 | 196130.00 | 0.0004549 |
| 470.61 | 245160.00 | 0.0005475 |

Reference *https://www.doi.org/10.1007/s10765-012-1373-z*

| Temperature, K | Pressure, kPa | Viscosity, Pa*s |
|---|---|---|
| 293.15 | 20000.00 | 0.0005090 |
| 293.15 | 40000.00 | 0.0006040 |
| 293.15 | 60000.00 | 0.0007060 |
| 293.15 | 80000.00 | 0.0008170 |
| 293.15 | 100000.00 | 0.0009370 |
| 313.15 | 20000.00 | 0.0004080 |
| 313.15 | 40000.00 | 0.0004870 |
| 313.15 | 60000.00 | 0.0005700 |
| 313.15 | 80000.00 | 0.0006580 |

| | | |
|---|---|---|
| 313.15 | 100000.00 | 0.0007510 |
| 333.15 | 20000.00 | 0.0003360 |
| 333.15 | 40000.00 | 0.0004020 |
| 333.15 | 60000.00 | 0.0004720 |
| 333.15 | 80000.00 | 0.0005460 |
| 333.15 | 100000.00 | 0.0006230 |
| 353.15 | 20000.00 | 0.0002890 |
| 353.15 | 40000.00 | 0.0003460 |
| 353.15 | 60000.00 | 0.0004010 |
| 353.15 | 80000.00 | 0.0004580 |
| 353.15 | 100000.00 | 0.0005210 |

Reference *https://www.doi.org/10.1016/j.fluid.2006.01.030*

| Temperature, K | Pressure, kPa | Viscosity, Pa*s |
|---|---|---|
| 303.15 | 101.33 | 0.0003773 |

Reference *https://www.doi.org/10.1016/j.fluid.2010.10.009*

| Temperature, K | Pressure, kPa | Viscosity, Pa*s |
|---|---|---|
| 298.24 | 100.00 | 0.0003880 |
| 306.79 | 5000.00 | 0.0003779 |
| 306.79 | 10000.00 | 0.0004013 |
| 323.93 | 100.00 | 0.0002979 |
| 337.54 | 5000.00 | 0.0002800 |
| 337.54 | 10000.00 | 0.0002978 |
| 348.64 | 100.00 | 0.0002354 |
| 369.35 | 5000.00 | 0.0002116 |
| 369.35 | 10000.00 | 0.0002259 |
| 407.85 | 5000.00 | 0.0001595 |
| 407.85 | 10000.00 | 0.0001718 |
| 449.64 | 5000.00 | 0.0001220 |
| 449.64 | 10000.00 | 0.0001338 |
| 473.54 | 5000.00 | 0.0001012 |
| 473.54 | 10000.00 | 0.0001130 |

Reference *https://www.doi.org/10.1016/j.jct.2006.01.012*

| Temperature, K | Pressure, kPa | Viscosity, Pa*s |
|---|---|---|
| 293.15 | 5000.00 | 0.0004359 |
| 293.15 | 10000.00 | 0.0004603 |

| | | |
|---|---|---|
| 293.15 | 20000.00 | 0.0005074 |
| 293.15 | 30000.00 | 0.0005517 |
| 293.15 | 40000.00 | 0.0005949 |
| 293.15 | 60000.00 | 0.0006912 |
| 293.15 | 80000.00 | 0.0007864 |
| 293.15 | 100000.00 | 0.0009027 |
| 293.15 | 120000.00 | 0.0010307 |
| 313.15 | 5000.00 | 0.0003564 |
| 313.15 | 10000.00 | 0.0003756 |
| 313.15 | 20000.00 | 0.0004131 |
| 313.15 | 30000.00 | 0.0004518 |
| 313.15 | 40000.00 | 0.0004899 |
| 313.15 | 60000.00 | 0.0005683 |
| 313.15 | 80000.00 | 0.0006498 |
| 313.15 | 100000.00 | 0.0007309 |
| 313.15 | 120000.00 | 0.0008186 |

Reference *https://www.doi.org/10.1016/j.jct.2015.12.021*

| Temperature, K | Pressure, kPa | Viscosity, Pa*s |
|---|---|---|
| 303.15 | 100.00 | 0.0003680 |
| 303.15 | 1000.00 | 0.0003710 |
| 303.15 | 5000.00 | 0.0003870 |
| 303.15 | 10000.00 | 0.0004080 |
| 303.15 | 15000.00 | 0.0004290 |
| 303.15 | 20000.00 | 0.0004500 |
| 303.15 | 25000.00 | 0.0004710 |
| 303.15 | 30000.00 | 0.0004920 |
| 303.15 | 35000.00 | 0.0005140 |
| 303.15 | 40000.00 | 0.0005350 |
| 303.15 | 45000.00 | 0.0005560 |
| 303.15 | 50000.00 | 0.0005780 |
| 303.15 | 55000.00 | 0.0006000 |
| 303.15 | 60000.00 | 0.0006220 |
| 313.15 | 100.00 | 0.0003300 |
| 313.15 | 1000.00 | 0.0003340 |
| 313.15 | 5000.00 | 0.0003480 |
| 313.15 | 10000.00 | 0.0003680 |
| 313.15 | 15000.00 | 0.0003880 |
| 313.15 | 20000.00 | 0.0004070 |
| 313.15 | 25000.00 | 0.0004270 |
| 313.15 | 30000.00 | 0.0004460 |
| 313.15 | 35000.00 | 0.0004650 |

| | | |
|---|---|---|
| 313.15 | 40000.00 | 0.0004840 |
| 313.15 | 45000.00 | 0.0005030 |
| 313.15 | 50000.00 | 0.0005220 |
| 313.15 | 55000.00 | 0.0005420 |
| 313.15 | 60000.00 | 0.0005620 |
| 323.15 | 100.00 | 0.0003030 |
| 323.15 | 1000.00 | 0.0003060 |
| 323.15 | 5000.00 | 0.0003190 |
| 323.15 | 10000.00 | 0.0003360 |
| 323.15 | 15000.00 | 0.0003540 |
| 323.15 | 20000.00 | 0.0003710 |
| 323.15 | 25000.00 | 0.0003890 |
| 323.15 | 30000.00 | 0.0004060 |
| 323.15 | 35000.00 | 0.0004240 |
| 323.15 | 40000.00 | 0.0004420 |
| 323.15 | 45000.00 | 0.0004610 |
| 323.15 | 50000.00 | 0.0004790 |
| 323.15 | 55000.00 | 0.0004980 |
| 323.15 | 60000.00 | 0.0005170 |
| 333.15 | 100.00 | 0.0002730 |
| 333.15 | 1000.00 | 0.0002760 |
| 333.15 | 5000.00 | 0.0002890 |
| 333.15 | 10000.00 | 0.0003060 |
| 333.15 | 15000.00 | 0.0003230 |
| 333.15 | 20000.00 | 0.0003400 |
| 333.15 | 25000.00 | 0.0003570 |
| 333.15 | 30000.00 | 0.0003740 |
| 333.15 | 35000.00 | 0.0003900 |
| 333.15 | 40000.00 | 0.0004070 |
| 333.15 | 45000.00 | 0.0004230 |
| 333.15 | 50000.00 | 0.0004390 |
| 333.15 | 55000.00 | 0.0004560 |
| 333.15 | 60000.00 | 0.0004720 |
| 343.15 | 100.00 | 0.0002450 |
| 343.15 | 1000.00 | 0.0002470 |
| 343.15 | 5000.00 | 0.0002600 |
| 343.15 | 10000.00 | 0.0002770 |
| 343.15 | 15000.00 | 0.0002940 |
| 343.15 | 20000.00 | 0.0003100 |
| 343.15 | 25000.00 | 0.0003260 |
| 343.15 | 30000.00 | 0.0003410 |
| 343.15 | 35000.00 | 0.0003570 |
| 343.15 | 40000.00 | 0.0003720 |
| 343.15 | 45000.00 | 0.0003870 |

| | | |
|---|---|---|
| 343.15 | 50000.00 | 0.0004020 |
| 343.15 | 55000.00 | 0.0004160 |
| 343.15 | 60000.00 | 0.0004310 |
| 353.15 | 100.00 | 0.0002310 |
| 353.15 | 1000.00 | 0.0002330 |
| 353.15 | 5000.00 | 0.0002460 |
| 353.15 | 10000.00 | 0.0002620 |
| 353.15 | 15000.00 | 0.0002780 |
| 353.15 | 20000.00 | 0.0002930 |
| 353.15 | 25000.00 | 0.0003070 |
| 353.15 | 30000.00 | 0.0003220 |
| 353.15 | 35000.00 | 0.0003360 |
| 353.15 | 40000.00 | 0.0003490 |
| 353.15 | 45000.00 | 0.0003610 |
| 353.15 | 50000.00 | 0.0003740 |
| 353.15 | 55000.00 | 0.0003860 |
| 353.15 | 60000.00 | 0.0003970 |

Reference *https://www.doi.org/10.1021/je049662k*

## Mass density, kg/m3

| Temperature, K - Liquid | Pressure, kPa - Liquid | Mass density, kg/m3 - Liquid |
|---|---|---|
| 293.00 | 2100.00 | 687.2 |
| 293.00 | 3000.00 | 688.1 |
| 293.00 | 4000.00 | 688.9 |
| 293.00 | 5000.00 | 689.8 |
| 293.00 | 10000.00 | 694.0 |
| 293.00 | 20000.00 | 701.8 |
| 293.00 | 30000.00 | 708.7 |
| 293.00 | 40000.00 | 714.8 |
| 293.00 | 49900.00 | 720.8 |
| 293.00 | 59900.00 | 726.4 |
| 293.00 | 69900.00 | 731.6 |
| 293.00 | 79900.00 | 736.8 |
| 293.00 | 89900.00 | 741.5 |
| 293.00 | 99900.00 | 746.1 |
| 293.00 | 109900.00 | 750.6 |
| 293.00 | 119900.00 | 754.9 |
| 293.00 | 129900.00 | 759.2 |
| 293.00 | 134900.00 | 761.2 |

| | | |
|---|---|---|
| 293.00 | 137400.00 | 762.2 |
| 313.00 | 2100.00 | 671.9 |
| 313.00 | 3000.00 | 672.9 |
| 313.00 | 4000.00 | 673.9 |
| 313.00 | 5000.00 | 674.8 |
| 313.00 | 10000.00 | 679.4 |
| 313.00 | 20000.00 | 688.0 |
| 313.00 | 30000.00 | 695.4 |
| 313.00 | 40000.00 | 702.2 |
| 313.00 | 49900.00 | 708.5 |
| 313.00 | 59900.00 | 714.3 |
| 313.00 | 69900.00 | 720.0 |
| 313.00 | 79900.00 | 725.2 |
| 313.00 | 89900.00 | 730.3 |
| 313.00 | 99900.00 | 735.1 |
| 313.00 | 109900.00 | 739.9 |
| 313.00 | 119900.00 | 744.3 |
| 313.00 | 129900.00 | 748.7 |
| 313.00 | 134900.00 | 751.0 |
| 313.00 | 137400.00 | 751.9 |
| 333.00 | 2100.00 | 654.8 |
| 333.00 | 3000.00 | 656.0 |
| 333.00 | 4000.00 | 657.7 |
| 333.00 | 5000.00 | 658.4 |
| 333.00 | 10000.00 | 663.9 |
| 333.00 | 20000.00 | 673.8 |
| 333.00 | 30000.00 | 682.3 |
| 333.00 | 40000.00 | 689.5 |
| 333.00 | 49900.00 | 696.5 |
| 333.00 | 59900.00 | 703.1 |
| 333.00 | 69900.00 | 708.9 |
| 333.00 | 79900.00 | 714.5 |
| 333.00 | 89900.00 | 720.0 |
| 333.00 | 99900.00 | 725.2 |
| 333.00 | 109900.00 | 729.8 |
| 333.00 | 119900.00 | 734.7 |
| 333.00 | 129900.00 | 739.3 |
| 333.00 | 134900.00 | 741.4 |
| 333.00 | 137400.00 | 742.6 |
| 353.00 | 2100.00 | 636.1 |
| 353.00 | 3000.00 | 637.6 |
| 353.00 | 4000.00 | 639.1 |
| 353.00 | 5000.00 | 640.4 |
| 353.00 | 10000.00 | 647.1 |

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|---|---|---|
| 353.00 | 20000.00 | 658.5 |
| 353.00 | 30000.00 | 668.0 |
| 353.00 | 40000.00 | 676.7 |
| 353.00 | 49900.00 | 684.5 |
| 353.00 | 59900.00 | 691.3 |
| 353.00 | 69900.00 | 697.9 |
| 353.00 | 79900.00 | 703.8 |
| 353.00 | 89900.00 | 709.7 |
| 353.00 | 99900.00 | 715.0 |
| 353.00 | 109900.00 | 720.3 |
| 353.00 | 119900.00 | 725.3 |
| 353.00 | 129900.00 | 730.1 |
| 353.00 | 134900.00 | 732.4 |
| 353.00 | 137400.00 | 733.5 |
| 373.00 | 2100.00 | 616.9 |
| 373.00 | 3000.00 | 618.6 |
| 373.00 | 4000.00 | 620.3 |
| 373.00 | 5000.00 | 622.0 |
| 373.00 | 10000.00 | 629.9 |
| 373.00 | 20000.00 | 643.2 |
| 373.00 | 30000.00 | 654.1 |
| 373.00 | 40000.00 | 663.6 |
| 373.00 | 49900.00 | 672.0 |
| 373.00 | 59900.00 | 679.6 |
| 373.00 | 69900.00 | 686.7 |
| 373.00 | 79900.00 | 693.3 |
| 373.00 | 89900.00 | 699.4 |
| 373.00 | 99900.00 | 705.2 |
| 373.00 | 109900.00 | 710.7 |
| 373.00 | 119900.00 | 716.0 |
| 373.00 | 129900.00 | 720.9 |
| 373.00 | 134900.00 | 723.3 |
| 373.00 | 137400.00 | 724.5 |
| 393.00 | 2100.00 | 596.5 |
| 393.00 | 3000.00 | 598.7 |
| 393.00 | 4000.00 | 600.8 |
| 393.00 | 5000.00 | 602.8 |
| 393.00 | 10000.00 | 612.2 |
| 393.00 | 20000.00 | 627.8 |
| 393.00 | 30000.00 | 640.2 |
| 393.00 | 40000.00 | 650.8 |
| 393.00 | 49900.00 | 659.9 |
| 393.00 | 59900.00 | 668.3 |
| 393.00 | 69900.00 | 675.9 |

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|---|---|---|
| 393.00 | 79900.00 | 682.9 |
| 393.00 | 89900.00 | 689.5 |
| 393.00 | 99900.00 | 695.7 |
| 393.00 | 109900.00 | 701.4 |
| 393.00 | 119900.00 | 706.8 |
| 393.00 | 129900.00 | 712.1 |
| 393.00 | 134900.00 | 714.7 |
| 393.00 | 137400.00 | 715.8 |
| 413.00 | 2100.00 | 574.1 |
| 413.00 | 3000.00 | 577.0 |
| 413.00 | 4000.00 | 579.6 |
| 413.00 | 5000.00 | 582.1 |
| 413.00 | 10000.00 | 593.6 |
| 413.00 | 20000.00 | 611.9 |
| 413.00 | 30000.00 | 626.0 |
| 413.00 | 40000.00 | 637.6 |
| 413.00 | 49900.00 | 647.8 |
| 413.00 | 59900.00 | 656.9 |
| 413.00 | 69900.00 | 664.7 |
| 413.00 | 79900.00 | 672.4 |
| 413.00 | 89900.00 | 679.3 |
| 413.00 | 99900.00 | 685.8 |
| 413.00 | 109900.00 | 692.2 |
| 413.00 | 119900.00 | 698.0 |
| 413.00 | 129900.00 | 703.6 |
| 413.00 | 134900.00 | 706.2 |
| 413.00 | 137400.00 | 707.4 |
| 433.00 | 2100.00 | 550.1 |
| 433.00 | 3000.00 | 553.9 |
| 433.00 | 4000.00 | 557.5 |
| 433.00 | 5000.00 | 560.7 |
| 433.00 | 10000.00 | 574.6 |
| 433.00 | 20000.00 | 595.4 |
| 433.00 | 30000.00 | 611.5 |
| 433.00 | 40000.00 | 624.3 |
| 433.00 | 49900.00 | 635.2 |
| 433.00 | 59900.00 | 644.7 |
| 433.00 | 69900.00 | 653.5 |
| 433.00 | 79900.00 | 661.6 |
| 433.00 | 89900.00 | 669.0 |
| 433.00 | 99900.00 | 676.0 |
| 433.00 | 109900.00 | 682.3 |
| 433.00 | 119900.00 | 688.5 |
| 433.00 | 129900.00 | 694.3 |

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|---|---|---|
| 433.00 | 134900.00 | 697.2 |
| 433.00 | 137400.00 | 698.6 |
| 448.00 | 2100.00 | 531.1 |
| 448.00 | 3000.00 | 535.6 |
| 448.00 | 4000.00 | 539.8 |
| 448.00 | 5000.00 | 543.6 |
| 448.00 | 10000.00 | 560.0 |
| 448.00 | 20000.00 | 583.0 |
| 448.00 | 30000.00 | 600.3 |
| 448.00 | 40000.00 | 614.4 |
| 448.00 | 49900.00 | 626.2 |
| 448.00 | 59900.00 | 636.6 |
| 448.00 | 69900.00 | 646.2 |
| 448.00 | 79900.00 | 654.4 |
| 448.00 | 89900.00 | 661.8 |
| 448.00 | 99900.00 | 669.2 |
| 448.00 | 109900.00 | 675.8 |
| 448.00 | 119900.00 | 682.3 |
| 448.00 | 129900.00 | 688.4 |
| 448.00 | 134900.00 | 691.4 |
| 448.00 | 137400.00 | 692.6 |
| 468.00 | 2100.00 | 501.1 |
| 468.00 | 3000.00 | 507.8 |
| 468.00 | 4000.00 | 513.4 |
| 468.00 | 5000.00 | 518.6 |
| 468.00 | 10000.00 | 539.1 |
| 468.00 | 20000.00 | 566.5 |
| 468.00 | 30000.00 | 586.2 |
| 468.00 | 40000.00 | 601.3 |
| 468.00 | 49900.00 | 614.2 |
| 468.00 | 59900.00 | 625.3 |
| 468.00 | 69900.00 | 635.2 |
| 468.00 | 79900.00 | 644.1 |
| 468.00 | 89900.00 | 652.3 |
| 468.00 | 99900.00 | 659.9 |
| 468.00 | 109900.00 | 667.2 |
| 468.00 | 119900.00 | 673.9 |
| 468.00 | 129900.00 | 679.9 |
| 468.00 | 134900.00 | 682.8 |
| 468.00 | 137400.00 | 684.3 |

Reference *https://www.doi.org/10.1016/j.fluid.2016.09.021*

| **Temperature, K** | **Pressure, kPa** | **Mass density, kg/m3** |
|---|---|---|

| | | |
|---|---|---|
| 233.15 | 101.68 | 733.289 |
| 233.15 | 1104.14 | 733.918 |
| 233.15 | 2003.32 | 734.481 |
| 233.15 | 4006.02 | 735.714 |
| 233.15 | 6004.84 | 736.928 |
| 233.15 | 8009.54 | 738.125 |
| 233.15 | 9956.83 | 739.277 |
| 233.15 | 11864.20 | 740.377 |
| 233.15 | 13984.20 | 741.588 |
| 233.15 | 15994.70 | 742.722 |
| 233.15 | 17888.30 | 743.774 |
| 233.15 | 20074.10 | 744.977 |
| 233.15 | 22023.80 | 746.029 |
| 233.15 | 24017.60 | 747.094 |
| 233.15 | 25954.00 | 748.113 |
| 233.15 | 27944.50 | 749.147 |
| 233.15 | 29979.30 | 750.192 |
| 253.15 | 98.99 | 717.086 |
| 253.15 | 1101.50 | 717.807 |
| 253.15 | 2000.52 | 718.446 |
| 253.15 | 4006.34 | 719.85 |
| 253.15 | 6005.44 | 721.223 |
| 253.15 | 8147.76 | 722.669 |
| 253.15 | 10096.20 | 723.959 |
| 253.15 | 11827.30 | 725.088 |
| 253.15 | 13955.10 | 726.459 |
| 253.15 | 16060.20 | 727.785 |
| 253.15 | 18039.50 | 729.014 |
| 253.15 | 20020.00 | 730.22 |
| 253.15 | 22093.30 | 731.465 |
| 253.15 | 23827.70 | 732.495 |
| 253.15 | 25891.20 | 733.701 |
| 253.15 | 27738.70 | 734.762 |
| 253.15 | 29899.80 | 735.987 |
| 273.15 | 102.15 | 700.687 |
| 273.15 | 1101.26 | 701.507 |
| 273.15 | 2006.30 | 702.244 |
| 273.15 | 4005.43 | 703.841 |
| 273.15 | 6005.46 | 705.403 |
| 273.15 | 8197.47 | 707.077 |
| 273.15 | 10109.30 | 708.507 |
| 273.15 | 12113.70 | 709.976 |
| 273.15 | 14092.30 | 711.403 |
| 273.15 | 16115.70 | 712.831 |

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|---|---|---|
| 273.15 | 18076.00 | 714.19 |
| 273.15 | 20096.30 | 715.565 |
| 273.15 | 22068.90 | 716.883 |
| 273.15 | 24101.50 | 718.226 |
| 273.15 | 25917.60 | 719.397 |
| 273.15 | 27991.30 | 720.718 |
| 273.15 | 29444.50 | 721.633 |
| 293.15 | 98.89 | 683.986 |
| 293.15 | 1104.28 | 684.937 |
| 293.15 | 2003.35 | 685.779 |
| 293.15 | 4003.02 | 687.611 |
| 293.15 | 6003.71 | 689.394 |
| 293.15 | 8007.44 | 691.14 |
| 293.15 | 10027.90 | 692.854 |
| 293.15 | 12138.70 | 694.603 |
| 293.15 | 14007.80 | 696.118 |
| 293.15 | 16160.30 | 697.827 |
| 293.15 | 18149.30 | 699.368 |
| 293.15 | 19992.10 | 700.756 |
| 293.15 | 22123.00 | 702.362 |
| 293.15 | 24036.20 | 703.766 |
| 293.15 | 25999.00 | 705.175 |
| 293.15 | 27982.80 | 706.576 |
| 293.15 | 29985.70 | 707.965 |
| 313.15 | 101.45 | 666.898 |
| 313.15 | 1102.20 | 667.995 |
| 313.15 | 2005.49 | 668.973 |
| 313.15 | 4004.53 | 671.086 |
| 313.15 | 6106.94 | 673.238 |
| 313.15 | 7941.18 | 675.062 |
| 313.15 | 9944.39 | 676.997 |
| 313.15 | 11841.20 | 678.793 |
| 313.15 | 13782.40 | 680.575 |
| 313.15 | 16032.40 | 682.588 |
| 313.15 | 17876.00 | 684.2 |
| 313.15 | 19748.40 | 685.804 |
| 313.15 | 21802.90 | 687.518 |
| 313.15 | 23828.70 | 689.172 |
| 313.15 | 25813.90 | 690.765 |
| 313.15 | 27801.40 | 692.324 |
| 313.15 | 29818.40 | 693.872 |
| 333.15 | 103.00 | 649.298 |
| 333.15 | 1105.97 | 650.588 |
| 333.15 | 2004.12 | 651.723 |

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|---|---|---|
| 333.15 | 4003.59 | 654.18 |
| 333.15 | 6004.59 | 656.549 |
| 333.15 | 8005.55 | 658.837 |
| 333.15 | 9901.48 | 660.933 |
| 333.15 | 12083.40 | 663.274 |
| 333.15 | 14040.10 | 665.309 |
| 333.15 | 16005.20 | 667.293 |
| 333.15 | 17854.30 | 669.109 |
| 333.15 | 19984.70 | 671.149 |
| 333.15 | 21966.60 | 672.997 |
| 333.15 | 23925.50 | 674.778 |
| 333.15 | 25823.40 | 676.467 |
| 333.15 | 27822.80 | 678.205 |
| 333.15 | 30009.20 | 680.058 |
| 353.15 | 99.37 | 631.037 |
| 353.15 | 1182.85 | 632.68 |
| 353.15 | 2156.26 | 634.131 |
| 353.15 | 4140.73 | 636.982 |
| 353.15 | 6175.55 | 639.78 |
| 353.15 | 8138.91 | 642.37 |
| 353.15 | 10095.00 | 644.851 |
| 353.15 | 12083.30 | 647.284 |
| 353.15 | 14039.80 | 649.596 |
| 353.15 | 16039.20 | 651.883 |
| 353.15 | 18008.20 | 654.064 |
| 353.15 | 19996.30 | 656.201 |
| 353.15 | 21955.50 | 658.247 |
| 353.15 | 23925.40 | 660.247 |
| 353.15 | 25887.20 | 662.188 |
| 353.15 | 27855.00 | 664.084 |
| 353.15 | 29976.00 | 666.077 |
| 373.15 | 1164.33 | 613.877 |
| 373.15 | 2149.21 | 615.631 |
| 373.15 | 4123.49 | 618.999 |
| 373.15 | 5987.02 | 622.014 |
| 373.15 | 8094.82 | 625.262 |
| 373.15 | 10059.80 | 628.151 |
| 373.15 | 12066.30 | 630.972 |
| 373.15 | 14017.80 | 633.61 |
| 373.15 | 16044.40 | 636.241 |
| 373.15 | 18058.00 | 638.765 |
| 373.15 | 19975.60 | 641.085 |
| 373.15 | 21959.60 | 643.408 |
| 373.15 | 23948.00 | 645.665 |

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|---|---|---|
| 373.15 | 25804.80 | 647.712 |
| 373.15 | 27898.40 | 649.952 |
| 373.15 | 29818.70 | 651.952 |
| 393.15 | 1101.93 | 593.952 |
| 393.15 | 2001.51 | 595.905 |
| 393.15 | 4002.83 | 600.027 |
| 393.15 | 6004.29 | 603.884 |
| 393.15 | 8005.48 | 607.511 |
| 393.15 | 10007.10 | 610.942 |
| 393.15 | 12110.90 | 614.361 |
| 393.15 | 14116.50 | 617.466 |
| 393.15 | 16097.20 | 620.399 |
| 393.15 | 18029.00 | 623.142 |
| 393.15 | 20054.00 | 625.904 |
| 393.15 | 22015.90 | 628.483 |
| 393.15 | 24005.50 | 631.008 |
| 393.15 | 25986.10 | 633.434 |
| 393.15 | 27951.60 | 635.769 |
| 393.15 | 29842.80 | 638.037 |

Reference *https://www.doi.org/10.1016/j.jct.2008.02.020*

| Temperature, K | Pressure, kPa | Mass density, kg/m3 |
|---|---|---|
| 313.18 | 1000.00 | 668.09 |
| 313.18 | 2000.00 | 669.03 |
| 313.18 | 3000.00 | 669.97 |
| 313.18 | 4000.00 | 670.93 |
| 313.18 | 5010.00 | 671.9 |
| 313.18 | 6000.00 | 672.87 |
| 313.18 | 7000.00 | 673.86 |
| 313.18 | 8000.00 | 674.87 |
| 313.18 | 9000.00 | 675.87 |
| 313.18 | 10000.00 | 676.86 |
| 313.18 | 11000.00 | 677.85 |
| 313.18 | 12000.00 | 678.83 |
| 313.18 | 13000.00 | 679.81 |
| 313.18 | 14000.00 | 680.76 |
| 313.18 | 15000.00 | 681.7 |
| 313.18 | 16000.00 | 682.62 |
| 313.18 | 17000.00 | 683.53 |
| 313.18 | 18000.00 | 684.41 |
| 313.18 | 19000.00 | 685.26 |
| 313.18 | 20000.00 | 686.11 |

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|---|---|---|
| 313.18 | 21000.00 | 686.92 |
| 313.18 | 22000.00 | 687.67 |
| 313.18 | 23000.00 | 688.42 |
| 313.18 | 23910.00 | 689.07 |
| 313.18 | 25000.00 | 689.85 |
| 333.04 | 1000.00 | 650.66 |
| 333.04 | 2000.00 | 651.8 |
| 333.04 | 3000.00 | 652.94 |
| 333.04 | 4000.00 | 654.08 |
| 333.04 | 5000.00 | 655.23 |
| 333.04 | 6000.00 | 656.38 |
| 333.04 | 7000.00 | 657.54 |
| 333.04 | 8000.00 | 658.65 |
| 333.04 | 9000.00 | 659.81 |
| 333.04 | 10000.00 | 660.92 |
| 333.04 | 11000.00 | 662.03 |
| 333.04 | 12000.00 | 663.1 |
| 333.04 | 13000.00 | 664.2 |
| 333.04 | 14000.00 | 665.25 |
| 333.04 | 15000.00 | 666.31 |
| 333.04 | 16000.00 | 667.33 |
| 333.04 | 17000.00 | 668.33 |
| 333.04 | 18030.00 | 669.34 |
| 333.04 | 19000.00 | 670.26 |
| 333.04 | 20000.00 | 671.2 |
| 333.04 | 22000.00 | 673.01 |
| 333.04 | 23000.00 | 673.86 |
| 333.04 | 24000.00 | 674.7 |
| 333.04 | 25000.00 | 675.52 |
| 333.04 | 23000.00 | 673.86 |
| 353.06 | 1010.00 | 632.6 |
| 353.06 | 2000.00 | 634.02 |
| 353.06 | 3000.00 | 635.41 |
| 353.06 | 4000.00 | 636.78 |
| 353.06 | 5000.00 | 638.15 |
| 353.06 | 6000.00 | 639.47 |
| 353.06 | 7000.00 | 640.8 |
| 353.06 | 8000.00 | 642.1 |
| 353.06 | 9010.00 | 643.4 |
| 353.06 | 10000.00 | 644.66 |
| 353.06 | 11000.00 | 645.92 |
| 353.06 | 12000.00 | 647.13 |
| 353.06 | 13000.00 | 648.37 |
| 353.06 | 14000.00 | 649.56 |

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|---|---|---|
| 353.06 | 15000.00 | 650.72 |
| 353.06 | 16000.00 | 651.88 |
| 353.06 | 17000.00 | 653.0 |
| 353.06 | 18030.00 | 654.12 |
| 353.06 | 19000.00 | 655.16 |
| 353.06 | 20000.00 | 656.22 |
| 353.06 | 21000.00 | 657.27 |
| 353.06 | 22000.00 | 658.25 |
| 353.06 | 23000.00 | 659.24 |
| 353.06 | 24000.00 | 660.2 |
| 353.06 | 25000.00 | 661.14 |

Reference *https://www.doi.org/10.1016/j.jct.2011.08.016*

| Temperature, K | Pressure, kPa | Mass density, kg/m3 |
|---|---|---|
| 298.15 | 100.00 | 679.5 |
| 298.15 | 1000.00 | 680.4 |
| 298.15 | 5000.00 | 684.2 |
| 298.15 | 10000.00 | 688.6 |
| 298.15 | 15000.00 | 692.8 |
| 298.15 | 20000.00 | 696.7 |
| 298.15 | 25000.00 | 700.4 |
| 298.15 | 30000.00 | 704.0 |
| 298.15 | 35000.00 | 707.4 |
| 298.15 | 40000.00 | 710.7 |
| 298.15 | 45000.00 | 713.8 |
| 298.15 | 50000.00 | 716.8 |
| 298.15 | 55000.00 | 719.7 |
| 298.15 | 60000.00 | 722.5 |
| 298.15 | 65000.00 | 725.2 |
| 298.15 | 70000.00 | 727.9 |
| 298.15 | 80000.00 | 732.9 |
| 298.15 | 90000.00 | 737.7 |
| 298.15 | 100000.00 | 742.3 |
| 298.15 | 110000.00 | 746.6 |
| 298.15 | 120000.00 | 750.7 |
| 298.15 | 130000.00 | 754.6 |
| 298.15 | 140000.00 | 758.4 |
| 313.15 | 100.00 | 666.6 |
| 313.15 | 1000.00 | 667.6 |
| 313.15 | 5000.00 | 671.8 |
| 313.15 | 10000.00 | 676.7 |
| 313.15 | 15000.00 | 681.3 |

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|---|---|---|
| 313.15 | 20000.00 | 685.6 |
| 313.15 | 25000.00 | 689.5 |
| 313.15 | 30000.00 | 693.5 |
| 313.15 | 35000.00 | 697.1 |
| 313.15 | 40000.00 | 700.5 |
| 313.15 | 45000.00 | 703.9 |
| 313.15 | 50000.00 | 707.2 |
| 313.15 | 55000.00 | 710.3 |
| 313.15 | 60000.00 | 713.3 |
| 313.15 | 65000.00 | 716.1 |
| 313.15 | 70000.00 | 718.9 |
| 313.15 | 80000.00 | 724.2 |
| 313.15 | 90000.00 | 729.3 |
| 313.15 | 100000.00 | 734.0 |
| 313.15 | 110000.00 | 738.6 |
| 313.15 | 120000.00 | 742.8 |
| 313.15 | 130000.00 | 747.0 |
| 313.15 | 140000.00 | 751.1 |
| 333.15 | 100.00 | 648.9 |
| 333.15 | 1000.00 | 650.0 |
| 333.15 | 5000.00 | 655.0 |
| 333.15 | 10000.00 | 660.6 |
| 333.15 | 15000.00 | 665.8 |
| 333.15 | 20000.00 | 670.6 |
| 333.15 | 25000.00 | 675.1 |
| 333.15 | 30000.00 | 679.4 |
| 333.15 | 35000.00 | 683.4 |
| 333.15 | 40000.00 | 687.3 |
| 333.15 | 45000.00 | 690.9 |
| 333.15 | 50000.00 | 694.4 |
| 333.15 | 55000.00 | 697.7 |
| 333.15 | 60000.00 | 701.0 |
| 333.15 | 65000.00 | 704.1 |
| 333.15 | 70000.00 | 707.1 |
| 333.15 | 80000.00 | 712.8 |
| 333.15 | 90000.00 | 718.2 |
| 333.15 | 100000.00 | 723.2 |
| 333.15 | 110000.00 | 728.1 |
| 333.15 | 120000.00 | 732.6 |
| 333.15 | 130000.00 | 737.0 |
| 333.15 | 140000.00 | 741.1 |
| 353.15 | 100.00 | 631.2 |
| 353.15 | 1000.00 | 632.1 |
| 353.15 | 5000.00 | 637.8 |

| | | |
|---|---|---|
| 353.15 | 10000.00 | 644.3 |
| 353.15 | 15000.00 | 650.3 |
| 353.15 | 20000.00 | 655.7 |
| 353.15 | 25000.00 | 660.8 |
| 353.15 | 30000.00 | 665.5 |
| 353.15 | 35000.00 | 670.0 |
| 353.15 | 40000.00 | 674.1 |
| 353.15 | 45000.00 | 678.1 |
| 353.15 | 50000.00 | 682.0 |
| 353.15 | 55000.00 | 685.5 |
| 353.15 | 60000.00 | 689.1 |
| 353.15 | 65000.00 | 692.4 |
| 353.15 | 70000.00 | 695.7 |
| 353.15 | 80000.00 | 701.7 |
| 353.15 | 90000.00 | 707.5 |
| 353.15 | 100000.00 | 712.8 |
| 353.15 | 110000.00 | 717.9 |
| 353.15 | 120000.00 | 722.7 |
| 353.15 | 130000.00 | 727.3 |
| 353.15 | 140000.00 | 731.6 |
| 373.15 | 1000.00 | 613.3 |
| 373.15 | 5000.00 | 620.1 |
| 373.15 | 10000.00 | 627.7 |
| 373.15 | 15000.00 | 634.5 |
| 373.15 | 20000.00 | 640.7 |
| 373.15 | 25000.00 | 646.3 |
| 373.15 | 30000.00 | 651.6 |
| 373.15 | 35000.00 | 656.5 |
| 373.15 | 40000.00 | 661.1 |
| 373.15 | 45000.00 | 665.5 |
| 373.15 | 50000.00 | 669.6 |
| 373.15 | 55000.00 | 673.5 |
| 373.15 | 60000.00 | 677.3 |
| 373.15 | 65000.00 | 680.8 |
| 373.15 | 70000.00 | 684.3 |
| 373.15 | 80000.00 | 690.8 |
| 373.15 | 90000.00 | 696.9 |
| 373.15 | 100000.00 | 702.6 |
| 373.15 | 110000.00 | 708.0 |
| 373.15 | 120000.00 | 713.0 |
| 373.15 | 130000.00 | 717.9 |
| 373.15 | 140000.00 | 722.3 |
| 393.15 | 1000.00 | 593.5 |
| 393.15 | 5000.00 | 601.7 |

| | | |
|---|---|---|
| 393.15 | 10000.00 | 610.6 |
| 393.15 | 15000.00 | 618.4 |
| 393.15 | 20000.00 | 625.4 |
| 393.15 | 25000.00 | 631.7 |
| 393.15 | 30000.00 | 637.5 |
| 393.15 | 35000.00 | 643.0 |
| 393.15 | 40000.00 | 648.0 |
| 393.15 | 45000.00 | 652.8 |
| 393.15 | 50000.00 | 657.2 |
| 393.15 | 55000.00 | 661.5 |
| 393.15 | 60000.00 | 665.5 |
| 393.15 | 65000.00 | 669.3 |
| 393.15 | 70000.00 | 673.1 |
| 393.15 | 80000.00 | 680.1 |
| 393.15 | 90000.00 | 686.5 |
| 393.15 | 100000.00 | 692.5 |
| 393.15 | 110000.00 | 698.2 |
| 393.15 | 120000.00 | 703.4 |
| 393.15 | 130000.00 | 708.5 |
| 393.15 | 140000.00 | 713.4 |

Reference *https://www.doi.org/10.1016/j.jct.2013.05.051*

| Temperature, K | Pressure, kPa | Mass density, kg/m3 |
|---|---|---|
| 288.15 | 101.00 | 688.33 |
| 293.15 | 101.00 | 684.11 |
| 298.15 | 101.00 | 679.87 |
| 303.15 | 101.00 | 675.6 |
| 308.15 | 101.00 | 671.31 |
| 313.15 | 101.00 | 667.0 |
| 288.15 | 100.00 | 688.4 |
| 288.15 | 1000.00 | 689.2 |
| 288.15 | 5000.00 | 692.5 |
| 288.15 | 10000.00 | 696.5 |
| 288.15 | 15000.00 | 700.4 |
| 288.15 | 20000.00 | 704.1 |
| 288.15 | 25000.00 | 707.7 |
| 288.15 | 30000.00 | 711.1 |
| 288.15 | 35000.00 | 714.3 |
| 288.15 | 40000.00 | 717.4 |
| 288.15 | 45000.00 | 720.3 |
| 288.15 | 50000.00 | 723.1 |
| 288.15 | 55000.00 | 725.8 |

| | | |
|---|---|---|
| 288.15 | 60000.00 | 728.2 |
| 293.15 | 100.00 | 684.2 |
| 293.15 | 1000.00 | 685.0 |
| 293.15 | 5000.00 | 688.4 |
| 293.15 | 10000.00 | 692.6 |
| 293.15 | 15000.00 | 696.5 |
| 293.15 | 20000.00 | 700.4 |
| 293.15 | 25000.00 | 704.0 |
| 293.15 | 30000.00 | 707.5 |
| 293.15 | 35000.00 | 710.9 |
| 293.15 | 40000.00 | 714.0 |
| 293.15 | 45000.00 | 717.0 |
| 293.15 | 50000.00 | 719.9 |
| 293.15 | 55000.00 | 722.5 |
| 293.15 | 60000.00 | 725.1 |
| 298.15 | 100.00 | 679.9 |
| 298.15 | 1000.00 | 680.7 |
| 298.15 | 5000.00 | 684.3 |
| 298.15 | 10000.00 | 688.6 |
| 298.15 | 15000.00 | 692.7 |
| 298.15 | 20000.00 | 696.6 |
| 298.15 | 25000.00 | 700.4 |
| 298.15 | 30000.00 | 704.0 |
| 298.15 | 35000.00 | 707.4 |
| 298.15 | 40000.00 | 710.7 |
| 298.15 | 45000.00 | 713.8 |
| 298.15 | 50000.00 | 716.7 |
| 298.15 | 55000.00 | 719.4 |
| 298.15 | 60000.00 | 721.9 |
| 303.15 | 100.00 | 675.7 |
| 303.15 | 1000.00 | 676.5 |
| 303.15 | 5000.00 | 680.2 |
| 303.15 | 10000.00 | 684.6 |
| 303.15 | 15000.00 | 688.9 |
| 303.15 | 20000.00 | 693.0 |
| 303.15 | 25000.00 | 696.8 |
| 303.15 | 30000.00 | 700.5 |
| 303.15 | 35000.00 | 704.0 |
| 303.15 | 40000.00 | 707.4 |
| 303.15 | 45000.00 | 710.5 |
| 303.15 | 50000.00 | 713.5 |
| 303.15 | 55000.00 | 716.2 |
| 303.15 | 60000.00 | 718.8 |
| 308.15 | 100.00 | 671.4 |

| | | |
|---|---|---|
| 308.15 | 1000.00 | 672.2 |
| 308.15 | 5000.00 | 676.0 |
| 308.15 | 10000.00 | 680.6 |
| 308.15 | 15000.00 | 685.0 |
| 308.15 | 20000.00 | 689.2 |
| 308.15 | 25000.00 | 693.2 |
| 308.15 | 30000.00 | 697.0 |
| 308.15 | 35000.00 | 700.6 |
| 308.15 | 40000.00 | 704.0 |
| 308.15 | 45000.00 | 707.2 |
| 308.15 | 50000.00 | 710.3 |
| 308.15 | 55000.00 | 713.1 |
| 308.15 | 60000.00 | 715.7 |
| 313.15 | 100.00 | 667.1 |
| 313.15 | 1000.00 | 668.0 |
| 313.15 | 5000.00 | 672.0 |
| 313.15 | 10000.00 | 676.7 |
| 313.15 | 15000.00 | 681.2 |
| 313.15 | 20000.00 | 685.5 |
| 313.15 | 25000.00 | 689.6 |
| 313.15 | 30000.00 | 693.5 |
| 313.15 | 35000.00 | 697.2 |
| 313.15 | 40000.00 | 700.7 |
| 313.15 | 45000.00 | 704.0 |
| 313.15 | 50000.00 | 707.1 |
| 313.15 | 55000.00 | 709.9 |
| 313.15 | 60000.00 | 712.6 |
| 318.15 | 100.00 | 662.7 |
| 318.15 | 1000.00 | 663.6 |
| 318.15 | 5000.00 | 667.7 |
| 318.15 | 10000.00 | 672.6 |
| 318.15 | 15000.00 | 677.3 |
| 318.15 | 20000.00 | 681.8 |
| 318.15 | 25000.00 | 686.0 |
| 318.15 | 30000.00 | 690.0 |
| 318.15 | 35000.00 | 693.8 |
| 318.15 | 40000.00 | 697.4 |
| 318.15 | 45000.00 | 700.7 |
| 318.15 | 50000.00 | 703.9 |
| 318.15 | 55000.00 | 706.8 |
| 318.15 | 60000.00 | 709.5 |
| 323.15 | 100.00 | 658.3 |
| 323.15 | 1000.00 | 659.3 |
| 323.15 | 5000.00 | 663.5 |

| | | |
|---|---|---|
| 323.15 | 10000.00 | 668.6 |
| 323.15 | 15000.00 | 673.4 |
| 323.15 | 20000.00 | 678.0 |
| 323.15 | 25000.00 | 682.4 |
| 323.15 | 30000.00 | 686.5 |
| 323.15 | 35000.00 | 690.4 |
| 323.15 | 40000.00 | 694.1 |
| 323.15 | 45000.00 | 697.5 |
| 323.15 | 50000.00 | 700.7 |
| 323.15 | 55000.00 | 703.7 |
| 323.15 | 60000.00 | 706.4 |
| 328.15 | 100.00 | 653.9 |
| 328.15 | 1000.00 | 654.9 |
| 328.15 | 5000.00 | 659.3 |
| 328.15 | 10000.00 | 664.5 |
| 328.15 | 15000.00 | 669.5 |
| 328.15 | 20000.00 | 674.3 |
| 328.15 | 25000.00 | 678.8 |
| 328.15 | 30000.00 | 683.0 |
| 328.15 | 35000.00 | 687.0 |
| 328.15 | 40000.00 | 690.8 |
| 328.15 | 45000.00 | 694.3 |
| 328.15 | 50000.00 | 697.6 |
| 328.15 | 55000.00 | 700.6 |
| 328.15 | 60000.00 | 703.3 |
| 333.15 | 100.00 | 649.5 |
| 333.15 | 1000.00 | 650.6 |
| 333.15 | 5000.00 | 655.1 |
| 333.15 | 10000.00 | 660.5 |
| 333.15 | 15000.00 | 665.7 |
| 333.15 | 20000.00 | 670.6 |
| 333.15 | 25000.00 | 675.2 |
| 333.15 | 30000.00 | 679.6 |
| 333.15 | 35000.00 | 683.7 |
| 333.15 | 40000.00 | 687.5 |
| 333.15 | 45000.00 | 691.1 |
| 333.15 | 50000.00 | 694.4 |
| 333.15 | 55000.00 | 697.4 |
| 333.15 | 60000.00 | 700.2 |
| 343.15 | 100.00 | 640.5 |
| 343.15 | 1000.00 | 641.6 |
| 343.15 | 5000.00 | 646.5 |
| 343.15 | 10000.00 | 652.3 |
| 343.15 | 15000.00 | 657.8 |

| | | |
|---|---|---|
| 343.15 | 20000.00 | 663.1 |
| 343.15 | 25000.00 | 668.0 |
| 343.15 | 30000.00 | 672.6 |
| 343.15 | 35000.00 | 676.9 |
| 343.15 | 40000.00 | 681.0 |
| 343.15 | 45000.00 | 684.7 |
| 343.15 | 50000.00 | 688.1 |
| 343.15 | 55000.00 | 691.3 |
| 343.15 | 60000.00 | 694.1 |
| 353.15 | 100.00 | 631.3 |
| 353.15 | 1000.00 | 632.5 |
| 353.15 | 5000.00 | 637.8 |
| 353.15 | 10000.00 | 644.0 |
| 353.15 | 15000.00 | 649.9 |
| 353.15 | 20000.00 | 655.5 |
| 353.15 | 25000.00 | 660.7 |
| 353.15 | 30000.00 | 665.6 |
| 353.15 | 35000.00 | 670.2 |
| 353.15 | 40000.00 | 674.4 |
| 353.15 | 45000.00 | 678.3 |
| 353.15 | 50000.00 | 681.9 |
| 353.15 | 55000.00 | 685.1 |
| 353.15 | 60000.00 | 688.0 |
| 363.15 | 100.00 | 621.9 |
| 363.15 | 1000.00 | 623.2 |
| 363.15 | 5000.00 | 628.9 |
| 363.15 | 10000.00 | 635.6 |
| 363.15 | 15000.00 | 641.9 |
| 363.15 | 20000.00 | 647.9 |
| 363.15 | 25000.00 | 653.4 |
| 363.15 | 30000.00 | 658.6 |
| 363.15 | 35000.00 | 663.5 |
| 363.15 | 40000.00 | 667.9 |
| 363.15 | 45000.00 | 672.0 |
| 363.15 | 50000.00 | 675.7 |
| 363.15 | 55000.00 | 679.0 |
| 363.15 | 60000.00 | 681.9 |
| 373.15 | 1000.00 | 614.2 |
| 373.15 | 5000.00 | 620.2 |
| 373.15 | 10000.00 | 627.4 |
| 373.15 | 15000.00 | 634.1 |
| 373.15 | 20000.00 | 640.4 |
| 373.15 | 25000.00 | 646.3 |
| 373.15 | 30000.00 | 651.8 |

| | | |
|---|---|---|
| 373.15 | 35000.00 | 656.9 |
| 373.15 | 40000.00 | 661.5 |
| 373.15 | 45000.00 | 665.8 |
| 373.15 | 50000.00 | 669.6 |
| 373.15 | 55000.00 | 673.1 |
| 373.15 | 60000.00 | 676.1 |
| 393.15 | 1000.00 | 594.6 |
| 393.15 | 5000.00 | 601.7 |
| 393.15 | 10000.00 | 610.0 |
| 393.15 | 15000.00 | 617.8 |
| 393.15 | 20000.00 | 625.0 |
| 393.15 | 25000.00 | 631.7 |
| 393.15 | 30000.00 | 637.9 |
| 393.15 | 35000.00 | 643.6 |
| 393.15 | 40000.00 | 648.7 |
| 393.15 | 45000.00 | 653.3 |
| 393.15 | 50000.00 | 657.4 |
| 393.15 | 55000.00 | 660.9 |
| 393.15 | 60000.00 | 663.9 |
| 413.15 | 1000.00 | 574.1 |
| 413.15 | 5000.00 | 582.3 |
| 413.15 | 10000.00 | 592.0 |
| 413.15 | 15000.00 | 600.9 |
| 413.15 | 20000.00 | 609.2 |
| 413.15 | 25000.00 | 616.9 |
| 413.15 | 30000.00 | 623.9 |
| 413.15 | 35000.00 | 630.2 |
| 413.15 | 40000.00 | 635.9 |
| 413.15 | 45000.00 | 640.9 |
| 413.15 | 50000.00 | 645.2 |
| 413.15 | 55000.00 | 648.9 |
| 413.15 | 60000.00 | 651.9 |

Reference *https://www.doi.org/10.1016/j.jct.2016.04.014*

| Pressure, kPa | Temperature, K | Mass density, kg/m3 |
|---|---|---|
| 100.00 | 298.15 | 679.71 |

Reference *https://www.doi.org/10.1016/j.jct.2017.09.027*

| Temperature, K | Pressure, kPa | Mass density, kg/m3 |
|---|---|---|
| 283.15 | 100.00 | 692.57 |

| | | |
|---|---|---|
| 288.15 | 100.00 | 688.55 |
| 293.15 | 100.00 | 684.19 |
| 298.15 | 100.00 | 679.95 |
| 303.15 | 100.00 | 675.68 |
| 308.15 | 100.00 | 671.39 |
| 313.15 | 100.00 | 667.06 |
| 318.15 | 100.00 | 662.54 |
| 323.15 | 100.00 | 658.32 |
| 328.15 | 100.00 | 653.81 |
| 283.15 | 2000.00 | 694.49 |
| 288.15 | 2000.00 | 690.28 |
| 293.15 | 2000.00 | 686.15 |
| 298.15 | 2000.00 | 682.02 |
| 303.15 | 2000.00 | 677.75 |
| 308.15 | 2000.00 | 673.45 |
| 313.15 | 2000.00 | 669.26 |
| 318.15 | 2000.00 | 664.87 |
| 323.15 | 2000.00 | 660.53 |
| 328.15 | 2000.00 | 656.27 |
| 283.15 | 5000.00 | 697.06 |
| 288.15 | 5000.00 | 693.01 |
| 293.15 | 5000.00 | 688.99 |
| 298.15 | 5000.00 | 684.8 |
| 303.15 | 5000.00 | 680.76 |
| 308.15 | 5000.00 | 676.49 |
| 313.15 | 5000.00 | 672.35 |
| 318.15 | 5000.00 | 668.35 |
| 323.15 | 5000.00 | 664.05 |
| 328.15 | 5000.00 | 659.84 |
| 283.15 | 7000.00 | 698.8 |
| 288.15 | 7000.00 | 694.77 |
| 293.15 | 7000.00 | 690.74 |
| 298.15 | 7000.00 | 686.68 |
| 303.15 | 7000.00 | 682.65 |
| 308.15 | 7000.00 | 678.48 |
| 313.15 | 7000.00 | 674.51 |
| 318.15 | 7000.00 | 670.32 |
| 323.15 | 7000.00 | 666.33 |
| 328.15 | 7000.00 | 661.99 |
| 283.15 | 10000.00 | 701.2 |
| 288.15 | 10000.00 | 697.23 |
| 293.15 | 10000.00 | 693.41 |
| 298.15 | 10000.00 | 689.23 |
| 303.15 | 10000.00 | 685.52 |

| | | |
|---|---|---|
| 308.15 | 10000.00 | 681.37 |
| 313.15 | 10000.00 | 677.42 |
| 318.15 | 10000.00 | 673.52 |
| 323.15 | 10000.00 | 669.41 |
| 328.15 | 10000.00 | 665.25 |
| 283.15 | 20000.00 | 709.08 |
| 288.15 | 20000.00 | 705.18 |
| 293.15 | 20000.00 | 701.57 |
| 298.15 | 20000.00 | 697.65 |
| 303.15 | 20000.00 | 694.07 |
| 308.15 | 20000.00 | 690.12 |
| 313.15 | 20000.00 | 686.53 |
| 318.15 | 20000.00 | 682.85 |
| 323.15 | 20000.00 | 679.17 |
| 328.15 | 20000.00 | 675.25 |
| 283.15 | 30000.00 | 716.12 |
| 288.15 | 30000.00 | 712.38 |
| 293.15 | 30000.00 | 708.99 |
| 298.15 | 30000.00 | 705.17 |
| 303.15 | 30000.00 | 701.86 |
| 308.15 | 30000.00 | 698.22 |
| 313.15 | 30000.00 | 694.65 |
| 318.15 | 30000.00 | 691.31 |
| 323.15 | 30000.00 | 687.64 |
| 328.15 | 30000.00 | 684.02 |
| 283.15 | 40000.00 | 722.63 |
| 288.15 | 40000.00 | 719.01 |
| 293.15 | 40000.00 | 715.7 |
| 298.15 | 40000.00 | 712.11 |
| 303.15 | 40000.00 | 708.87 |
| 308.15 | 40000.00 | 705.32 |
| 313.15 | 40000.00 | 702.08 |
| 318.15 | 40000.00 | 698.89 |
| 323.15 | 40000.00 | 695.38 |
| 328.15 | 40000.00 | 691.84 |
| 283.15 | 50000.00 | 728.63 |
| 288.15 | 50000.00 | 725.2 |
| 293.15 | 50000.00 | 722.03 |
| 298.15 | 50000.00 | 718.54 |
| 303.15 | 50000.00 | 715.5 |
| 308.15 | 50000.00 | 712.12 |
| 313.15 | 50000.00 | 708.98 |
| 318.15 | 50000.00 | 705.82 |
| 323.15 | 50000.00 | 702.5 |

| | | |
|---|---|---|
| 328.15 | 50000.00 | 699.13 |
| 283.15 | 60000.00 | 734.33 |
| 288.15 | 60000.00 | 731.01 |
| 293.15 | 60000.00 | 728.02 |
| 298.15 | 60000.00 | 724.73 |
| 303.15 | 60000.00 | 721.67 |
| 308.15 | 60000.00 | 718.41 |
| 313.15 | 60000.00 | 715.39 |
| 318.15 | 60000.00 | 712.36 |
| 323.15 | 60000.00 | 709.15 |
| 328.15 | 60000.00 | 706.05 |
| 283.15 | 65000.00 | 736.99 |
| 288.15 | 65000.00 | 733.73 |
| 293.15 | 65000.00 | 730.72 |
| 298.15 | 65000.00 | 727.65 |
| 303.15 | 65000.00 | 724.56 |
| 308.15 | 65000.00 | 721.43 |
| 313.15 | 65000.00 | 718.32 |
| 318.15 | 65000.00 | 715.32 |
| 323.15 | 65000.00 | 712.32 |
| 328.15 | 65000.00 | 709.3 |

Reference *https://www.doi.org/10.1016/j.tca.2015.06.017*

| Temperature, K | Pressure, kPa | Mass density, kg/m3 |
|---|---|---|
| 298.15 | 100.00 | 680.0 |
| 298.15 | 3000.00 | 683.0 |
| 298.15 | 6000.00 | 686.0 |
| 298.15 | 9000.00 | 689.0 |
| 298.15 | 12000.00 | 691.0 |
| 298.15 | 15000.00 | 694.0 |
| 308.15 | 100.00 | 670.0 |
| 308.15 | 3000.00 | 674.0 |
| 308.15 | 6000.00 | 677.0 |
| 308.15 | 9000.00 | 680.0 |
| 308.15 | 12000.00 | 683.0 |
| 308.15 | 15000.00 | 685.0 |
| 318.15 | 100.00 | 662.0 |
| 318.15 | 3000.00 | 666.0 |
| 318.15 | 6000.00 | 669.0 |
| 318.15 | 9000.00 | 672.0 |
| 318.15 | 12000.00 | 675.0 |
| 318.15 | 15000.00 | 678.0 |

| Temperature, K | Pressure, kPa | Mass density, kg/m3 |
|---|---|---|
| 293.25 | 2103.00 | 685.58 |
| 293.25 | 3666.00 | 687.27 |
| 293.25 | 6195.00 | 689.52 |
| 293.25 | 10385.00 | 693.22 |
| 293.25 | 14421.00 | 696.48 |
| 293.25 | 17447.00 | 698.88 |
| 293.25 | 20472.00 | 701.01 |
| 293.25 | 23543.00 | 703.3 |
| 293.25 | 26611.00 | 705.5 |
| 313.08 | 2050.00 | 669.15 |
| 313.08 | 4083.00 | 671.15 |
| 313.08 | 6733.00 | 673.77 |
| 313.07 | 11204.00 | 678.28 |
| 313.08 | 14195.00 | 681.03 |
| 313.07 | 17225.00 | 683.61 |
| 313.07 | 20247.00 | 686.13 |
| 313.08 | 23266.00 | 688.54 |
| 313.08 | 26286.00 | 691.26 |
| 313.07 | 29805.00 | 693.98 |
| 332.78 | 2084.00 | 652.25 |
| 332.77 | 4091.00 | 654.57 |
| 332.78 | 7031.00 | 658.26 |
| 332.78 | 11151.00 | 662.67 |
| 332.78 | 14177.00 | 665.56 |
| 332.78 | 17172.00 | 668.79 |
| 332.78 | 20193.00 | 671.47 |
| 332.78 | 23214.00 | 674.57 |
| 332.78 | 26231.00 | 677.28 |
| 352.39 | 2184.00 | 635.33 |
| 352.39 | 4102.00 | 637.96 |
| 352.40 | 7146.00 | 641.83 |
| 352.39 | 11159.00 | 646.85 |
| 352.39 | 14169.00 | 650.4 |
| 352.39 | 17199.00 | 653.84 |
| 352.40 | 20204.00 | 657.05 |
| 352.40 | 23212.00 | 660.04 |
| 352.40 | 26228.00 | 663.06 |
| 352.39 | 29758.00 | 666.6 |

| Pressure, kPa | Temperature, K | Mass density, kg/m3 |
|---|---|---|
| 100.00 | 278.15 | 696.3 |
| 100.00 | 283.15 | 692.1 |
| 100.00 | 293.15 | 683.7 |
| 100.00 | 303.15 | 675.3 |
| 100.00 | 313.15 | 666.6 |
| 100.00 | 323.15 | 657.6 |
| 100.00 | 333.15 | 648.9 |
| 100.00 | 343.15 | 639.8 |
| 100.00 | 353.15 | 630.6 |
| 1000.00 | 278.15 | 697.0 |
| 1000.00 | 283.15 | 692.9 |
| 1000.00 | 293.15 | 684.6 |
| 1000.00 | 303.15 | 676.2 |
| 1000.00 | 313.15 | 667.6 |
| 1000.00 | 323.15 | 658.7 |
| 1000.00 | 333.15 | 650.0 |
| 1000.00 | 343.15 | 641.1 |
| 1000.00 | 353.15 | 632.0 |
| 2500.00 | 278.15 | 698.3 |
| 2500.00 | 283.15 | 694.2 |
| 2500.00 | 293.15 | 685.9 |
| 2500.00 | 303.15 | 677.7 |
| 2500.00 | 313.15 | 669.1 |
| 2500.00 | 323.15 | 660.4 |
| 2500.00 | 333.15 | 651.8 |
| 2500.00 | 343.15 | 643.1 |
| 2500.00 | 353.15 | 634.2 |
| 5000.00 | 278.15 | 700.3 |
| 5000.00 | 283.15 | 696.3 |
| 5000.00 | 293.15 | 688.2 |
| 5000.00 | 303.15 | 680.1 |
| 5000.00 | 313.15 | 671.7 |
| 5000.00 | 323.15 | 663.1 |
| 5000.00 | 333.15 | 654.8 |
| 5000.00 | 343.15 | 646.3 |
| 5000.00 | 353.15 | 637.8 |
| 7500.00 | 278.15 | 702.3 |
| 7500.00 | 283.15 | 698.3 |
| 7500.00 | 293.15 | 690.4 |

| | | |
|---|---|---|
| 7500.00 | 303.15 | 682.4 |
| 7500.00 | 313.15 | 674.2 |
| 7500.00 | 323.15 | 665.8 |
| 7500.00 | 333.15 | 657.6 |
| 7500.00 | 343.15 | 649.4 |
| 7500.00 | 353.15 | 641.1 |
| 10000.00 | 278.15 | 704.2 |
| 10000.00 | 283.15 | 700.2 |
| 10000.00 | 293.15 | 692.5 |
| 10000.00 | 303.15 | 684.7 |
| 10000.00 | 313.15 | 676.6 |
| 10000.00 | 323.15 | 668.4 |
| 10000.00 | 333.15 | 660.4 |
| 10000.00 | 343.15 | 652.4 |
| 10000.00 | 353.15 | 644.3 |
| 15000.00 | 278.15 | 707.9 |
| 15000.00 | 283.15 | 704.0 |
| 15000.00 | 293.15 | 696.6 |
| 15000.00 | 303.15 | 689.0 |
| 15000.00 | 313.15 | 681.2 |
| 15000.00 | 323.15 | 673.3 |
| 15000.00 | 333.15 | 665.6 |
| 15000.00 | 343.15 | 658.0 |
| 15000.00 | 353.15 | 650.3 |
| 20000.00 | 278.15 | 711.4 |
| 20000.00 | 283.15 | 707.6 |
| 20000.00 | 293.15 | 700.4 |
| 20000.00 | 303.15 | 693.0 |
| 20000.00 | 313.15 | 685.5 |
| 20000.00 | 323.15 | 677.9 |
| 20000.00 | 333.15 | 670.4 |
| 20000.00 | 343.15 | 663.1 |
| 20000.00 | 353.15 | 655.7 |
| 25000.00 | 278.15 | 714.7 |
| 25000.00 | 283.15 | 711.1 |
| 25000.00 | 293.15 | 703.9 |
| 25000.00 | 303.15 | 696.9 |
| 25000.00 | 313.15 | 689.5 |
| 25000.00 | 323.15 | 682.1 |
| 25000.00 | 333.15 | 674.9 |
| 25000.00 | 343.15 | 667.9 |
| 25000.00 | 353.15 | 660.8 |

Reference *https://www.doi.org/10.1021/je034056v*

| Temperature, K | Pressure, kPa | Mass density, kg/m3 |
|---|---|---|
| 278.15 | 100.00 | 696.36 |
| 278.15 | 1000.00 | 697.01 |
| 278.15 | 5000.00 | 700.47 |
| 278.15 | 10000.00 | 704.35 |
| 278.15 | 15000.00 | 708.03 |
| 278.15 | 20000.00 | 711.54 |
| 278.15 | 25000.00 | 714.88 |
| 278.15 | 30000.00 | 718.17 |
| 278.15 | 35000.00 | 721.23 |
| 278.15 | 40000.00 | 724.19 |
| 278.15 | 45000.00 | 727.05 |
| 283.15 | 100.00 | 692.23 |
| 283.15 | 1000.00 | 693.01 |
| 283.15 | 5000.00 | 696.39 |
| 283.15 | 10000.00 | 700.44 |
| 283.15 | 15000.00 | 704.24 |
| 283.15 | 20000.00 | 707.85 |
| 283.15 | 25000.00 | 711.27 |
| 283.15 | 30000.00 | 714.56 |
| 283.15 | 35000.00 | 717.81 |
| 283.15 | 40000.00 | 720.8 |
| 283.15 | 45000.00 | 723.72 |
| 293.15 | 100.00 | 683.79 |
| 293.15 | 1000.00 | 684.6 |
| 293.15 | 5000.00 | 688.22 |
| 293.15 | 10000.00 | 692.49 |
| 293.15 | 15000.00 | 696.52 |
| 293.15 | 20000.00 | 700.34 |
| 293.15 | 25000.00 | 703.98 |
| 293.15 | 30000.00 | 707.62 |
| 293.15 | 35000.00 | 710.9 |
| 293.15 | 40000.00 | 714.1 |
| 293.15 | 45000.00 | 717.14 |
| 303.15 | 100.00 | 675.35 |
| 303.15 | 1000.00 | 676.16 |
| 303.15 | 5000.00 | 680.06 |
| 303.15 | 10000.00 | 684.63 |
| 303.15 | 15000.00 | 688.92 |
| 303.15 | 20000.00 | 692.96 |
| 303.15 | 25000.00 | 696.8 |
| 303.15 | 30000.00 | 700.52 |

| | | |
|---|---|---|
| 303.15 | 35000.00 | 704.0 |
| 303.15 | 40000.00 | 707.3 |
| 303.15 | 45000.00 | 710.51 |
| 313.15 | 100.00 | 666.86 |
| 313.15 | 1000.00 | 667.7 |
| 313.15 | 5000.00 | 671.91 |
| 313.15 | 10000.00 | 676.8 |
| 313.15 | 15000.00 | 681.35 |
| 313.15 | 20000.00 | 685.63 |
| 313.15 | 25000.00 | 689.69 |
| 313.15 | 30000.00 | 693.53 |
| 313.15 | 35000.00 | 697.19 |
| 313.15 | 40000.00 | 700.67 |
| 313.15 | 45000.00 | 704.02 |
| 323.15 | 100.00 | 657.9 |
| 323.15 | 1000.00 | 658.85 |
| 323.15 | 5000.00 | 663.24 |
| 323.15 | 10000.00 | 668.53 |
| 323.15 | 15000.00 | 673.44 |
| 323.15 | 20000.00 | 677.94 |
| 323.15 | 25000.00 | 682.25 |
| 323.15 | 30000.00 | 686.3 |
| 323.15 | 35000.00 | 690.15 |
| 323.15 | 40000.00 | 693.83 |
| 323.15 | 45000.00 | 697.33 |
| 333.15 | 100.00 | 648.77 |
| 333.15 | 1000.00 | 649.92 |
| 333.15 | 5000.00 | 654.8 |
| 333.15 | 10000.00 | 660.46 |
| 333.15 | 15000.00 | 665.66 |
| 333.15 | 20000.00 | 670.49 |
| 333.15 | 25000.00 | 675.03 |
| 333.15 | 30000.00 | 679.3 |
| 333.15 | 35000.00 | 683.35 |
| 333.15 | 40000.00 | 687.19 |
| 333.15 | 45000.00 | 690.85 |
| 343.15 | 100.00 | 639.69 |
| 343.15 | 1000.00 | 640.93 |
| 343.15 | 5000.00 | 646.23 |
| 343.15 | 10000.00 | 652.33 |
| 343.15 | 15000.00 | 657.9 |
| 343.15 | 20000.00 | 663.04 |
| 343.15 | 25000.00 | 667.86 |
| 343.15 | 30000.00 | 672.37 |

| | | |
|---|---|---|
| 343.15 | 35000.00 | 676.61 |
| 343.15 | 40000.00 | 680.63 |
| 343.15 | 45000.00 | 684.47 |
| 353.15 | 100.00 | 630.49 |
| 353.15 | 1000.00 | 631.83 |
| 353.15 | 5000.00 | 637.6 |
| 353.15 | 10000.00 | 644.13 |
| 353.15 | 15000.00 | 650.11 |
| 353.15 | 20000.00 | 655.53 |
| 353.15 | 25000.00 | 660.64 |
| 353.15 | 30000.00 | 665.38 |
| 353.15 | 35000.00 | 669.83 |
| 353.15 | 40000.00 | 674.08 |
| 353.15 | 45000.00 | 678.04 |

Reference *https://www.doi.org/10.1021/je049580w*

| Temperature, K | Pressure, kPa | Mass density, kg/m3 |
|---|---|---|
| 313.15 | 340.00 | 667.1 |
| 313.15 | 690.00 | 667.5 |
| 313.15 | 1030.00 | 667.8 |
| 313.15 | 1380.00 | 668.2 |
| 313.15 | 1720.00 | 668.64 |
| 313.15 | 2070.00 | 669.0 |
| 313.15 | 2410.00 | 669.3 |
| 313.15 | 2760.00 | 669.8 |
| 313.15 | 3100.00 | 670.1 |
| 313.15 | 3450.00 | 670.4 |
| 313.15 | 3800.00 | 670.8 |
| 313.15 | 4140.00 | 671.2 |
| 313.15 | 4480.00 | 671.6 |
| 313.15 | 4830.00 | 671.9 |
| 313.15 | 5170.00 | 672.2 |
| 313.15 | 5510.00 | 672.6 |
| 313.15 | 5860.00 | 672.9 |
| 313.15 | 6200.00 | 673.3 |
| 313.15 | 6550.00 | 673.6 |
| 313.15 | 6890.00 | 674.0 |
| 313.15 | 7240.00 | 674.3 |
| 333.15 | 340.00 | 649.7 |
| 333.15 | 690.00 | 650.2 |
| 333.15 | 1030.00 | 650.6 |
| 333.15 | 1380.00 | 651.0 |

| | | |
|---|---|---|
| 333.15 | 1720.00 | 651.4 |
| 333.15 | 2070.00 | 651.9 |
| 333.15 | 2410.00 | 652.3 |
| 333.15 | 2760.00 | 652.7 |
| 333.15 | 3100.00 | 653.2 |
| 333.15 | 3450.00 | 653.6 |
| 333.15 | 3800.00 | 654.0 |
| 333.15 | 4140.00 | 654.4 |
| 333.15 | 4480.00 | 654.8 |
| 333.15 | 4830.00 | 655.2 |
| 333.15 | 5170.00 | 655.6 |
| 333.15 | 5510.00 | 656.0 |
| 333.15 | 5860.00 | 656.4 |
| 333.15 | 6200.00 | 656.8 |
| 333.15 | 6550.00 | 657.2 |
| 333.15 | 6890.00 | 657.6 |
| 333.15 | 7240.00 | 658.0 |
| 333.15 | 7580.00 | 658.4 |
| 333.15 | 7930.00 | 658.8 |
| 333.15 | 8270.00 | 659.2 |
| 353.15 | 340.00 | 631.8 |
| 353.15 | 690.00 | 632.3 |
| 353.15 | 1030.00 | 632.8 |
| 353.15 | 1380.00 | 633.3 |
| 353.15 | 1720.00 | 633.9 |
| 353.15 | 2070.00 | 634.4 |
| 353.15 | 2410.00 | 634.9 |
| 353.15 | 2760.00 | 635.3 |
| 353.15 | 3100.00 | 635.8 |
| 353.15 | 3450.00 | 636.3 |
| 353.15 | 3800.00 | 636.8 |
| 353.15 | 4140.00 | 637.3 |
| 353.15 | 4480.00 | 637.7 |
| 353.15 | 4830.00 | 638.2 |
| 353.15 | 5170.00 | 638.7 |
| 353.15 | 5510.00 | 639.2 |
| 353.15 | 5860.00 | 639.6 |
| 353.15 | 6200.00 | 640.1 |
| 353.15 | 6550.00 | 640.6 |
| 353.15 | 6890.00 | 641.0 |
| 353.15 | 7240.00 | 641.5 |
| 353.15 | 7580.00 | 641.9 |
| 353.15 | 7930.00 | 642.3 |
| 353.15 | 8270.00 | 642.8 |

| | | |
|---|---|---|
| 353.15 | 8620.00 | 643.2 |
| 353.15 | 8960.00 | 643.9 |
| 353.15 | 9310.00 | 644.1 |
| 353.15 | 9650.00 | 644.5 |
| 373.15 | 340.00 | 613.1 |
| 373.15 | 690.00 | 613.7 |
| 373.15 | 1030.00 | 614.3 |
| 373.15 | 1380.00 | 614.9 |
| 373.15 | 1720.00 | 615.5 |
| 373.15 | 2070.00 | 616.1 |
| 373.15 | 2410.00 | 616.7 |
| 373.15 | 2760.00 | 617.3 |
| 373.15 | 3100.00 | 618.2 |
| 373.15 | 3450.00 | 618.5 |
| 373.15 | 3800.00 | 619.0 |
| 373.15 | 4140.00 | 619.6 |
| 373.15 | 4480.00 | 620.2 |
| 373.15 | 4830.00 | 620.7 |
| 373.15 | 5170.00 | 621.2 |
| 373.15 | 5510.00 | 621.8 |
| 373.15 | 5860.00 | 622.3 |
| 373.15 | 6200.00 | 622.9 |
| 373.15 | 6550.00 | 623.4 |
| 373.15 | 6890.00 | 623.9 |
| 373.15 | 7240.00 | 624.4 |
| 373.15 | 7580.00 | 625.0 |
| 373.15 | 7930.00 | 625.5 |
| 373.15 | 8270.00 | 626.0 |
| 373.15 | 8620.00 | 626.5 |
| 373.15 | 8960.00 | 627.0 |
| 373.15 | 9310.00 | 627.5 |
| 373.15 | 9650.00 | 628.0 |
| 393.15 | 340.00 | 593.4 |
| 393.15 | 690.00 | 594.1 |
| 393.15 | 1030.00 | 594.9 |
| 393.15 | 1380.00 | 595.6 |
| 393.15 | 1720.00 | 596.3 |
| 393.15 | 2070.00 | 597.0 |
| 393.15 | 2410.00 | 597.8 |
| 393.15 | 2760.00 | 598.5 |
| 393.15 | 3100.00 | 599.2 |
| 393.15 | 3450.00 | 599.9 |
| 393.15 | 3800.00 | 600.5 |
| 393.15 | 4140.00 | 601.2 |

| | | |
|---|---|---|
| 393.15 | 4480.00 | 601.9 |
| 393.15 | 4830.00 | 602.5 |
| 393.15 | 5170.00 | 603.2 |
| 393.15 | 5510.00 | 603.8 |
| 393.15 | 5860.00 | 604.4 |
| 393.15 | 6200.00 | 605.1 |
| 393.15 | 6550.00 | 605.7 |
| 393.15 | 6890.00 | 606.3 |
| 393.15 | 7240.00 | 606.9 |
| 393.15 | 7580.00 | 607.5 |
| 393.15 | 7930.00 | 608.1 |
| 393.15 | 8270.00 | 608.7 |
| 393.15 | 8620.00 | 609.3 |
| 393.15 | 8960.00 | 609.9 |
| 393.15 | 9310.00 | 610.8 |
| 393.15 | 9650.00 | 611.1 |

Reference *https://www.doi.org/10.1021/je301283e*

| Temperature, K | Pressure, kPa | Mass density, kg/m3 |
|---|---|---|
| 283.15 | 101.00 | 692.398 |
| 283.15 | 267.60 | 692.646 |
| 283.15 | 550.80 | 692.799 |
| 283.15 | 878.60 | 693.177 |
| 283.15 | 991.30 | 693.192 |
| 283.15 | 2020.20 | 694.161 |
| 283.15 | 2914.80 | 694.997 |
| 283.15 | 4946.50 | 696.597 |
| 283.15 | 7034.80 | 698.638 |
| 283.15 | 9021.60 | 700.052 |
| 283.15 | 9991.90 | 700.869 |
| 283.15 | 11958.70 | 702.48 |
| 283.15 | 15011.20 | 704.783 |
| 283.15 | 18047.40 | 706.965 |
| 283.15 | 20045.40 | 708.637 |
| 283.15 | 22056.50 | 709.841 |
| 283.15 | 25044.10 | 712.0 |
| 283.15 | 28046.30 | 714.05 |
| 283.15 | 30051.70 | 715.435 |
| 283.15 | 32054.80 | 716.688 |
| 283.15 | 32971.30 | 717.342 |
| 283.15 | 32999.60 | 717.432 |
| 283.15 | 34016.50 | 718.012 |

| | | |
|---|---|---|
| 283.15 | 34959.50 | 718.734 |
| 283.15 | 37943.00 | 720.455 |
| 283.15 | 40004.00 | 721.755 |
| 283.15 | 42057.90 | 723.102 |
| 283.15 | 44939.90 | 724.839 |
| 283.15 | 48022.40 | 726.526 |
| 283.15 | 49996.40 | 727.851 |
| 283.15 | 51981.80 | 728.904 |
| 283.15 | 54965.00 | 730.736 |
| 283.15 | 57949.30 | 732.407 |
| 283.15 | 59996.40 | 733.467 |
| 283.15 | 62025.40 | 734.345 |
| 283.15 | 64997.50 | 735.98 |
| 283.16 | 65971.00 | 736.499 |
| 288.15 | 102.00 | 688.224 |
| 288.15 | 391.30 | 688.682 |
| 288.15 | 554.40 | 688.232 |
| 288.15 | 882.70 | 689.214 |
| 288.15 | 989.10 | 688.618 |
| 288.15 | 2057.50 | 689.559 |
| 288.15 | 2917.80 | 690.931 |
| 288.15 | 5041.40 | 692.738 |
| 288.15 | 7088.80 | 693.96 |
| 288.15 | 9018.60 | 695.614 |
| 288.15 | 10039.90 | 696.278 |
| 288.15 | 12071.60 | 698.584 |
| 288.15 | 15001.40 | 700.836 |
| 288.15 | 17968.20 | 703.23 |
| 288.15 | 20067.60 | 704.758 |
| 288.15 | 22019.60 | 705.649 |
| 288.15 | 25001.50 | 707.645 |
| 288.15 | 28025.70 | 709.735 |
| 288.15 | 30034.70 | 711.006 |
| 288.15 | 32084.00 | 712.959 |
| 288.15 | 33050.00 | 713.818 |
| 288.15 | 33096.20 | 713.93 |
| 288.15 | 34035.60 | 714.067 |
| 288.15 | 35077.00 | 714.575 |
| 288.15 | 37992.90 | 716.378 |
| 288.15 | 40040.80 | 717.608 |
| 288.15 | 42022.80 | 718.735 |
| 288.15 | 44979.30 | 720.398 |
| 288.15 | 48045.10 | 723.18 |
| 288.15 | 50067.60 | 724.245 |

| | | |
|---|---|---|
| 288.15 | 52032.00 | 724.841 |
| 288.15 | 55076.90 | 726.211 |
| 288.15 | 58004.00 | 729.214 |
| 288.15 | 59987.50 | 729.723 |
| 288.15 | 61973.60 | 731.101 |
| 288.15 | 64941.60 | 731.745 |
| 288.15 | 66025.40 | 732.751 |
| 293.15 | 100.50 | 683.714 |
| 293.16 | 305.20 | 684.504 |
| 293.16 | 476.40 | 684.708 |
| 293.15 | 825.10 | 684.796 |
| 293.16 | 1045.20 | 685.167 |
| 293.15 | 1971.70 | 685.978 |
| 293.15 | 3060.60 | 686.787 |
| 293.15 | 5011.00 | 688.859 |
| 293.16 | 7096.80 | 690.796 |
| 293.15 | 9042.10 | 692.394 |
| 293.15 | 10035.70 | 693.252 |
| 293.15 | 11946.50 | 694.459 |
| 293.15 | 14940.60 | 697.266 |
| 293.16 | 17888.60 | 698.789 |
| 293.16 | 19991.60 | 701.345 |
| 293.15 | 21987.10 | 701.769 |
| 293.16 | 24983.20 | 704.2 |
| 293.15 | 27986.00 | 706.659 |
| 293.16 | 29975.80 | 708.599 |
| 293.16 | 32232.40 | 710.098 |
| 293.15 | 33150.80 | 710.425 |
| 293.15 | 33149.70 | 710.401 |
| 293.15 | 34098.90 | 710.557 |
| 293.15 | 34999.60 | 711.53 |
| 293.16 | 38026.50 | 712.948 |
| 293.15 | 40081.00 | 714.898 |
| 293.15 | 42099.20 | 716.347 |
| 293.15 | 45068.20 | 718.234 |
| 293.16 | 48021.50 | 720.258 |
| 293.16 | 50084.50 | 721.322 |
| 293.16 | 52032.40 | 722.789 |
| 293.15 | 54965.50 | 724.479 |
| 293.15 | 58071.90 | 726.215 |
| 293.16 | 60018.30 | 727.31 |
| 293.16 | 61962.20 | 728.261 |
| 293.16 | 64991.00 | 729.973 |
| 293.15 | 66045.20 | 730.5 |

| | | |
|---|---|---|
| 298.15 | 102.30 | 679.807 |
| 298.15 | 305.40 | 680.336 |
| 298.16 | 493.70 | 680.581 |
| 298.15 | 854.50 | 680.896 |
| 298.16 | 1012.60 | 680.891 |
| 298.15 | 1980.90 | 681.933 |
| 298.15 | 3167.80 | 682.97 |
| 298.15 | 5067.60 | 684.841 |
| 298.15 | 7065.30 | 686.383 |
| 298.16 | 9120.90 | 688.48 |
| 298.15 | 10106.60 | 689.119 |
| 298.16 | 11970.20 | 689.977 |
| 298.16 | 15219.70 | 693.294 |
| 298.16 | 17984.10 | 694.869 |
| 298.15 | 20127.80 | 696.696 |
| 298.15 | 22004.20 | 699.062 |
| 298.15 | 25080.50 | 701.29 |
| 298.16 | 28040.20 | 703.578 |
| 298.16 | 30089.10 | 704.725 |
| 298.16 | 32033.90 | 706.093 |
| 298.15 | 33112.80 | 707.026 |
| 298.16 | 33092.70 | 706.936 |
| 298.15 | 33924.30 | 706.971 |
| 298.16 | 35216.60 | 707.884 |
| 298.15 | 38096.90 | 709.948 |
| 298.15 | 40161.30 | 711.975 |
| 298.15 | 42028.50 | 713.324 |
| 298.15 | 45020.90 | 715.087 |
| 298.15 | 48106.60 | 717.001 |
| 298.15 | 50068.10 | 718.317 |
| 298.16 | 52019.70 | 719.461 |
| 298.15 | 55016.00 | 721.123 |
| 298.15 | 57930.90 | 723.027 |
| 298.15 | 59914.40 | 724.031 |
| 298.15 | 62036.30 | 725.393 |
| 298.15 | 65017.50 | 726.954 |
| 298.16 | 66118.40 | 727.501 |
| 303.15 | 100.70 | 675.559 |
| 303.15 | 304.10 | 675.598 |
| 303.15 | 498.90 | 675.77 |
| 303.15 | 900.60 | 675.904 |
| 303.15 | 979.10 | 676.053 |
| 303.15 | 1977.60 | 677.27 |
| 303.16 | 2964.90 | 678.337 |

| | | |
|---|---|---|
| 303.15 | 4930.40 | 680.06 |
| 303.16 | 7045.60 | 682.343 |
| 303.16 | 8858.20 | 683.448 |
| 303.16 | 10013.90 | 684.334 |
| 303.15 | 11975.10 | 686.61 |
| 303.15 | 15043.60 | 689.15 |
| 303.16 | 18021.30 | 692.198 |
| 303.15 | 19974.40 | 693.813 |
| 303.15 | 21919.60 | 695.403 |
| 303.15 | 24991.70 | 697.736 |
| 303.16 | 27933.40 | 699.906 |
| 303.16 | 29990.40 | 701.007 |
| 303.15 | 31957.80 | 702.727 |
| 303.15 | 32862.10 | 703.514 |
| 303.15 | 33111.70 | 703.9 |
| 303.15 | 34080.70 | 704.468 |
| 303.15 | 34979.90 | 705.109 |
| 303.15 | 37951.00 | 707.216 |
| 303.15 | 39903.50 | 708.418 |
| 303.15 | 42013.80 | 709.635 |
| 303.15 | 44896.20 | 711.236 |
| 303.15 | 47951.40 | 713.224 |
| 303.15 | 50065.30 | 714.711 |
| 303.15 | 52072.60 | 715.915 |
| 303.15 | 55074.50 | 717.452 |
| 303.15 | 57989.30 | 719.654 |
| 303.15 | 59978.60 | 720.537 |
| 303.15 | 62052.40 | 721.855 |
| 303.15 | 64988.20 | 723.925 |
| 303.15 | 66029.70 | 724.328 |
| 308.15 | 105.00 | 671.006 |
| 308.15 | 274.30 | 671.143 |
| 308.15 | 494.10 | 671.318 |
| 308.15 | 803.30 | 671.687 |
| 308.15 | 1039.50 | 672.093 |
| 308.15 | 1916.70 | 672.909 |
| 308.15 | 2980.70 | 674.097 |
| 308.15 | 4990.20 | 676.132 |
| 308.15 | 6964.90 | 678.143 |
| 308.15 | 8864.30 | 679.887 |
| 308.15 | 9863.10 | 680.761 |
| 308.15 | 12008.60 | 682.857 |
| 308.16 | 15068.70 | 685.368 |
| 308.15 | 17849.80 | 687.815 |

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| 308.15 | 19930.20 | 689.488 |
| 308.15 | 21988.30 | 691.177 |
| 308.15 | 25012.20 | 693.658 |
| 308.15 | 27955.20 | 695.718 |
| 308.15 | 29906.20 | 696.905 |
| 308.15 | 31928.70 | 698.302 |
| 308.15 | 32941.40 | 698.96 |
| 308.15 | 32885.90 | 699.002 |
| 308.15 | 34010.80 | 700.438 |
| 308.16 | 34949.30 | 701.078 |
| 308.15 | 37971.20 | 703.176 |
| 308.15 | 40011.40 | 704.309 |
| 308.15 | 41998.10 | 705.614 |
| 308.15 | 45016.60 | 707.854 |
| 308.15 | 48033.40 | 709.906 |
| 308.15 | 50043.60 | 711.265 |
| 308.15 | 51977.40 | 712.584 |
| 308.15 | 54981.90 | 714.563 |
| 308.15 | 58008.90 | 716.265 |
| 308.15 | 60030.00 | 717.688 |
| 308.15 | 61984.80 | 718.959 |
| 308.15 | 64980.50 | 720.569 |
| 308.16 | 66087.80 | 721.543 |
| 313.15 | 100.80 | 666.87 |
| 313.15 | 316.00 | 667.185 |
| 313.15 | 569.60 | 667.234 |
| 313.16 | 860.70 | 667.671 |
| 313.15 | 1088.80 | 668.002 |
| 313.15 | 2109.70 | 669.053 |
| 313.15 | 3137.00 | 670.192 |
| 313.15 | 5111.80 | 672.198 |
| 313.15 | 6921.80 | 674.169 |
| 313.15 | 9210.70 | 676.379 |
| 313.15 | 10209.30 | 677.309 |
| 313.15 | 12019.70 | 679.079 |
| 313.15 | 15058.60 | 681.665 |
| 313.15 | 17921.10 | 684.308 |
| 313.15 | 19931.90 | 686.1 |
| 313.15 | 22058.20 | 687.733 |
| 313.15 | 24861.60 | 690.068 |
| 313.15 | 27868.70 | 692.385 |
| 313.15 | 29956.80 | 693.806 |
| 313.15 | 32107.10 | 695.43 |
| 313.15 | 32980.30 | 696.141 |

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| 313.15 | 33002.20 | 696.147 |
| 313.15 | 33981.20 | 697.086 |
| 313.15 | 35045.40 | 697.948 |
| 313.15 | 38126.60 | 700.098 |
| 313.16 | 39996.90 | 701.327 |
| 313.15 | 41978.40 | 702.778 |
| 313.15 | 44946.30 | 704.758 |
| 313.15 | 47879.70 | 706.851 |
| 313.16 | 50020.80 | 708.33 |
| 313.15 | 52097.40 | 709.812 |
| 313.15 | 54924.00 | 711.549 |
| 313.15 | 58081.50 | 713.474 |
| 313.15 | 59932.20 | 714.707 |
| 313.15 | 62004.00 | 716.103 |
| 313.15 | 64954.10 | 717.814 |
| 313.15 | 66113.10 | 718.367 |
| 318.15 | 100.70 | 662.812 |
| 318.15 | 336.30 | 663.228 |
| 318.16 | 590.90 | 663.443 |
| 318.16 | 891.00 | 663.766 |
| 318.15 | 1105.70 | 663.94 |
| 318.15 | 1929.10 | 664.905 |
| 318.15 | 2933.20 | 665.972 |
| 318.16 | 5020.80 | 668.355 |
| 318.16 | 6926.70 | 670.309 |
| 318.15 | 8989.00 | 672.331 |
| 318.15 | 10074.50 | 673.533 |
| 318.15 | 11896.00 | 675.253 |
| 318.16 | 14800.10 | 678.075 |
| 318.15 | 18102.40 | 681.046 |
| 318.15 | 19985.10 | 682.727 |
| 318.15 | 22093.70 | 684.679 |
| 318.16 | 24872.80 | 686.865 |
| 318.16 | 27909.40 | 689.38 |
| 318.15 | 29997.50 | 691.196 |
| 318.16 | 31957.10 | 692.414 |
| 318.15 | 33015.60 | 693.259 |
| 318.15 | 33179.60 | 693.331 |
| 318.16 | 34110.30 | 694.119 |
| 318.16 | 35047.60 | 694.934 |
| 318.15 | 37838.40 | 697.046 |
| 318.15 | 40092.50 | 698.439 |
| 318.16 | 41996.00 | 699.6 |
| 318.15 | 44884.00 | 701.561 |

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| 318.15 | 47944.40 | 703.663 |
| 318.16 | 49950.20 | 705.2 |
| 318.16 | 52037.30 | 706.412 |
| 318.15 | 54944.20 | 708.215 |
| 318.15 | 57972.30 | 710.506 |
| 318.15 | 59922.50 | 711.605 |
| 318.16 | 61930.00 | 712.85 |
| 318.15 | 65021.80 | 714.898 |
| 318.15 | 66027.50 | 715.438 |
| 323.15 | 102.30 | 658.378 |
| 323.15 | 296.10 | 658.71 |
| 323.15 | 528.40 | 658.782 |
| 323.16 | 920.70 | 659.343 |
| 323.15 | 994.20 | 659.429 |
| 323.15 | 2006.90 | 660.61 |
| 323.15 | 2966.60 | 661.806 |
| 323.15 | 4996.20 | 663.968 |
| 323.15 | 7042.10 | 666.276 |
| 323.15 | 9029.90 | 667.858 |
| 323.15 | 10089.70 | 669.742 |
| 323.15 | 11913.70 | 670.973 |
| 323.15 | 15110.70 | 674.373 |
| 323.15 | 17980.70 | 677.251 |
| 323.15 | 20037.80 | 678.71 |
| 323.15 | 21994.90 | 680.737 |
| 323.15 | 24993.40 | 683.213 |
| 323.16 | 27958.40 | 685.975 |
| 323.16 | 30054.60 | 687.083 |
| 323.15 | 32079.20 | 689.177 |
| 323.16 | 33067.40 | 689.946 |
| 323.15 | 33103.20 | 689.972 |
| 323.15 | 34080.80 | 690.434 |
| 323.15 | 35113.00 | 691.624 |
| 323.15 | 37952.80 | 693.659 |
| 323.16 | 40047.00 | 695.097 |
| 323.15 | 42011.10 | 696.516 |
| 323.16 | 44936.90 | 698.783 |
| 323.15 | 48025.40 | 700.814 |
| 323.15 | 49933.50 | 702.105 |
| 323.15 | 52114.30 | 703.681 |
| 323.15 | 54963.50 | 705.509 |
| 323.15 | 58044.90 | 707.475 |
| 323.15 | 60049.80 | 708.827 |
| 323.15 | 62131.00 | 710.008 |

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| 323.15 | 64998.70 | 711.842 |
| 323.16 | 66131.20 | 712.551 |
| 328.15 | 100.80 | 653.868 |
| 328.15 | 289.90 | 654.182 |
| 328.16 | 501.00 | 654.211 |
| 328.15 | 897.50 | 654.815 |
| 328.15 | 994.10 | 655.012 |
| 328.15 | 1988.80 | 656.162 |
| 328.15 | 2996.70 | 657.408 |
| 328.15 | 5013.40 | 659.794 |
| 328.15 | 6974.90 | 662.023 |
| 328.15 | 9017.00 | 664.204 |
| 328.15 | 10040.00 | 665.257 |
| 328.16 | 12209.60 | 667.562 |
| 328.16 | 15054.80 | 670.204 |
| 328.16 | 18061.30 | 673.216 |
| 328.16 | 20279.00 | 675.247 |
| 328.16 | 22012.90 | 676.775 |
| 328.15 | 24924.10 | 679.489 |
| 328.15 | 27979.20 | 682.036 |
| 328.15 | 29958.30 | 683.395 |
| 328.15 | 32059.50 | 685.102 |
| 328.15 | 33065.50 | 685.969 |
| 328.15 | 33107.20 | 685.992 |
| 328.15 | 34013.40 | 687.01 |
| 328.15 | 35029.60 | 687.796 |
| 328.15 | 38009.80 | 690.025 |
| 328.15 | 39969.00 | 691.415 |
| 328.15 | 41958.80 | 692.865 |
| 328.15 | 44952.60 | 695.094 |
| 328.15 | 47977.50 | 697.371 |
| 328.15 | 49926.50 | 698.804 |
| 328.15 | 51996.90 | 700.259 |
| 328.15 | 54946.60 | 702.284 |
| 328.15 | 57938.70 | 704.221 |
| 328.15 | 59990.90 | 705.64 |
| 328.15 | 61981.50 | 707.057 |
| 328.15 | 65031.60 | 708.835 |
| 328.15 | 66046.20 | 709.499 |
| 333.15 | 100.40 | 649.302 |
| 333.16 | 303.50 | 649.622 |
| 333.15 | 532.60 | 649.653 |
| 333.15 | 897.80 | 650.259 |
| 333.16 | 1003.00 | 650.554 |

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| 333.15 | 1987.20 | 651.687 |
| 333.15 | 3023.40 | 653.063 |
| 333.15 | 4997.40 | 655.338 |
| 333.15 | 7002.40 | 657.844 |
| 333.15 | 9032.00 | 660.047 |
| 333.15 | 10209.50 | 661.268 |
| 333.16 | 12011.10 | 663.322 |
| 333.15 | 15008.40 | 666.206 |
| 333.16 | 17991.90 | 669.217 |
| 333.16 | 20035.90 | 671.108 |
| 333.15 | 22033.60 | 672.882 |
| 333.16 | 25027.10 | 675.678 |
| 333.15 | 28039.90 | 678.188 |
| 333.15 | 30015.60 | 679.579 |
| 333.15 | 32067.10 | 681.185 |
| 333.15 | 32976.90 | 681.946 |
| 333.16 | 33072.70 | 682.004 |
| 333.15 | 34085.90 | 683.474 |
| 333.15 | 35075.40 | 684.235 |
| 333.15 | 37893.70 | 686.324 |
| 333.15 | 40110.90 | 687.848 |
| 333.15 | 41946.80 | 689.191 |
| 333.15 | 44974.00 | 691.567 |
| 333.15 | 47935.60 | 693.899 |
| 333.15 | 49919.60 | 695.372 |
| 333.15 | 51953.30 | 696.893 |
| 333.15 | 54875.90 | 699.008 |
| 333.15 | 58057.20 | 700.988 |
| 333.15 | 59992.70 | 702.482 |
| 333.15 | 62048.60 | 703.927 |
| 333.15 | 64970.40 | 705.65 |
| 333.15 | 66005.00 | 706.481 |
| 338.15 | 100.40 | 644.915 |
| 338.15 | 309.80 | 645.161 |
| 338.15 | 561.60 | 645.341 |
| 338.15 | 898.50 | 645.924 |
| 338.15 | 1014.10 | 646.212 |
| 338.16 | 2000.20 | 647.409 |
| 338.15 | 2936.10 | 648.694 |
| 338.15 | 5018.60 | 651.205 |
| 338.16 | 6917.30 | 653.552 |
| 338.16 | 9046.90 | 656.063 |
| 338.15 | 10033.60 | 657.126 |
| 338.16 | 11959.40 | 659.361 |

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| 338.15 | 14884.90 | 662.203 |
| 338.15 | 17955.80 | 665.481 |
| 338.15 | 19927.00 | 667.369 |
| 338.15 | 22041.10 | 669.319 |
| 338.15 | 25026.20 | 672.169 |
| 338.16 | 27975.50 | 674.704 |
| 338.15 | 29993.70 | 676.134 |
| 338.16 | 31948.90 | 677.899 |
| 338.15 | 32881.50 | 678.515 |
| 338.16 | 32881.50 | 678.499 |
| 338.15 | 33937.40 | 679.921 |
| 338.15 | 35012.40 | 680.879 |
| 338.16 | 37962.10 | 683.24 |
| 338.15 | 39986.90 | 684.582 |
| 338.15 | 41989.90 | 686.092 |
| 338.15 | 44978.20 | 688.463 |
| 338.15 | 47971.40 | 690.744 |
| 338.15 | 49998.60 | 692.38 |
| 338.15 | 52127.20 | 693.976 |
| 338.16 | 54992.20 | 696.066 |
| 338.15 | 57939.90 | 697.82 |
| 338.15 | 60013.80 | 699.459 |
| 338.16 | 62073.50 | 700.918 |
| 338.15 | 65011.90 | 702.688 |
| 338.15 | 66056.80 | 703.55 |
| 343.15 | 105.10 | 640.758 |
| 343.15 | 297.30 | 640.918 |
| 343.15 | 520.30 | 641.218 |
| 343.15 | 911.70 | 641.765 |
| 343.15 | 1017.70 | 641.938 |
| 343.15 | 1994.60 | 643.242 |
| 343.15 | 2968.30 | 644.553 |
| 343.15 | 4994.80 | 647.152 |
| 343.15 | 6976.60 | 649.726 |
| 343.15 | 9002.60 | 652.141 |
| 343.15 | 10060.40 | 653.267 |
| 343.15 | 12024.50 | 655.625 |
| 343.15 | 14927.50 | 658.769 |
| 343.15 | 17975.20 | 661.975 |
| 343.15 | 19985.00 | 664.0 |
| 343.15 | 22032.80 | 666.001 |
| 343.15 | 25090.50 | 668.93 |
| 343.15 | 28044.70 | 671.724 |
| 343.15 | 30082.00 | 673.379 |

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| 343.15 | 32169.60 | 675.296 |
| 343.15 | 33053.30 | 676.043 |
| 343.15 | 33096.80 | 676.076 |
| 343.16 | 34034.10 | 676.976 |
| 343.15 | 35030.10 | 677.808 |
| 343.15 | 37943.20 | 680.185 |
| 343.15 | 40012.30 | 681.817 |
| 343.15 | 41972.20 | 683.353 |
| 343.15 | 44927.30 | 685.751 |
| 343.15 | 47907.90 | 688.0 |
| 343.15 | 50058.90 | 689.668 |
| 343.15 | 52026.20 | 691.103 |
| 343.16 | 54918.50 | 693.158 |
| 343.16 | 57986.20 | 695.23 |
| 343.15 | 59944.40 | 696.69 |
| 343.15 | 61966.50 | 697.921 |
| 343.15 | 65069.90 | 699.939 |
| 343.15 | 66059.20 | 700.533 |
| 348.15 | 100.30 | 636.109 |
| 348.16 | 291.70 | 636.475 |
| 348.15 | 462.20 | 636.505 |
| 348.15 | 859.80 | 637.192 |
| 348.15 | 974.20 | 637.393 |
| 348.15 | 1974.90 | 638.781 |
| 348.15 | 3051.10 | 640.295 |
| 348.15 | 5094.00 | 643.002 |
| 348.16 | 7050.20 | 645.632 |
| 348.16 | 9003.20 | 648.038 |
| 348.15 | 10025.40 | 649.256 |
| 348.16 | 12186.90 | 651.83 |
| 348.15 | 14792.00 | 654.622 |
| 348.16 | 17899.00 | 658.098 |
| 348.15 | 20111.40 | 660.386 |
| 348.15 | 22163.40 | 662.539 |
| 348.16 | 25099.80 | 665.329 |
| 348.15 | 28080.10 | 668.108 |
| 348.15 | 30148.90 | 670.002 |
| 348.15 | 32161.30 | 671.799 |
| 348.16 | 32941.60 | 672.463 |
| 348.15 | 32935.20 | 672.452 |
| 348.15 | 33958.60 | 673.504 |
| 348.15 | 35044.60 | 674.428 |
| 348.15 | 37937.40 | 676.834 |
| 348.15 | 40025.60 | 678.502 |

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| 348.16 | 42065.80 | 680.23 |
| 348.15 | 45050.60 | 682.511 |
| 348.15 | 47914.70 | 684.825 |
| 348.15 | 49949.80 | 686.336 |
| 348.15 | 52166.80 | 688.088 |
| 348.15 | 55021.90 | 690.168 |
| 348.15 | 57945.30 | 692.261 |
| 348.16 | 60030.00 | 693.748 |
| 348.15 | 62063.30 | 695.106 |
| 348.15 | 64941.60 | 696.91 |
| 348.15 | 66153.40 | 697.788 |
| 353.15 | 100.50 | 631.649 |
| 353.15 | 336.00 | 631.995 |
| 353.15 | 572.60 | 632.233 |
| 353.15 | 926.00 | 632.774 |
| 353.15 | 1016.40 | 632.95 |
| 353.16 | 2113.40 | 634.631 |
| 353.15 | 2992.10 | 635.919 |
| 353.15 | 4963.90 | 638.644 |
| 353.15 | 7000.90 | 641.284 |
| 353.15 | 9062.30 | 643.911 |
| 353.15 | 10005.00 | 645.176 |
| 353.15 | 12127.50 | 647.788 |
| 353.15 | 14954.20 | 651.028 |
| 353.15 | 17977.40 | 654.406 |
| 353.15 | 19937.00 | 656.492 |
| 353.15 | 21893.60 | 658.507 |
| 353.15 | 24908.20 | 661.562 |
| 353.15 | 27850.30 | 664.482 |
| 353.15 | 29936.20 | 666.345 |
| 353.15 | 31876.00 | 668.022 |
| 353.15 | 32911.00 | 668.934 |
| 353.15 | 32960.80 | 669.075 |
| 353.16 | 33963.70 | 670.126 |
| 353.15 | 34945.40 | 670.985 |
| 353.15 | 37913.10 | 673.509 |
| 353.15 | 40142.80 | 675.336 |
| 353.15 | 42067.30 | 677.003 |
| 353.15 | 45001.70 | 679.292 |
| 353.15 | 48029.20 | 681.775 |
| 353.15 | 50145.10 | 683.478 |
| 353.15 | 52082.20 | 685.052 |
| 353.15 | 55132.20 | 687.213 |
| 353.15 | 57980.30 | 689.013 |

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| 353.15 | 60098.40 | 690.731 |
| 353.16 | 62042.50 | 692.223 |
| 353.15 | 65062.70 | 694.154 |
| 353.16 | 66024.30 | 694.802 |
| 358.15 | 100.40 | 626.935 |
| 358.15 | 264.10 | 627.168 |
| 358.15 | 508.40 | 627.316 |
| 358.15 | 926.80 | 628.098 |
| 358.15 | 1013.90 | 628.327 |
| 358.16 | 2083.90 | 629.903 |
| 358.15 | 3021.20 | 631.365 |
| 358.15 | 4930.00 | 634.077 |
| 358.16 | 6993.50 | 637.086 |
| 358.16 | 9030.20 | 639.755 |
| 358.15 | 10072.70 | 641.066 |
| 358.15 | 12136.80 | 643.735 |
| 358.15 | 14904.90 | 646.944 |
| 358.15 | 17965.40 | 650.491 |
| 358.16 | 20162.00 | 652.87 |
| 358.15 | 22174.60 | 654.965 |
| 358.15 | 25059.40 | 657.993 |
| 358.15 | 28035.20 | 660.974 |
| 358.15 | 30001.90 | 662.532 |
| 358.15 | 31977.70 | 664.488 |
| 358.15 | 32792.60 | 665.093 |
| 358.15 | 33039.30 | 665.404 |
| 358.15 | 33850.00 | 666.525 |
| 358.15 | 35026.50 | 667.567 |
| 358.15 | 37872.30 | 669.996 |
| 358.15 | 40037.40 | 671.748 |
| 358.15 | 42100.10 | 673.454 |
| 358.16 | 45054.00 | 675.954 |
| 358.15 | 47958.10 | 678.424 |
| 358.15 | 50037.90 | 680.129 |
| 358.15 | 52080.70 | 681.85 |
| 358.15 | 55073.40 | 684.059 |
| 358.15 | 57918.40 | 685.685 |
| 358.15 | 60042.70 | 687.68 |
| 358.15 | 62066.50 | 689.111 |
| 358.15 | 64986.10 | 691.283 |
| 358.15 | 66108.60 | 692.023 |
| 363.15 | 104.10 | 622.138 |
| 363.15 | 334.00 | 622.474 |
| 363.15 | 601.70 | 622.649 |

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| 363.15 | 892.90 | 623.267 |
| 363.15 | 1034.70 | 623.668 |
| 363.15 | 1986.00 | 625.081 |
| 363.15 | 2940.40 | 626.678 |
| 363.15 | 4979.20 | 629.757 |
| 363.16 | 6920.20 | 632.642 |
| 363.16 | 8964.80 | 635.395 |
| 363.15 | 9959.50 | 636.563 |
| 363.15 | 11970.70 | 639.421 |
| 363.15 | 14935.50 | 642.887 |
| 363.15 | 17973.30 | 646.544 |
| 363.15 | 19939.90 | 648.708 |
| 363.16 | 21932.90 | 650.806 |
| 363.15 | 24872.20 | 654.024 |
| 363.15 | 27992.70 | 657.078 |
| 363.15 | 30062.30 | 659.006 |
| 363.15 | 31961.10 | 660.63 |
| 363.15 | 33053.30 | 661.633 |
| 363.15 | 33032.60 | 661.606 |
| 363.15 | 33999.50 | 663.017 |
| 363.15 | 35028.30 | 664.03 |
| 363.15 | 37919.20 | 666.495 |
| 363.15 | 39916.00 | 668.059 |
| 363.15 | 42015.50 | 669.917 |
| 363.16 | 44986.80 | 672.551 |
| 363.15 | 47947.20 | 675.063 |
| 363.15 | 50050.30 | 676.807 |
| 363.15 | 52022.60 | 678.457 |
| 363.15 | 54940.40 | 680.815 |
| 363.15 | 57916.50 | 682.78 |
| 363.15 | 59980.00 | 684.625 |
| 363.15 | 62042.90 | 686.168 |
| 363.15 | 64924.10 | 688.267 |
| 363.15 | 66088.40 | 689.169 |

Reference *https://www.doi.org/10.1021/je5010214*

## Speed of sound, m/s

| Temperature, K - Fluid (supercritical or subcritical phases) | Pressure, kPa - Fluid (supercritical or subcritical phases) | Speed of sound, m/s - Fluid (supercritical or subcritical phases) |
|---|---|---|

| | | |
|---|---|---|
| 513.92 | 2500.00 | 266.66 |
| 525.23 | 2500.00 | 196.31 |
| 528.93 | 2500.00 | 167.01 |
| 534.12 | 2500.00 | 121.38 |
| 538.13 | 2500.00 | 101.28 |
| 544.09 | 2500.00 | 100.71 |
| 547.02 | 2500.00 | 107.6 |
| 552.59 | 2500.00 | 118.66 |
| 559.91 | 2500.00 | 129.19 |
| 564.02 | 2500.00 | 135.46 |
| 572.57 | 2500.00 | 144.47 |
| 584.19 | 2500.00 | 156.26 |
| 590.48 | 2500.00 | 161.58 |
| 601.60 | 2500.00 | 170.4 |
| 612.58 | 2500.00 | 179.23 |
| 620.87 | 2500.00 | 183.77 |
| 632.18 | 2500.00 | 189.44 |
| 640.72 | 2500.00 | 192.85 |
| 650.07 | 2500.00 | 195.77 |
| 513.59 | 3000.00 | 293.56 |
| 523.83 | 3000.00 | 242.56 |
| 528.41 | 3000.00 | 218.56 |
| 532.76 | 3000.00 | 193.81 |
| 538.36 | 3000.00 | 152.7 |
| 544.95 | 3000.00 | 115.6 |
| 549.04 | 3000.00 | 105.27 |
| 553.93 | 3000.00 | 110.64 |
| 574.87 | 5000.00 | 160.49 |
| 577.04 | 5000.00 | 154.18 |
| 582.31 | 5000.00 | 142.67 |
| 588.17 | 5000.00 | 139.88 |
| 592.28 | 5000.00 | 136.41 |
| 597.48 | 5000.00 | 135.43 |
| 602.30 | 5000.00 | 135.26 |
| 607.65 | 5000.00 | 136.72 |
| 615.11 | 5000.00 | 142.58 |
| 623.25 | 5000.00 | 150.58 |
| 632.29 | 5000.00 | 156.55 |
| 643.51 | 5000.00 | 165.41 |
| 513.58 | 6000.00 | 394.15 |
| 524.62 | 6000.00 | 357.73 |
| 529.10 | 6000.00 | 344.17 |
| 533.77 | 6000.00 | 331.99 |
| 539.09 | 6000.00 | 316.72 |

| | | |
|---|---|---|
| 543.60 | 6000.00 | 300.59 |
| 548.98 | 6000.00 | 283.97 |
| 553.05 | 6000.00 | 270.32 |
| 557.86 | 6000.00 | 255.8 |
| 563.84 | 6000.00 | 236.54 |
| 574.85 | 6000.00 | 211.93 |
| 583.18 | 6000.00 | 191.45 |
| 592.57 | 6000.00 | 176.14 |
| 604.10 | 6000.00 | 161.83 |
| 613.73 | 6000.00 | 158.49 |
| 559.74 | 3000.00 | 116.03 |
| 563.09 | 3000.00 | 119.84 |
| 574.33 | 3000.00 | 134.46 |
| 582.39 | 3000.00 | 142.99 |
| 591.77 | 3000.00 | 152.87 |
| 602.84 | 3000.00 | 161.38 |
| 612.37 | 3000.00 | 167.57 |
| 623.42 | 3000.00 | 174.58 |
| 632.04 | 3000.00 | 179.96 |
| 641.53 | 3000.00 | 186.21 |
| 650.90 | 3000.00 | 189.41 |
| 513.65 | 4000.00 | 333.84 |
| 524.25 | 4000.00 | 291.43 |
| 528.90 | 4000.00 | 269.01 |
| 533.55 | 4000.00 | 252.16 |
| 537.58 | 4000.00 | 231.06 |
| 541.47 | 4000.00 | 208.26 |
| 549.16 | 4000.00 | 178.39 |
| 553.43 | 4000.00 | 160.12 |
| 560.41 | 4000.00 | 132.63 |
| 563.94 | 4000.00 | 124.51 |
| 575.28 | 4000.00 | 113.58 |
| 584.60 | 4000.00 | 122.55 |
| 591.62 | 4000.00 | 127.84 |
| 603.68 | 4000.00 | 143.88 |
| 612.08 | 4000.00 | 149.82 |
| 621.22 | 4000.00 | 157.32 |
| 631.85 | 4000.00 | 163.15 |
| 641.95 | 4000.00 | 173.32 |
| 622.48 | 6000.00 | 158.77 |
| 632.41 | 6000.00 | 159.42 |
| 643.04 | 6000.00 | 164.74 |
| 513.40 | 8000.00 | 451.65 |
| 524.62 | 8000.00 | 417.84 |

| | | |
|---|---|---|
| 528.95 | 8000.00 | 403.55 |
| 533.57 | 8000.00 | 391.25 |
| 538.84 | 8000.00 | 376.34 |
| 542.55 | 8000.00 | 364.39 |
| 548.66 | 8000.00 | 346.4 |
| 553.19 | 8000.00 | 335.76 |
| 557.81 | 8000.00 | 325.48 |
| 563.58 | 8000.00 | 312.82 |
| 574.41 | 8000.00 | 287.41 |
| 583.10 | 8000.00 | 270.69 |
| 593.19 | 8000.00 | 249.19 |
| 604.67 | 8000.00 | 226.0 |
| 613.93 | 8000.00 | 218.01 |
| 620.20 | 8000.00 | 211.6 |
| 632.86 | 8000.00 | 201.03 |
| 642.59 | 8000.00 | 195.65 |
| 515.30 | 10000.00 | 481.16 |
| 523.19 | 10000.00 | 459.31 |
| 533.40 | 10000.00 | 437.12 |
| 543.16 | 10000.00 | 413.25 |
| 553.20 | 10000.00 | 388.87 |
| 563.03 | 10000.00 | 363.89 |
| 573.39 | 10000.00 | 345.21 |
| 579.18 | 10000.00 | 331.94 |
| 515.23 | 5000.00 | 363.89 |
| 521.41 | 5000.00 | 337.01 |
| 534.45 | 5000.00 | 293.97 |
| 543.50 | 5000.00 | 262.34 |
| 553.42 | 5000.00 | 225.17 |
| 565.65 | 5000.00 | 187.87 |
| 582.86 | 10000.00 | 325.02 |
| 587.85 | 10000.00 | 315.79 |
| 592.71 | 10000.00 | 307.49 |
| 603.51 | 10000.00 | 291.2 |
| 614.03 | 10000.00 | 272.94 |
| 623.13 | 10000.00 | 260.67 |

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| Pressure, kPa | Temperature, K | Speed of sound, m/s |
|---|---|---|
| 100.00 | 293.15 | 1151.69 |
| 100.00 | 298.16 | 1129.87 |
| 100.00 | 303.06 | 1108.88 |

| | | |
|---|---|---|
| 100.00 | 308.08 | 1087.42 |
| 100.00 | 313.10 | 1066.12 |
| 100.00 | 318.18 | 1044.54 |
| 15200.00 | 293.20 | 1256.33 |
| 15200.00 | 303.17 | 1218.64 |
| 15200.00 | 308.08 | 1200.43 |
| 15200.00 | 313.10 | 1182.05 |
| 15200.00 | 318.18 | 1163.39 |
| 30400.00 | 293.18 | 1341.5 |
| 30400.00 | 303.13 | 1306.98 |
| 30400.00 | 308.07 | 1290.28 |
| 30400.00 | 313.12 | 1273.35 |
| 30400.00 | 318.18 | 1256.47 |
| 45590.00 | 293.19 | 1416.6 |
| 45590.00 | 298.18 | 1400.09 |
| 45590.00 | 303.07 | 1384.42 |
| 45590.00 | 308.07 | 1368.71 |
| 45590.00 | 313.12 | 1352.98 |
| 45590.00 | 318.17 | 1337.39 |
| 60790.00 | 293.20 | 1484.48 |
| 60790.00 | 298.19 | 1468.69 |
| 60790.00 | 303.18 | 1453.68 |
| 60790.00 | 308.12 | 1438.95 |
| 60790.00 | 313.12 | 1424.3 |
| 60790.00 | 318.17 | 1409.63 |
| 75990.00 | 293.20 | 1546.46 |
| 75990.00 | 298.11 | 1531.64 |
| 75990.00 | 303.17 | 1517.17 |
| 75990.00 | 308.12 | 1503.23 |
| 75990.00 | 313.10 | 1489.21 |
| 75990.00 | 318.09 | 1475.54 |
| 91190.00 | 293.20 | 1603.69 |
| 91190.00 | 298.15 | 1589.43 |
| 91190.00 | 303.18 | 1575.68 |
| 91190.00 | 308.11 | 1562.39 |
| 91190.00 | 313.13 | 1549.03 |
| 91190.00 | 318.15 | 1535.72 |
| 101320.00 | 293.20 | 1639.7 |
| 101320.00 | 298.16 | 1625.72 |
| 101320.00 | 303.10 | 1612.63 |
| 101320.00 | 308.24 | 1599.12 |
| 101320.00 | 313.21 | 1586.17 |
| 101320.00 | 318.18 | 1573.59 |
| 111450.00 | 293.10 | 1674.29 |

| | | |
|---|---|---|
| 111450.00 | 298.13 | 1660.46 |
| 111450.00 | 298.16 | 1660.43 |
| 111450.00 | 303.15 | 1647.6 |
| 111450.00 | 308.21 | 1634.64 |
| 111450.00 | 313.20 | 1622.05 |
| 111450.00 | 318.18 | 1609.77 |
| 121580.00 | 293.16 | 1707.09 |
| 121580.00 | 298.14 | 1692.38 |
| 121580.00 | 303.10 | 1681.25 |
| 121580.00 | 308.17 | 1668.58 |
| 121580.00 | 313.13 | 1656.4 |
| 121580.00 | 318.17 | 1644.27 |

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# Legend

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| **af:** | Acentric Factor |
| **aigt:** | Autoignition Temperature |

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| **ap:** | Aniline Point |
| **chl:** | Standard liquid enthalpy of combustion |
| **cpg:** | Ideal gas heat capacity |
| **cpl:** | Liquid phase heat capacity |
| **dm:** | Dipole Moment |
| **dvisc:** | Dynamic viscosity |
| **fll:** | Lower Flammability Limit |
| **flu:** | Upper Flammability Limit |
| **fpo:** | Flash Point (Open Cup Method) |
| **gf:** | Standard Gibbs free energy of formation |
| **gyrad:** | Radius of Gyration |
| **hcg:** | Heat of Combustion, Gross form |
| **hcn:** | Heat of Combustion, Net Form |
| **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 |
| **ie:** | Ionization energy |
| **kvisc:** | Kinematic viscosity |
| **log10ws:** | Log10 of Water solubility in mol/l |
| **logp:** | Octanol/Water partition coefficient |
| **mcvol:** | McGowan's characteristic volume |
| **pc:** | Critical Pressure |
| **pvap:** | Vapor pressure |
| **rfi:** | Refractive Index |
| **rhoc:** | Critical density |
| **rhol:** | Liquid Density |
| **sfust:** | Entropy of fusion at a given temperature |
| **sl:** | Liquid phase molar entropy at standard conditions |
| **speedsl:** | Speed of sound in fluid |
| **srf:** | Surface Tension |
| **tb:** | Normal Boiling Point Temperature |
| **tbp:** | Boiling point at given pressure |
| **tc:** | Critical Temperature |
| **tf:** | Normal melting (fusion) point |
| **tt:** | Triple Point Temperature |
| **vc:** | Critical Volume |
| **volm:** | Molar Volume |
| **zc:** | Critical Compressibility |
| **zra:** | Rackett Parameter |

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