# Benzene, n-butyl-

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| **Other names:** | 1-PHENYLBUTANE<br>1-butylbenzene<br>Benzene, butyl-<br>Butylbenzene<br>UN 2709<br>n-Butylbenzene |
| **Inchi:** | InChI=1S/C10H14/c1-2-3-7-10-8-5-4-6-9-10/h4-6,8-9H,2-3,7H2,1H3 |
| **InchiKey:** | OCKPCBLVNKHBMX-UHFFFAOYSA-N |
| **Formula:** | C10H14 |
| **SMILES:** | CCCCc1ccccc1 |
| **Mol. weight [g/mol]:** | 134.22 |
| **CAS:** | 104-51-8 |

# Physical Properties

| Property code | Value | Unit | Source |
|---|---|---|---|
| af | 0.3930 | | KDB |
| affp | 791.90 | kJ/mol | NIST Webbook |
| basg | 764.20 | kJ/mol | NIST Webbook |
| chl | -5873.00 ± 1.10 | kJ/mol | NIST Webbook |
| chl | -5872.10 ± 1.10 | kJ/mol | NIST Webbook |
| dm | 0.40 | debye | KDB |
| gf | 144.80 | kJ/mol | KDB |
| hcg | 5872.08 | kJ/mol | KDB |
| hcn | 5563.967 | kJ/mol | KDB |
| hf | -13.80 ± 1.30 | kJ/mol | NIST Webbook |
| hf | -13.82 | kJ/mol | KDB |
| hf | -12.80 | kJ/mol | NIST Webbook |
| hfl | -63.90 ± 1.30 | kJ/mol | NIST Webbook |
| hfl | -62.90 ± 1.20 | kJ/mol | NIST Webbook |
| hfus | 15.70 | kJ/mol | Joback Method |
| hvap | 50.10 | kJ/mol | NIST Webbook |
| hvap | 50.80 | kJ/mol | NIST Webbook |
| hvap | 51.37 | kJ/mol | NIST Webbook |
| hvap | 51.00 ± 2.90 | kJ/mol | NIST Webbook |
| hvap | 50.10 | kJ/mol | NIST Webbook |
| ie | 8.71 ± 0.01 | eV | NIST Webbook |
| ie | 8.69 | eV | NIST Webbook |

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|---|---|---|---|
| ie | 8.69 ± 0.01 | eV | NIST Webbook |
| ie | 8.69 ± 0.05 | eV | NIST Webbook |
| ie | 8.69 ± 0.01 | eV | NIST Webbook |
| ie | 8.68 | eV | NIST Webbook |
| log10ws | -4.06 | | Estimated Solubility Method |
| log10ws | -4.06 | | Aqueous Solubility Prediction Method |
| logp | 3.029 | | Crippen Method |
| mcvol | 128.000 | ml/mol | McGowan Method |
| nfpaf | %!d(float64=2) | | KDB |
| nfpah | %!d(float64=2) | | KDB |
| pc | 2890.00 ± 40.00 | kPa | NIST Webbook |
| pc | 2887.00 ± 7.00 | kPa | NIST Webbook |
| pc | 2890.00 | kPa | KDB |
| rhoc | 269.78 ± 5.37 | kg/m3 | NIST Webbook |
| rhoc | 269.64 ± 10.07 | kg/m3 | NIST Webbook |
| rinpol | 1040.00 | | NIST Webbook |
| rinpol | 1046.00 | | NIST Webbook |
| rinpol | 1036.00 | | NIST Webbook |
| rinpol | 1037.00 | | NIST Webbook |
| rinpol | 1058.00 | | NIST Webbook |
| rinpol | 1041.00 | | NIST Webbook |
| rinpol | 170.00 | | NIST Webbook |
| rinpol | 1033.00 | | NIST Webbook |
| rinpol | 1047.00 | | NIST Webbook |
| rinpol | 1041.00 | | NIST Webbook |
| rinpol | 1040.00 | | NIST Webbook |
| rinpol | 1036.20 | | NIST Webbook |
| rinpol | 1048.00 | | NIST Webbook |
| rinpol | 1046.00 | | NIST Webbook |
| rinpol | 1041.00 | | NIST Webbook |
| rinpol | 1047.00 | | NIST Webbook |
| rinpol | 1048.00 | | NIST Webbook |
| rinpol | 1040.00 | | NIST Webbook |
| rinpol | 1058.00 | | NIST Webbook |
| rinpol | 1034.90 | | NIST Webbook |
| rinpol | 1029.40 | | NIST Webbook |
| rinpol | 1029.42 | | NIST Webbook |
| rinpol | 1060.00 | | NIST Webbook |
| rinpol | 1047.00 | | NIST Webbook |
| rinpol | 1046.00 | | NIST Webbook |
| rinpol | 1048.00 | | NIST Webbook |
| rinpol | 1048.00 | | NIST Webbook |
| rinpol | 1022.00 | | NIST Webbook |

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| rinpol | 1055.00 | NIST Webbook |
| rinpol | 1064.00 | NIST Webbook |
| rinpol | 1058.00 | NIST Webbook |
| rinpol | 1054.00 | NIST Webbook |
| rinpol | 1041.00 | NIST Webbook |
| rinpol | 1045.00 | NIST Webbook |
| rinpol | 1067.00 | NIST Webbook |
| rinpol | 1068.00 | NIST Webbook |
| rinpol | 1039.00 | NIST Webbook |
| rinpol | 1045.00 | NIST Webbook |
| rinpol | 1069.00 | NIST Webbook |
| rinpol | 1062.90 | NIST Webbook |
| rinpol | 1045.00 | NIST Webbook |
| rinpol | 1046.30 | NIST Webbook |
| rinpol | 1052.00 | NIST Webbook |
| rinpol | 1058.00 | NIST Webbook |
| rinpol | 1037.40 | NIST Webbook |
| rinpol | 1047.00 | NIST Webbook |
| rinpol | 1053.00 | NIST Webbook |
| rinpol | 1051.00 | NIST Webbook |
| rinpol | 1052.00 | NIST Webbook |
| rinpol | 1045.00 | NIST Webbook |
| rinpol | 1038.00 | NIST Webbook |
| rinpol | 1026.00 | NIST Webbook |
| rinpol | 1048.00 | NIST Webbook |
| rinpol | 1047.00 | NIST Webbook |
| rinpol | 1047.00 | NIST Webbook |
| rinpol | 1047.00 | NIST Webbook |
| rinpol | 1046.00 | NIST Webbook |
| rinpol | 1054.00 | NIST Webbook |
| rinpol | 1042.00 | NIST Webbook |
| rinpol | 1060.00 | NIST Webbook |
| rinpol | 1054.00 | NIST Webbook |
| rinpol | 1048.00 | NIST Webbook |
| rinpol | 1044.00 | NIST Webbook |
| rinpol | 1040.00 | NIST Webbook |
| rinpol | 1049.00 | NIST Webbook |
| rinpol | 1058.00 | NIST Webbook |
| rinpol | 1044.00 | NIST Webbook |
| rinpol | 1066.87 | NIST Webbook |
| rinpol | 1024.00 | NIST Webbook |
| rinpol | 1061.00 | NIST Webbook |
| rinpol | 1046.00 | NIST Webbook |
| rinpol | 1033.00 | NIST Webbook |

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| rinpol | 1061.00 | NIST Webbook |
| rinpol | 1053.70 | NIST Webbook |
| rinpol | 1030.00 | NIST Webbook |
| rinpol | 1042.19 | NIST Webbook |
| rinpol | 1078.00 | NIST Webbook |
| rinpol | 1040.68 | NIST Webbook |
| rinpol | 1040.00 | NIST Webbook |
| rinpol | 1058.00 | NIST Webbook |
| rinpol | 1039.00 | NIST Webbook |
| rinpol | 1043.00 | NIST Webbook |
| rinpol | 1062.90 | NIST Webbook |
| rinpol | 1072.40 | NIST Webbook |
| rinpol | 1037.00 | NIST Webbook |
| rinpol | 1037.00 | NIST Webbook |
| rinpol | 1046.00 | NIST Webbook |
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| rinpol | 1047.00 | NIST Webbook |
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| rinpol | 1067.00 | NIST Webbook |
| rinpol | 1046.00 | NIST Webbook |
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| rinpol | 1049.00 | NIST Webbook |
| rinpol | 1043.00 | NIST Webbook |
| rinpol | 1039.60 | NIST Webbook |
| rinpol | 1058.00 | NIST Webbook |
| rinpol | 1041.00 | NIST Webbook |
| rinpol | 1048.00 | NIST Webbook |
| rinpol | 1054.00 | NIST Webbook |
| rinpol | 1060.00 | NIST Webbook |
| rinpol | 1032.30 | NIST Webbook |
| rinpol | 1034.90 | NIST Webbook |
| rinpol | 1048.10 | NIST Webbook |
| rinpol | 1053.60 | NIST Webbook |
| rinpol | 1060.00 | NIST Webbook |
| rinpol | 1037.40 | NIST Webbook |
| rinpol | 1029.40 | NIST Webbook |
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| rinpol | 1037.00 | NIST Webbook |
| rinpol | 1029.42 | NIST Webbook |
| rinpol | 1051.00 | NIST Webbook |

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| rinpol | 1056.00 | NIST Webbook |
| rinpol | 1059.00 | NIST Webbook |
| rinpol | 1057.00 | NIST Webbook |
| rinpol | 1060.00 | NIST Webbook |
| rinpol | 1062.00 | NIST Webbook |
| rinpol | 1063.00 | NIST Webbook |
| rinpol | 1066.00 | NIST Webbook |
| rinpol | 1032.00 | NIST Webbook |
| rinpol | 1037.40 | NIST Webbook |
| rinpol | 1035.80 | NIST Webbook |
| rinpol | 1040.00 | NIST Webbook |
| rinpol | 1033.00 | NIST Webbook |
| rinpol | 1065.00 | NIST Webbook |
| rinpol | 1033.00 | NIST Webbook |
| rinpol | 1040.00 | NIST Webbook |
| rinpol | 1035.20 | NIST Webbook |
| rinpol | 1047.00 | NIST Webbook |
| rinpol | 1068.00 | NIST Webbook |
| rinpol | 1040.00 | NIST Webbook |
| rinpol | 1042.00 | NIST Webbook |
| rinpol | 1057.00 | NIST Webbook |
| rinpol | 1040.00 | NIST Webbook |
| rinpol | 1063.00 | NIST Webbook |
| rinpol | 1047.40 | NIST Webbook |
| rinpol | 1039.00 | NIST Webbook |
| rinpol | 1044.00 | NIST Webbook |
| rinpol | 1058.00 | NIST Webbook |
| rinpol | 1061.00 | NIST Webbook |
| rinpol | 1053.70 | NIST Webbook |
| rinpol | 1053.30 | NIST Webbook |
| rinpol | 1050.10 | NIST Webbook |
| rinpol | 1053.70 | NIST Webbook |
| rinpol | 1055.90 | NIST Webbook |
| rinpol | 1036.40 | NIST Webbook |
| rinpol | 1054.00 | NIST Webbook |
| rinpol | 1042.00 | NIST Webbook |
| rinpol | 1030.00 | NIST Webbook |
| rinpol | 1043.20 | NIST Webbook |
| rinpol | 1050.10 | NIST Webbook |
| rinpol | 1053.70 | NIST Webbook |
| rinpol | 1055.90 | NIST Webbook |
| rinpol | 1053.70 | NIST Webbook |
| rinpol | 1053.30 | NIST Webbook |
| rinpol | 1054.00 | NIST Webbook |

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| rinpol | 1047.00 | NIST Webbook |
| rinpol | 1041.77 | NIST Webbook |
| rinpol | 1042.19 | NIST Webbook |
| rinpol | 1042.00 | NIST Webbook |
| rinpol | 1066.40 | NIST Webbook |
| rinpol | 1056.40 | NIST Webbook |
| rinpol | 1062.20 | NIST Webbook |
| rinpol | 1078.00 | NIST Webbook |
| rinpol | 1071.80 | NIST Webbook |
| rinpol | 1074.50 | NIST Webbook |
| rinpol | 1051.00 | NIST Webbook |
| rinpol | 1037.42 | NIST Webbook |
| rinpol | 1040.68 | NIST Webbook |
| rinpol | 1043.02 | NIST Webbook |
| rinpol | 1054.18 | NIST Webbook |
| rinpol | 1057.89 | NIST Webbook |
| rinpol | 1060.55 | NIST Webbook |
| rinpol | 1040.00 | NIST Webbook |
| ripol | 1312.00 | NIST Webbook |
| ripol | 1309.10 | NIST Webbook |
| ripol | 1356.40 | NIST Webbook |
| ripol | 1362.10 | NIST Webbook |
| ripol | 1367.70 | NIST Webbook |
| ripol | 1310.00 | NIST Webbook |
| ripol | 1284.00 | NIST Webbook |
| ripol | 1337.60 | NIST Webbook |
| ripol | 1301.90 | NIST Webbook |
| ripol | 1284.00 | NIST Webbook |
| ripol | 1328.00 | NIST Webbook |
| ripol | 1335.00 | NIST Webbook |
| ripol | 1343.00 | NIST Webbook |
| ripol | 1321.00 | NIST Webbook |
| ripol | 1306.00 | NIST Webbook |
| ripol | 1322.00 | NIST Webbook |
| ripol | 1324.00 | NIST Webbook |
| ripol | 1325.00 | NIST Webbook |
| ripol | 1308.00 | NIST Webbook |
| ripol | 1306.00 | NIST Webbook |
| ripol | 1280.00 | NIST Webbook |
| ripol | 1284.00 | NIST Webbook |
| ripol | 1320.00 | NIST Webbook |
| ripol | 1321.00 | NIST Webbook |
| ripol | 1332.00 | NIST Webbook |
| ripol | 1348.00 | NIST Webbook |

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| ripol | 1359.00 | | NIST Webbook |
| ripol | 1310.00 | | NIST Webbook |
| ripol | 1284.00 | | NIST Webbook |
| ripol | 1269.00 | | NIST Webbook |
| ripol | 1301.00 | | NIST Webbook |
| ripol | 1323.00 | | NIST Webbook |
| ripol | 1271.00 | | NIST Webbook |
| ripol | 1310.00 | | NIST Webbook |
| ripol | 1312.00 | | NIST Webbook |
| ripol | 1319.00 | | NIST Webbook |
| ripol | 1310.00 | | NIST Webbook |
| ripol | 1297.00 | | NIST Webbook |
| ripol | 1309.00 | | NIST Webbook |
| ripol | 1284.00 | | NIST Webbook |
| ripol | 1338.00 | | NIST Webbook |
| ripol | 1338.00 | | NIST Webbook |
| ripol | 1312.00 | | NIST Webbook |
| ripol | 1309.00 | | NIST Webbook |
| ripol | 1312.00 | | NIST Webbook |
| ripol | 1316.00 | | NIST Webbook |
| ripol | 1291.00 | | NIST Webbook |
| ripol | 1310.00 | | NIST Webbook |
| ripol | 1320.00 | | NIST Webbook |
| ripol | 1269.00 | | NIST Webbook |
| ripol | 1304.00 | | NIST Webbook |
| sg | 437.86 | J/mol×K | NIST Webbook |
| sl | 321.21 | J/mol×K | NIST Webbook |
| sl | 321.30 | J/mol×K | NIST Webbook |
| tb | 455.00 ± 3.00 | K | NIST Webbook |
| tb | 456.00 | K | NIST Webbook |
| tb | 453.65 ± 2.00 | K | NIST Webbook |
| tb | 456.40 | K | NIST Webbook |
| tb | 456.43 ± 0.20 | K | NIST Webbook |
| tb | 454.00 ± 4.00 | K | NIST Webbook |
| tb | 456.60 ± 1.00 | K | NIST Webbook |
| tb | 456.00 ± 3.00 | K | NIST Webbook |
| tb | 456.41 ± 0.30 | K | NIST Webbook |
| tb | 455.00 ± 3.00 | K | NIST Webbook |
| tb | 455.70 ± 1.50 | K | NIST Webbook |
| tb | 456.05 ± 0.30 | K | NIST Webbook |
| tb | 456.50 ± 0.30 | K | NIST Webbook |
| tb | 456.25 ± 0.40 | K | NIST Webbook |
| tb | 456.41 ± 0.30 | K | NIST Webbook |
| tb | 456.00 ± 0.70 | K | NIST Webbook |

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|---|---|---|---|
| tb | 456.42 ± 0.03 | K | NIST Webbook |
| tb | 456.30 ± 0.30 | K | NIST Webbook |
| tb | 456.41 ± 0.10 | K | NIST Webbook |
| tb | 456.30 ± 0.50 | K | NIST Webbook |
| tb | 456.41 ± 0.30 | K | NIST Webbook |
| tb | 456.50 ± 0.30 | K | NIST Webbook |
| tb | 456.25 ± 0.30 | K | NIST Webbook |
| tb | 456.25 ± 0.30 | K | NIST Webbook |
| tb | 456.50 ± 0.20 | K | NIST Webbook |
| tb | 456.50 | K | NIST Webbook |
| tb | 456.40 | K | Isobaric (vapour + liquid) equilibria for N-formylmorpholine with ethylbenzene, n-butylbenzene, iso-propylbenzene and 1,2,4-trimethylbenzene at 101.33 kPa |
| tb | 456.25 ± 0.30 | K | NIST Webbook |
| tb | 453.00 ± 5.00 | K | NIST Webbook |
| tb | 453.00 ± 4.00 | K | NIST Webbook |
| tb | 456.50 ± 0.20 | K | NIST Webbook |
| tb | 456.38 | K | Isobaric vapour + liquid equilibria for three binary systems (toluene + anisole, nbutylbenzene + anisole, and guaiacol + anisole) at 101.33 kPa |
| tb | 456.45 ± 0.30 | K | NIST Webbook |
| tb | 457.00 ± 4.00 | K | NIST Webbook |
| tb | 451.00 ± 5.00 | K | NIST Webbook |
| tb | 453.00 ± 2.00 | K | NIST Webbook |
| tb | 453.00 ± 3.00 | K | NIST Webbook |
| tb | 442.15 ± 2.50 | K | NIST Webbook |
| tb | 466.00 ± 2.00 | K | NIST Webbook |
| tb | 456.41 ± 0.30 | K | NIST Webbook |
| tb | 456.41 ± 0.20 | K | NIST Webbook |
| tb | 456.34 ± 0.30 | K | NIST Webbook |
| tb | 456.25 ± 0.30 | K | NIST Webbook |
| tb | 455.00 ± 2.00 | K | NIST Webbook |
| tb | 454.50 ± 0.80 | K | NIST Webbook |
| tb | 456.46 | K | KDB |
| tb | 453.15 ± 2.00 | K | NIST Webbook |
| tc | 660.50 ± 0.50 | K | NIST Webbook |
| tc | 660.50 | K | KDB |
| tc | 661.00 ± 0.50 | K | NIST Webbook |
| tc | 660.45 ± 0.10 | K | NIST Webbook |
| tc | 660.05 ± 0.50 | K | NIST Webbook |

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|---|---|---|---|
| tc | 660.50 | K | NIST Webbook |
| tf | 185.19 | K | Aqueous Solubility Prediction Method |
| tf | 185.18 ± 0.30 | K | NIST Webbook |
| tf | 185.18 ± 0.04 | K | NIST Webbook |
| tf | 185.00 ± 0.50 | K | NIST Webbook |
| tf | 185.61 ± 0.30 | K | NIST Webbook |
| tf | 184.70 ± 1.50 | K | NIST Webbook |
| tf | 184.70 ± 1.00 | K | NIST Webbook |
| tf | 185.15 ± 0.20 | K | NIST Webbook |
| tf | 185.20 | K | KDB |
| tf | 192.00 ± 0.30 | K | NIST Webbook |
| tf | 185.61 ± 0.20 | K | NIST Webbook |
| tf | 185.15 ± 0.20 | K | NIST Webbook |
| tf | 184.97 ± 0.20 | K | NIST Webbook |
| tf | 185.00 ± 0.20 | K | NIST Webbook |
| tt | 184.60 ± 0.25 | K | NIST Webbook |
| tt | 185.14 ± 0.01 | K | NIST Webbook |
| tt | 185.30 ± 0.01 | K | NIST Webbook |
| vc | 0.497 | m3/kmol | NIST Webbook |
| vc | 0.497 | m3/kmol | KDB |
| zc | 0.2615440 | | KDB |

# Temperature Dependent Properties

| Property code | Value | Unit | Temperature [K] | Source |
|---|---|---|---|---|
| cpg | 335.30 | J/mol×K | 659.45 | Joback Method |
| cpg | 271.45 | J/mol×K | 488.98 | Joback Method |
| cpg | 285.75 | J/mol×K | 523.07 | Joback Method |
| cpg | 299.25 | J/mol×K | 557.17 | Joback Method |
| cpg | 311.99 | J/mol×K | 591.26 | Joback Method |
| cpg | 323.99 | J/mol×K | 625.36 | Joback Method |
| cpg | 256.33 | J/mol×K | 454.88 | Joback Method |
| cpl | 243.34 | J/mol×K | 298.15 | NIST Webbook |
| cpl | 203.00 | J/mol×K | 293.00 | NIST Webbook |
| cpl | 240.20 | J/mol×K | 298.20 | NIST Webbook |
| cpl | 241.00 | J/mol×K | 298.15 | NIST Webbook |

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|---|---|---|---|---|
| dvisc | 0.0009010 | Pa×s | 303.15 | Density and Viscosity of Propyl Formate + Aromatic Hydrocarbons at T = (303.15, 308.15, and 313.15) K |
| dvisc | 0.0008440 | Pa×s | 308.15 | Density and Viscosity of Propyl Formate + Aromatic Hydrocarbons at T = (303.15, 308.15, and 313.15) K |
| dvisc | 0.0007870 | Pa×s | 313.15 | Density and Viscosity of Propyl Formate + Aromatic Hydrocarbons at T = (303.15, 308.15, and 313.15) K |
| dvisc | 0.0007870 | Pa×s | 313.15 | Physical Properties of Binary Mixtures of Ethyl Formate with Benzene, Isopropyl Benzene, Isobutyl Benzene, and Butylbenzene at (303.15, 308.15, and 313.15) K |
| dvisc | 0.0009010 | Pa×s | 303.15 | Physical Properties of Binary Mixtures of Ethyl Formate with Benzene, Isopropyl Benzene, Isobutyl Benzene, and Butylbenzene at (303.15, 308.15, and 313.15) K |
| dvisc | 0.0008440 | Pa×s | 308.15 | Physical Properties of Binary Mixtures of Ethyl Formate with Benzene, Isopropyl Benzene, Isobutyl Benzene, and Butylbenzene at (303.15, 308.15, and 313.15) K |
| hfust | 10.98 | kJ/mol | 184.60 | NIST Webbook |
| hfust | 11.22 | kJ/mol | 185.30 | NIST Webbook |
| hfust | 11.22 | kJ/mol | 185.30 | NIST Webbook |

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|---|---|---|---|---|
| hvapt | 47.40 ± 0.20 | kJ/mol | 422.00 | NIST Webbook |
| hvapt | 53.50 | kJ/mol | 323.00 | NIST Webbook |
| hvapt | 45.70 | kJ/mol | 416.00 | NIST Webbook |
| hvapt | 48.00 ± 0.10 | kJ/mol | 343.00 | NIST Webbook |
| hvapt | 46.80 ± 0.10 | kJ/mol | 358.00 | NIST Webbook |
| hvapt | 37.50 ± 0.70 | kJ/mol | 422.00 | NIST Webbook |
| hvapt | 45.20 | kJ/mol | 414.00 | NIST Webbook |
| hvapt | 38.87 | kJ/mol | 456.40 | NIST Webbook |
| hvapt | 40.60 ± 0.40 | kJ/mol | 422.00 | NIST Webbook |
| hvapt | 43.50 ± 0.20 | kJ/mol | 422.00 | NIST Webbook |
| hvapt | 39.25 | kJ/mol | 456.40 | KDB |
| hvapt | 46.00 ± 0.10 | kJ/mol | 368.00 | NIST Webbook |
| rfi | 1.48940 | | 293.10 | Extraction of Butylbenzene from Dodecane Using Hexafluorophosphate-Based Ionic Liquids: Effect of Cation Change |
| rfi | 1.48950 | | 293.15 | Densities, Viscosities, and Refractive Indices of Binary Mixtures of Anisole with Benzene, Methylbenzene, Ethylbenzene, Propylbenzene, and Butylbenzene at (293.15 and 303.15) K |
| rfi | 1.48450 | | 303.15 | Densities, Viscosities, and Refractive Indices of Binary Mixtures of Anisole with Benzene, Methylbenzene, Ethylbenzene, Propylbenzene, and Butylbenzene at (293.15 and 303.15) K |
| rfi | 1.48950 | | 293.10 | Extraction of propylbenzene or butylbenzene from dodecane using 4-methyl-N-butylpyridinium tetrafluoroborate, [mebupy][BF4], as an ionic liquid at different temperatures |

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| rfi | 1.48740 | | 298.15 | Excess Molar Volumes of (propiophenone + benzene, or toluene, or ethylbenzene, or butylbenzene) at temperatures 298.15 K and 328.15 K |
| rfi | 1.48735 | | 298.15 | Effect of Temperature on the Change of Refractive Index on Mixing for Butyl Acetate + Aromatic Hydrocarbons |
| rfi | 1.48742 | | 298.15 | KDB |
| rhol | 820.30 | kg/m3 | 343.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Selected Ternary Mixtures of n-Butylcyclohexane + a Linear Alkane (n-Hexadcane or n-Dodecane) + an Aromatic Compound (Toluene, n-Butylbenzene, or n-Hexylbenzene) |
| rhol | 844.60 | kg/m3 | 313.15 | Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5 |

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|---|---|---|---|---|
| rhol | 836.51 | kg/m3 | 323.15 | Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5 |
| rhol | 860.00 | kg/m3 | 293.00 | KDB |
| rhol | 856.29 | kg/m3 | 298.15 | Thermodynamic study of 1,1,2,2-tetrachloroethane + hydrocarbon mixtures I. Excess and solvation enthalpies |
| rhol | 860.60 | kg/m3 | 293.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Selected Ternary Mixtures of n-Butylcyclohexane + a Linear Alkane (n-Hexadcane or n-Dodecane) + an Aromatic Compound (Toluene, n-Butylbenzene, or n-Hexylbenzene) |

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|---|---|---|---|---|
| rhol | 852.56 | kg/m3 | 303.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Selected Ternary Mixtures of n-Butylcyclohexane + a Linear Alkane (n-Hexadcane or n-Dodecane) + an Aromatic Compound (Toluene, n-Butylbenzene, or n-Hexylbenzene) |
| rhol | 844.50 | kg/m3 | 313.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Selected Ternary Mixtures of n-Butylcyclohexane + a Linear Alkane (n-Hexadcane or n-Dodecane) + an Aromatic Compound (Toluene, n-Butylbenzene, or n-Hexylbenzene) |
| rhol | 836.41 | kg/m3 | 323.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Selected Ternary Mixtures of n-Butylcyclohexane + a Linear Alkane (n-Hexadcane or n-Dodecane) + an Aromatic Compound (Toluene, n-Butylbenzene, or n-Hexylbenzene) |

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|---|---|---|---|---|
| rhol | 828.29 | kg/m3 | 333.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Selected Ternary Mixtures of n-Butylcyclohexane + a Linear Alkane (n-Hexadcane or n-Dodecane) + an Aromatic Compound (Toluene, n-Butylbenzene, or n-Hexylbenzene) |
| rhol | 828.38 | kg/m3 | 333.15 | Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5 |
| rhol | 892.60 | kg/m3 | 253.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Binary Mixtures of n-Hexylbenzene (1) or n-Butylbenzene (1) in 2,2,4,6,6-Pentamethylheptane (2) or 2,2,4,4,6,8,8-Heptamethylnonane (2) at 0.1 MPa |

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|---|---|---|---|---|
| rhol | 864.47 | kg/m3 | 288.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Binary Mixtures of n-Hexylbenzene (1) or n-Butylbenzene (1) in 2,2,4,6,6-Pentamethylheptane (2) or 2,2,4,4,6,8,8-Heptamethylnonane (2) at 0.1 MPa |
| rhol | 860.17 | kg/m3 | 293.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Binary Mixtures of n-Hexylbenzene (1) or n-Butylbenzene (1) in 2,2,4,6,6-Pentamethylheptane (2) or 2,2,4,4,6,8,8-Heptamethylnonane (2) at 0.1 MPa |
| rhol | 852.13 | kg/m3 | 303.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Binary Mixtures of n-Hexylbenzene (1) or n-Butylbenzene (1) in 2,2,4,6,6-Pentamethylheptane (2) or 2,2,4,4,6,8,8-Heptamethylnonane (2) at 0.1 MPa |
| rhol | 844.07 | kg/m3 | 313.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Binary Mixtures of n-Hexylbenzene (1) or n-Butylbenzene (1) in 2,2,4,6,6-Pentamethylheptane (2) or 2,2,4,4,6,8,8-Heptamethylnonane (2) at 0.1 MPa |

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|---|---|---|---|---|
| rhol | 835.98 | kg/m3 | 323.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Binary Mixtures of n-Hexylbenzene (1) or n-Butylbenzene (1) in 2,2,4,6,6-Pentamethylheptane (2) or 2,2,4,4,6,8,8-Heptamethylnonane (2) at 0.1 MPa |
| rhol | 827.86 | kg/m3 | 333.15 | Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Binary Mixtures of n-Hexylbenzene (1) or n-Butylbenzene (1) in 2,2,4,6,6-Pentamethylheptane (2) or 2,2,4,4,6,8,8-Heptamethylnonane (2) at 0.1 MPa |
| rhol | 892.80 | kg/m3 | 253.15 | Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5 |

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|---|---|---|---|---|
| rhol | 864.70 | kg/m3 | 288.15 | Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5 |
| rhol | 860.69 | kg/m3 | 293.15 | Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5 |
| rhol | 856.68 | kg/m3 | 298.15 | Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5 |

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|---|---|---|---|---|
| rhol | 852.65 | kg/m3 | 303.15 | Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Quaternary Mixtures of n-Dodecane (1), n-Butylcyclohexane (2), n-Butylbenzene (3), and 2,2,4,4,6,8,8-Heptamethylnonane (4) at 0.1 MPa as Potential Surrogate Mixtures for Military Jet Fuel, JP-5 |
| rhol | 856.29 | kg/m3 | 298.15 | Excess Enthalpies of Chloroalkylbenzene + Alkylbenzene Mixtures |
| sfust | 59.50 | J/mol×K | 184.60 | NIST Webbook |
| srf | 0.03 | N/m | 293.20 | KDB |
| srf | 0.03 | N/m | 294.20 | Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Binary Mixtures of Butylbenzene + Linear Alkanes (n-Decane, n-Dodecane, n-Tetradecane, n-Hexadecane, or n-Heptadecane) at 0.1 MPa |

# Correlations

| Information | Value |
|---|---|
| Property code | pvap |
| Equation | ln(Pvp) = A + B/(T + C) |
| Coeff. A | 1.45284e+01 |
| Coeff. B | -3.96130e+03 |
| Coeff. C | -5.67370e+01 |
| Temperature range (K), min. | 334.90 |

| | |
|---|---|
| Temperature range (K), max. | 486.52 |

| Information | Value |
|---|---|
| Property code | pvap |
| Equation | ln(Pvp) = A + B/T + C*ln(T) + D*T^2 |
| Coeff. A | 1.12433e+02 |
| Coeff. B | -1.01044e+04 |
| Coeff. C | -1.42573e+01 |
| Coeff. D | 7.81134e-06 |
| Temperature range (K), min. | 185.30 |
| Temperature range (K), max. | 660.55 |

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| **Density and Viscosity of Propyl Formate + Aromatic Hydrocarbons at T = (293.15, 298.15, and 313.15) K:** | https://www.doi.org/10.1021/je901071x |
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| **McGowan Method:** | http://link.springer.com/article/10.1007/BF02311772 |
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| **Densities, Viscosities, Speeds of Sound, Bulk Moduli, Surface Tensions, and Flash Points of Binary Mixtures of 1-Ethylbenzene + 1-Propanol at T = (293.15 and 303.15) K:** | https://www.doi.org/10.1021/acs.jced.8b01233 |
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| **Density, Viscosity, Speed of Sound, Bulk Modulus, Surface Tension, and Flash Point of Binary Mixtures of 1-Ethylbenzene + 1-Butanol at T = (293.15 and 303.15) K:** | https://www.doi.org/10.1021/acs.jced.8b00635 |
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# Legend

| | |
|---|---|
| **af:** | Acentric Factor |
| **affp:** | Proton affinity |
| **basg:** | Gas basicity |
| **chl:** | Standard liquid enthalpy of combustion |
| **cpg:** | Ideal gas heat capacity |
| **cpl:** | Liquid phase heat capacity |
| **dm:** | Dipole Moment |
| **dvisc:** | Dynamic viscosity |
| **gf:** | Standard Gibbs free energy of formation |
| **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 |
| **hvap:** | Enthalpy of vaporization at standard conditions |
| **hvapt:** | Enthalpy of vaporization at a given temperature |
| **ie:** | Ionization energy |
| **log10ws:** | Log10 of Water solubility in mol/l |
| **logp:** | Octanol/Water partition coefficient |
| **mcvol:** | McGowan's characteristic volume |
| **nfpaf:** | NFPA Fire Rating |
| **nfpah:** | NFPA Health Rating |
| **pc:** | Critical Pressure |
| **pvap:** | Vapor pressure |
| **rfi:** | Refractive Index |
| **rhoc:** | Critical density |
| **rhol:** | Liquid Density |

| | |
|---|---|
| **rinpol:** | Non-polar retention indices |
| **ripol:** | Polar retention indices |
| **sfust:** | Entropy of fusion at a given temperature |
| **sg:** | Molar entropy at standard conditions |
| **sl:** | Liquid phase molar entropy at standard conditions |
| **srf:** | Surface Tension |
| **tb:** | Normal Boiling Point Temperature |
| **tc:** | Critical Temperature |
| **tf:** | Normal melting (fusion) point |
| **tt:** | Triple Point Temperature |
| **vc:** | Critical Volume |
| **zc:** | Critical Compressibility |

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