

Thermal conductivity of liquids: Straight chain aliphatic esters

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THE PREPARATION OF THIS DATA ITEM

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THERMAL CONDUCTIVITY OF LIQUIDS: STRAIGHT CHAIN ALIPHATIC ESTERS

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Data sheets for each of the liquids are given in the following order:-

Formula	Name	Alternative Name(s)	
ALKYL METHANOATES (FORMATES)			
1. HCOOCH_3	Methyl methanoate	Methyl formate	9
2. $\text{HCOOCH}_2\text{CH}_3$	Ethyl methanoate	Ethyl formate	10
3. $\text{HCOO}[\text{CH}_2]_2\text{CH}_3$	Propyl methanoate	Propyl formate	12
4. $\text{HCOO}[\text{CH}_2]_3\text{CH}_3$	Butyl methanoate	Butyl formate	13
5. $\text{HCOO}[\text{CH}_2]_4\text{CH}_3$	Pentyl methanoate	Pentyl formate	14
6. $\text{HCOO}[\text{CH}_2]_5\text{CH}_3$	Hexyl methanoate	Hexyl formate	15
7. $\text{HCOO}[\text{CH}_2]_6\text{CH}_3$	Heptyl methanoate	Heptyl formate	16
8. $\text{HCOO}[\text{CH}_2]_7\text{CH}_3$	Octyl methanoate	Octyl formate	17
9. $\text{HCOO}[\text{CH}_2]_8\text{CH}_3$	Nonyl methanoate	Nonyl formate	18
10. $\text{HCOO}[\text{CH}_2]_9\text{CH}_3$	Decyl methanoate	Decyl formate	19
11. $\text{HCOO}[\text{CH}_2]_{11}\text{CH}_3$	Dodecyl methanoate	Dodecyl formate	20
12. $\text{HCOO}[\text{CH}_2]_{13}\text{CH}_3$	Tetradecyl methanoate	Tetradecyl formate	21
13. $\text{HCOO}[\text{CH}_2]_{15}\text{CH}_3$	Hexadecyl methanoate	Hexadecyl formate	22
14. $\text{HCOO}[\text{CH}_2]_{17}\text{CH}_3$	Octadecyl methanoate	Octadecyl formate	23

Formula

Name

Alternative Name(s)

ALKYL ETHANOATES (ACETATES)

15. $\text{CH}_3\text{COOCH}_3$	Methyl ethanoate	Methyl acetate		24
16. $\text{CH}_3\text{COOCH}_2\text{CH}_3$	Ethyl ethanoate	Ethyl acetate		26
17. $\text{CH}_3\text{COO}[\text{CH}_2]_2\text{CH}_3$	Propyl ethanoate	Propyl acetate		28
18. $\text{CH}_3\text{COO}[\text{CH}_2]_3\text{CH}_3$	Butyl ethanoate	Butyl acetate		29
19. $\text{CH}_3\text{COO}[\text{CH}_2]_4\text{CH}_3$	Pentyl ethanoate	Pentyl acetate	Amyl acetate	31
20. $\text{CH}_3\text{COO}[\text{CH}_2]_5\text{CH}_3$	Hexyl ethanoate	Hexyl acetate		33
21. $\text{CH}_3\text{COO}[\text{CH}_2]_6\text{CH}_3$	Heptyl ethanoate	Heptyl acetate		34
22. $\text{CH}_3\text{COO}[\text{CH}_2]_7\text{CH}_3$	Octyl ethanoate	Octyl acetate		35
23. $\text{CH}_3\text{COO}[\text{CH}_2]_8\text{CH}_3$	Nonyl ethanoate	Nonyl acetate		36
24. $\text{CH}_3\text{COO}[\text{CH}_2]_9\text{CH}_3$	Decyl ethanoate	Decyl acetate		37
25. $\text{CH}_3\text{COO}[\text{CH}_2]_{11}\text{CH}_3$	Dodecyl ethanoate	Dodecyl acetate		38
26. $\text{CH}_3\text{COO}[\text{CH}_2]_{13}\text{CH}_3$	Tetradecyl ethanoate	Tetradecyl acetate		39
27. $\text{CH}_3\text{COO}[\text{CH}_2]_{15}\text{CH}_3$	Hexadecyl ethanoate	Hexadecyl acetate	Cetyl acetate	40
28. $\text{CH}_3\text{COO}[\text{CH}_2]_{17}\text{CH}_3$	Octadecyl ethanoate	Octadecyl acetate		41

ALKYL PROPANOATES (PROPIONATES)

29. $\text{CH}_3\text{CH}_2\text{COOCH}_3$	Methyl propanoate	Methyl propionate		42
30. $\text{CH}_3\text{CH}_2\text{COOCH}_2\text{CH}_3$	Ethyl propanoate	Ethyl propionate		43
31. $\text{CH}_3\text{CH}_2\text{COO}[\text{CH}_2]_2\text{CH}_3$	Propyl propanoate	Propyl propionate		44
32. $\text{CH}_3\text{CH}_2\text{COO}[\text{CH}_2]_3\text{CH}_3$	Butyl propanoate	Butyl propionate		45
33. $\text{CH}_3\text{CH}_2\text{COO}[\text{CH}_2]_4\text{CH}_3$	Pentyl propanoate	Pentyl propionate	Amyl propionate	46
34. $\text{CH}_3\text{CH}_2\text{COO}[\text{CH}_2]_5\text{CH}_3$	Hexyl propanoate	Hexyl propionate		47
35. $\text{CH}_3\text{CH}_2\text{COO}[\text{CH}_2]_6\text{CH}_3$	Heptyl propanoate	Heptyl propionate		48
36. $\text{CH}_3\text{CH}_2\text{COO}[\text{CH}_2]_7\text{CH}_3$	Octyl propanoate	Octyl propionate		49
37. $\text{CH}_3\text{CH}_2\text{COO}[\text{CH}_2]_8\text{CH}_3$	Nonyl propanoate	Nonyl propionate		50
38. $\text{CH}_3\text{CH}_2\text{COO}[\text{CH}_2]_9\text{CH}_3$	Decyl propanoate	Decyl propionate		51
39. $\text{CH}_3\text{CH}_2\text{COO}[\text{CH}_2]_{11}\text{CH}_3$	Dodecyl propanoate	Dodecyl propionate		52
40. $\text{CH}_3\text{CH}_2\text{COO}[\text{CH}_2]_{13}\text{CH}_3$	Tetradecyl propanoate	Tetradecyl propionate		53
41. $\text{CH}_3\text{CH}_2\text{COO}[\text{CH}_2]_{15}\text{CH}_3$	Hexadecyl propanoate	Hexadecyl propionate	Cetyl propionate	54
42. $\text{CH}_3\text{CH}_2\text{COO}[\text{CH}_2]_{17}\text{CH}_3$	Octadecyl propanoate	Octadecyl propionate		55

ALKYL BUTANOATES (BUTYRATES)

43. $\text{CH}_3[\text{CH}_2]_2\text{COOCH}_3$	Methyl butanoate	Methyl butyrate		56
44. $\text{CH}_3[\text{CH}_2]_2\text{COOCH}_2\text{CH}_3$	Ethyl butanoate	Ethyl butyrate		57
45. $\text{CH}_3[\text{CH}_2]_2\text{COO}[\text{CH}_2]_2\text{CH}_3$	Propyl butanoate	Propyl butyrate		59
46. $\text{CH}_3[\text{CH}_2]_2\text{COO}[\text{CH}_2]_3\text{CH}_3$	Butyl butanoate	Butyl butyrate		60
47. $\text{CH}_3[\text{CH}_2]_2\text{COO}[\text{CH}_2]_4\text{CH}_3$	Pentyl butanoate	Pentyl butyrate	Amyl butyrate	61
48. $\text{CH}_3[\text{CH}_2]_2\text{COO}[\text{CH}_2]_5\text{CH}_3$	Hexyl butanoate	Hexyl butyrate		62
49. $\text{CH}_3[\text{CH}_2]_2\text{COO}[\text{CH}_2]_6\text{CH}_3$	Heptyl butanoate	Heptyl butyrate		63
50. $\text{CH}_3[\text{CH}_2]_2\text{COO}[\text{CH}_2]_7\text{CH}_3$	Octyl butanoate	Octyl butyrate		64
51. $\text{CH}_3[\text{CH}_2]_2\text{COO}[\text{CH}_2]_8\text{CH}_3$	Nonyl butanoate	Nonyl butyrate		65

Formula	Name	Alternative Name(s)	
52. $\text{CH}_3[\text{CH}_2]_2\text{COO}[\text{CH}_2]_9\text{CH}_3$	Decyl butanoate	Decyl butyrate	66
53. $\text{CH}_3[\text{CH}_2]_2\text{COO}[\text{CH}_2]_{11}\text{CH}_3$	Dodecyl butanoate	Dodecyl butyrate	67
54. $\text{CH}_3[\text{CH}_2]_2\text{COO}[\text{CH}_2]_{13}\text{CH}_3$	Tetradecyl butanoate	Tetradecyl butyrate	68
55. $\text{CH}_3[\text{CH}_2]_2\text{COO}[\text{CH}_2]_{15}\text{CH}_3$	Hexadecyl butanoate	Hexadecyl butyrate	Cetyl butyrate 69
56. $\text{CH}_3[\text{CH}_2]_2\text{COO}[\text{CH}_2]_{17}\text{CH}_3$	Octadecyl butanoate	Octadecyl butyrate	70

ALKYL PENTANOATES (VALERATES)

57. $\text{CH}_3[\text{CH}_2]_3\text{COOCH}_3$	Methyl pentanoate	Methyl valerate	71
58. $\text{CH}_3[\text{CH}_2]_3\text{COOCH}_2\text{CH}_3$	Ethyl pentanoate	Ethyl valerate	72
59. $\text{CH}_3[\text{CH}_2]_3\text{COO}[\text{CH}_2]_2\text{CH}_3$	Propyl pentanoate	Propyl valerate	73
60. $\text{CH}_3[\text{CH}_2]_3\text{COO}[\text{CH}_2]_3\text{CH}_3$	Butyl pentanoate	Butyl valerate	74
61. $\text{CH}_3[\text{CH}_2]_3\text{COO}[\text{CH}_2]_4\text{CH}_3$	Pentyl pentanoate	Pentyl valerate	Amyl valerate 75
62. $\text{CH}_3[\text{CH}_2]_3\text{COO}[\text{CH}_2]_5\text{CH}_3$	Hexyl pentanoate	Hexyl valerate	76
63. $\text{CH}_3[\text{CH}_2]_3\text{COO}[\text{CH}_2]_6\text{CH}_3$	Heptyl pentanoate	Heptyl valerate	77
64. $\text{CH}_3[\text{CH}_2]_3\text{COO}[\text{CH}_2]_7\text{CH}_3$	Octyl pentanoate	Octyl valerate	78
65. $\text{CH}_3[\text{CH}_2]_3\text{COO}[\text{CH}_2]_8\text{CH}_3$	Nonyl pentanoate	Nonyl valerate	79
66. $\text{CH}_3[\text{CH}_2]_3\text{COO}[\text{CH}_2]_9\text{CH}_3$	Decyl pentanoate	Decyl valerate	80
67. $\text{CH}_3[\text{CH}_2]_3\text{COO}[\text{CH}_2]_{11}\text{CH}_3$	Dodecyl pentanoate	Dodecyl valerate	81
68. $\text{CH}_3[\text{CH}_2]_3\text{COO}[\text{CH}_2]_{13}\text{CH}_3$	Tetradecyl pentanoate	Tetradecyl valerate	82
69. $\text{CH}_3[\text{CH}_2]_3\text{COO}[\text{CH}_2]_{15}\text{CH}_3$	Hexadecyl pentanoate	Hexadecyl valerate	Cetyl valerate 83

ALKYL HEXANOATES (CAPROATES)

70. $\text{CH}_3[\text{CH}_2]_4\text{COOCH}_3$	Methyl hexanoate	Methyl caproate	84
71. $\text{CH}_3[\text{CH}_2]_4\text{COOCH}_2\text{CH}_3$	Ethyl hexanoate	Ethyl caproate	85
72. $\text{CH}_3[\text{CH}_2]_4\text{COO}[\text{CH}_2]_2\text{CH}_3$	Propyl hexanoate	Propyl caproate	86
73. $\text{CH}_3[\text{CH}_2]_4\text{COO}[\text{CH}_2]_3\text{CH}_3$	Butyl hexanoate	Butyl caproate	87
74. $\text{CH}_3[\text{CH}_2]_4\text{COO}[\text{CH}_2]_4\text{CH}_3$	Pentyl hexanoate	Pentyl caproate	Amyl caproate 88
75. $\text{CH}_3[\text{CH}_2]_4\text{COO}[\text{CH}_2]_5\text{CH}_3$	Hexyl hexanoate	Hexyl caproate	89
76. $\text{CH}_3[\text{CH}_2]_4\text{COO}[\text{CH}_2]_6\text{CH}_3$	Heptyl hexanoate	Heptyl caproate	90
77. $\text{CH}_3[\text{CH}_2]_4\text{COO}[\text{CH}_2]_7\text{CH}_3$	Octyl hexanoate	Octyl caproate	91
78. $\text{CH}_3[\text{CH}_2]_4\text{COO}[\text{CH}_2]_8\text{CH}_3$	Nonyl hexanoate	Nonyl caproate	92
79. $\text{CH}_3[\text{CH}_2]_4\text{COO}[\text{CH}_2]_9\text{CH}_3$	Decyl hexanoate	Decyl caproate	93
80. $\text{CH}_3[\text{CH}_2]_4\text{COO}[\text{CH}_2]_{11}\text{CH}_3$	Dodecyl hexanoate	Dodecyl caproate	94
81. $\text{CH}_3[\text{CH}_2]_4\text{COO}[\text{CH}_2]_{13}\text{CH}_3$	Tetradecyl hexanoate	Tetradecyl caproate	95
82. $\text{CH}_3[\text{CH}_2]_4\text{COO}[\text{CH}_2]_{15}\text{CH}_3$	Hexadecyl hexanoate	Hexadecyl caproate	Cetyl caproate 96

ALKYL HEPTANOATES (OENANTHATES)

83. $\text{CH}_3[\text{CH}_2]_5\text{COOCH}_3$	Methyl heptanoate	Methyl oenanthate	Methyl enanthate 97
84. $\text{CH}_3[\text{CH}_2]_5\text{COOCH}_2\text{CH}_3$	Ethyl heptanoate	Ethyl oenanthate	Ethyl enanthate 98
85. $\text{CH}_3[\text{CH}_2]_5\text{COO}[\text{CH}_2]_2\text{CH}_3$	Propyl heptanoate	Propyl oenanthate	Propyl enanthate 99
86. $\text{CH}_3[\text{CH}_2]_5\text{COO}[\text{CH}_2]_3\text{CH}_3$	Butyl heptanoate	Butyl oenanthate	Butyl enanthate 100

Formula	Name	Alternative Name(s)	
87. $\text{CH}_3[\text{CH}_2]_5\text{COO}[\text{CH}_2]_4\text{CH}_3$	Pentyl heptanoate	Pentyl oenanthate	101
		Amyl oenanthate Pentyl enanthate Amyl enanthate	
88. $\text{CH}_3[\text{CH}_2]_5\text{COO}[\text{CH}_2]_5\text{CH}_3$	Hexyl heptanoate	Hexyl oenanthate	102
89. $\text{CH}_3[\text{CH}_2]_5\text{COO}[\text{CH}_2]_6\text{CH}_3$	Heptyl heptanoate	Heptyl oenanthate	103
90. $\text{CH}_3[\text{CH}_2]_5\text{COO}[\text{CH}_2]_7\text{CH}_3$	Octyl heptanoate	Octyl oenanthate	104
91. $\text{CH}_3[\text{CH}_2]_5\text{COO}[\text{CH}_2]_8\text{CH}_3$	Nonyl heptanoate	Nonyl oenanthate	105
92. $\text{CH}_3[\text{CH}_2]_5\text{COO}[\text{CH}_2]_9\text{CH}_3$	Decyl heptanoate	Decyl oenanthate	106
93. $\text{CH}_3[\text{CH}_2]_5\text{COO}[\text{CH}_2]_{11}\text{CH}_3$	Dodecyl heptanoate	Dodecyl oenanthate	107
94. $\text{CH}_3[\text{CH}_2]_5\text{COO}[\text{CH}_2]_{13}\text{CH}_3$	Tetradecyl heptanoate	Tetradecyl oenanthate	108

ALKYL OCTANOATES (CAPRYLATES)

95. $\text{CH}_3[\text{CH}_2]_6\text{COOCH}_3$	Methyl octanoate	Methyl caprylate	109
96. $\text{CH}_3[\text{CH}_2]_6\text{COOCH}_2\text{CH}_3$	Ethyl octanoate	Ethyl caprylate	110
97. $\text{CH}_3[\text{CH}_2]_6\text{COO}[\text{CH}_2]_2\text{CH}_3$	Propyl octanoate	Propyl caprylate	111
98. $\text{CH}_3[\text{CH}_2]_6\text{COO}[\text{CH}_2]_3\text{CH}_3$	Butyl octanoate	Butyl caprylate	112
99. $\text{CH}_3[\text{CH}_2]_6\text{COO}[\text{CH}_2]_4\text{CH}_3$	Pentyl octanoate	Pentyl caprylate	113
		Amyl caprylate	
100. $\text{CH}_3[\text{CH}_2]_6\text{COO}[\text{CH}_2]_5\text{CH}_3$	Hexyl octanoate	Hexyl caprylate	114
101. $\text{CH}_3[\text{CH}_2]_6\text{COO}[\text{CH}_2]_6\text{CH}_3$	Heptyl octanoate	Heptyl caprylate	115
102. $\text{CH}_3[\text{CH}_2]_6\text{COO}[\text{CH}_2]_7\text{CH}_3$	Octyl octanoate	Octyl caprylate	116
103. $\text{CH}_3[\text{CH}_2]_6\text{COO}[\text{CH}_2]_8\text{CH}_3$	Nonyl octanoate	Nonyl caprylate	117
104. $\text{CH}_3[\text{CH}_2]_6\text{COO}[\text{CH}_2]_9\text{CH}_3$	Decyl octanoate	Decyl caprylate	118
105. $\text{CH}_3[\text{CH}_2]_6\text{COO}[\text{CH}_2]_{11}\text{CH}_3$	Dodecyl octanoate	Dodecyl caprylate	119
106. $\text{CH}_3[\text{CH}_2]_6\text{COO}[\text{CH}_2]_{13}\text{CH}_3$	Tetradecyl octanoate	Tetradecyl caprylate	120
107. $\text{CH}_3[\text{CH}_2]_6\text{COO}[\text{CH}_2]_{15}\text{CH}_3$	Hexadecyl octanoate	Hexadecyl caprylate	121
		Cetyl caprylate	

ALKYL DECANOATES (CAPRATES)

108. $\text{CH}_3[\text{CH}_2]_8\text{COOCH}_3$	Methyl decanoate	Methyl caprate	122
109. $\text{CH}_3[\text{CH}_2]_8\text{COOCH}_2\text{CH}_3$	Ethyl decanoate	Ethyl caprate	123
110. $\text{CH}_3[\text{CH}_2]_8\text{COO}[\text{CH}_2]_2\text{CH}_3$	Propyl decanoate	Propyl caprate	124
111. $\text{CH}_3[\text{CH}_2]_8\text{COO}[\text{CH}_2]_3\text{CH}_3$	Butyl decanoate	Butyl caprate	125
112. $\text{CH}_3[\text{CH}_2]_8\text{COO}[\text{CH}_2]_4\text{CH}_3$	Pentyl decanoate	Pentyl caprate	126
		Amyl caprate	
113. $\text{CH}_3[\text{CH}_2]_8\text{COO}[\text{CH}_2]_5\text{CH}_3$	Hexyl decanoate	Hexyl caprate	127
114. $\text{CH}_3[\text{CH}_2]_8\text{COO}[\text{CH}_2]_6\text{CH}_3$	Heptyl decanoate	Heptyl caprate	128
115. $\text{CH}_3[\text{CH}_2]_8\text{COO}[\text{CH}_2]_7\text{CH}_3$	Octyl decanoate	Octyl caprate	129
116. $\text{CH}_3[\text{CH}_2]_8\text{COO}[\text{CH}_2]_8\text{CH}_3$	Nonyl decanoate	Nonyl caprate	130
117. $\text{CH}_3[\text{CH}_2]_8\text{COO}[\text{CH}_2]_9\text{CH}_3$	Decyl decanoate	Decyl caprate	131
118. $\text{CH}_3[\text{CH}_2]_8\text{COO}[\text{CH}_2]_{11}\text{CH}_3$	Dodecyl decanoate	Dodecyl caprate	132

Formula

Name

Alternative Name(s)

ALKYL DODECANOATES (LAURATES)

119. $\text{CH}_3[\text{CH}_2]_{10}\text{COOCH}_3$	Methyl dodecanoate	Methyl laurate	133
120. $\text{CH}_3[\text{CH}_2]_{10}\text{COOCH}_2\text{CH}_3$	Ethyl dodecanoate	Ethyl laurate	134
121. $\text{CH}_3[\text{CH}_2]_{10}\text{COO}[\text{CH}_2]_2\text{CH}_3$	Propyl dodecanoate	Propyl laurate	135
122. $\text{CH}_3[\text{CH}_2]_{10}\text{COO}[\text{CH}_2]_3\text{CH}_3$	Butyl dodecanoate	Butyl laurate	136
123. $\text{CH}_3[\text{CH}_2]_{10}\text{COO}[\text{CH}_2]_4\text{CH}_3$	Pentyl dodecanoate	Pentyl laurate	137
124. $\text{CH}_3[\text{CH}_2]_{10}\text{COO}[\text{CH}_2]_5\text{CH}_3$	Hexyl dodecanoate	Hexyl laurate	138
125. $\text{CH}_3[\text{CH}_2]_{10}\text{COO}[\text{CH}_2]_6\text{CH}_3$	Heptyl dodecanoate	Heptyl laurate	139
126. $\text{CH}_3[\text{CH}_2]_{10}\text{COO}[\text{CH}_2]_7\text{CH}_3$	Octyl dodecanoate	Octyl laurate	140
127. $\text{CH}_3[\text{CH}_2]_{10}\text{COO}[\text{CH}_2]_8\text{CH}_3$	Nonyl dodecanoate	Nonyl laurate	141
128. $\text{CH}_3[\text{CH}_2]_{10}\text{COO}[\text{CH}_2]_9\text{CH}_3$	Decyl dodecanoate	Decyl laurate	142

Amyl laurate

ALKYL TETRADECANOATES (MYRISTATES)

129. $\text{CH}_3[\text{CH}_2]_{12}\text{COOCH}_3$	Methyl tetradecanoate	Methyl myristate	143
130. $\text{CH}_3[\text{CH}_2]_{12}\text{COOCH}_2\text{CH}_3$	Ethyl tetradecanoate	Ethyl myristate	144
131. $\text{CH}_3[\text{CH}_2]_{12}\text{COO}[\text{CH}_2]_2\text{CH}_3$	Propyl tetradecanoate	Propyl myristate	145
132. $\text{CH}_3[\text{CH}_2]_{12}\text{COO}[\text{CH}_2]_3\text{CH}_3$	Butyl tetradecanoate	Butyl myristate	146
133. $\text{CH}_3[\text{CH}_2]_{12}\text{COO}[\text{CH}_2]_4\text{CH}_3$	Pentyl tetradecanoate	Pentyl myristate	147
134. $\text{CH}_3[\text{CH}_2]_{12}\text{COO}[\text{CH}_2]_5\text{CH}_3$	Hexyl tetradecanoate	Hexyl myristate	148
135. $\text{CH}_3[\text{CH}_2]_{12}\text{COO}[\text{CH}_2]_6\text{CH}_3$	Heptyl tetradecanoate	Heptyl myristate	149
136. $\text{CH}_3[\text{CH}_2]_{12}\text{COO}[\text{CH}_2]_7\text{CH}_3$	Octyl tetradecanoate	Octyl myristate	150

Amyl myristate

ALKYL HEXADECANOATES (PALMITATES)

137. $\text{CH}_3[\text{CH}_2]_{14}\text{COOCH}_3$	Methyl hexadecanoate	Methyl palmitate	151
138. $\text{CH}_3[\text{CH}_2]_{14}\text{COOCH}_2\text{CH}_3$	Ethyl hexadecanoate	Ethyl palmitate	152
139. $\text{CH}_3[\text{CH}_2]_{14}\text{COO}[\text{CH}_2]_2\text{CH}_3$	Propyl hexadecanoate	Propyl palmitate	153
140. $\text{CH}_3[\text{CH}_2]_{14}\text{COO}[\text{CH}_2]_3\text{CH}_3$	Butyl hexadecanoate	Butyl palmitate	154
141. $\text{CH}_3[\text{CH}_2]_{14}\text{COO}[\text{CH}_2]_4\text{CH}_3$	Pentyl hexadecanoate	Pentyl palmitate	155
142. $\text{CH}_3[\text{CH}_2]_{14}\text{COO}[\text{CH}_2]_5\text{CH}_3$	Hexyl hexadecanoate	Hexyl palmitate	156

Amyl palmitate

ALKYL OCTADECANOATES (STEARATES)

143. $\text{CH}_3[\text{CH}_2]_{16}\text{COOCH}_3$	Methyl octadecanoate	Methyl stearate	157
144. $\text{CH}_3[\text{CH}_2]_{16}\text{COOCH}_2\text{CH}_3$	Ethyl octadecanoate	Ethyl stearate	158
145. $\text{CH}_3[\text{CH}_2]_{16}\text{COO}[\text{CH}_2]_2\text{CH}_3$	Propyl octadecanoate	Propyl stearate	159
146. $\text{CH}_3[\text{CH}_2]_{16}\text{COO}[\text{CH}_2]_3\text{CH}_3$	Butyl octadecanoate	Butyl stearate	160

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THERMAL CONDUCTIVITY OF LIQUIDS: STRAIGHT CHAIN ALIPHATIC ESTERS

1. INTRODUCTION

This Item presents values of thermal conductivity at saturation pressure, in tabular form, for liquid straight chain aliphatic esters.

The data on which these recommended values of thermal conductivity are based are the most reliable available and the temperature range covered is from the melting temperature to approximately 0.9 of the critical temperature. Quantities are expressed in SI units and conversion factors to other units are provided in Section 3.

Section 4 describes the procedure used to obtain the values of thermal conductivity presented and indicates the effect of pressure. Section 5 gives an explanation of the Tables and indicates the uncertainties in the values presented in them.

References to sources of supplementary information are given in Section 6. The data sources for each particular compound are listed on the appropriate data sheet.

2. NOTATION AND UNITS

The SI unit of thermal conductivity is the watt per metre kelvin (W/m K). A convenient submultiple SI unit for the range of thermal conductivity in this Item is the milliwatt per metre kelvin (mW/m K); hence that is the unit adopted here.

A	constant for each liquid in Equation (4.2)	mW/m K
A'	constant for each liquid in Equation (4.1)	mW/m K
B'	non-dimensional constant for each liquid in Equation (4.1)	—
B, C, D	non-dimensional constants for each liquid in Equation (4.2)	—
p	pressure	N/m ² (Pa)
T	kelvin temperature	K
t	Celsius temperature, $T - 273.15$	°C
λ	thermal conductivity	mW/m K

Subscripts

c	denotes value at the critical point
p	denotes value at pressure p
r	denotes reduced quantity, <i>e.g.</i> $T_r = T/T_c$.

3. CONVERSION FACTORS

$$\begin{aligned}
 1 \text{ mW/m K} &= 0.8598 \times 10^{-3} \text{ kcal/m h } ^\circ\text{C}^* \\
 &= 2.3885 \times 10^{-6} \text{ cal/cm s } ^\circ\text{C}^* \\
 &= 0.5778 \times 10^{-3} \text{ Chu/ft h } ^\circ\text{C}^* \\
 &= 0.5778 \times 10^{-3} \text{ Btu/ft h } ^\circ\text{F}^* \\
 &= 6.9335 \times 10^{-3} \text{ Btu in/ft}^2 \text{ h } ^\circ\text{F}^* \\
 \\
 10^5 \text{ N/m}^2 &= 1 \text{ bar} \\
 &= 14.5038 \text{ lbf/in}^2 \\
 &= 1.0197 \text{ kgf/cm}^2 \\
 &= 0.9869 \text{ atm} \\
 &= 750.062 \text{ mmHg.}
 \end{aligned}$$

* The values used for the calorie and British Thermal Unit are International Table values.

4. THERMAL CONDUCTIVITY

4.1 Thermal Conductivity at Saturation Pressure

In Reference 2 Riedel showed that the experimental data for the thermal conductivity of normal (that is unassociated) liquids along the saturation line could be represented by the equation:

$$\lambda = A'[1 + (20/3)(1 - T_r)^{2/3}].$$

For the liquids considered in this Item a better representation of the data is obtained, over a wide temperature range, from the modified equation which was used in some earlier ESDU Items:

$$\lambda = A'[1 + B'(1 - T_r)^{2/3}]. \quad (4.1)$$

The range of applicability of Equation (4.1) is limited for most compounds; recent data from several sources show that there may be marked deviations in the regions of the triple point and the critical point from extrapolations of Equation (4.1) fitted in the intermediate region.

For the liquids considered in this Item a good representation of the data* between the melting temperature and $T_r = 0.9$ is obtained from the equation:

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]. \quad (4.2)$$

Measurements of thermal conductivity have been made for relatively few liquids at $T_r > 0.9$ and so, because of the uncertain variation of thermal conductivity in the critical region, data are presented only for temperatures up to $T_r = 0.9$. The equation extrapolates in a physically realistic manner to within a few kelvin of the critical point.

The critical temperatures for these compounds have either been taken from ESDU 96016 (Reference 9) or estimated from correlations of ESDU values with chemical structure. In this Item, the critical temperatures should be regarded as correlating parameters only and should not be taken as a source of accurate values.

* Experimental data at temperatures below the normal boiling temperature, t_b are often at 1 atm pressure. As indicated in Section 4.2 the difference between values of λ at 1 atm pressure and at saturation pressure below t_b is not significant.

The derived values of A , B , C and D given in Table 7.1 are a correlated set of values giving the best fit to the experimental data, not only as individual compounds but also as members of their chemical series. This method of correlating data for a series of compounds has been described in References 5 and 6. For the straight chain aliphatic esters in this Item, it was found that C and D are directly related to B^* , as was observed for other non-hydrogen-bonded compounds such as the alkanes. Correlated values of the constants A , B , C and D were used to estimate constants for the majority of the liquids, for which no experimental data exist. Using these values with the values of T_c given in Table 7.1, values of λ in mW/m K have been calculated for each compound from Equation (4.2) and are presented in the data sheets.

4.2 Effect of Pressure

At temperatures up to the normal boiling point, the effect of pressure from the saturation pressure to $50 \times 10^5 \text{ N/m}^2$ (up to 50 atm) is to increase the thermal conductivity by approximately 1 per cent and, for most practical purposes, values at saturation pressure may be taken as equal to those at atmospheric pressure.

Reference 1 gives measurements of thermal conductivity for a number of liquids up to $12\,000 \times 10^5 \text{ N/m}^2$ ($\approx 12\,000 \text{ atm}$) at 30°C and 75°C . A generalised correlation of these results is given in Reference 3, but a knowledge of the critical pressure of the substance is required for its use.

For pressures up to $500 \times 10^5 \text{ N/m}^2$ ($\approx 500 \text{ atm}$) between the melting temperature and the normal boiling point a very approximate relationship:

$$\lambda_p/\lambda \approx 1 + 0.2p \times 10^{-8}, \quad (4.3)$$

may be used where λ_p is the thermal conductivity at pressure p and λ is the thermal conductivity at a pressure of 10^5 N/m^2 ($\approx 1 \text{ atm}$), both at the same temperature.

5. EXPLANATION OF TABLES

The constants of Equation (4.2) are given in Table 7.1 and on the data sheets. Values of the thermal conductivity are given in the data sheets at 10 kelvin intervals in K and $^\circ\text{C}$, from within 10 kelvin of the melting temperature, or an appropriate starting temperature where the melting temperature is unknown, to a temperature corresponding with $T_r \approx 0.9$.

The sources are given in the data sheets and extrapolated values are indicated in parentheses.

For uniformity and ease of interpolation the data are presented and can be read to more significant digits than is warranted by their estimated accuracy.

The experimental data from the most reliable individual sources have a repeatability of about ± 1 per cent although differences in technique used by different workers (and possibly also in the purity of samples) can increase the uncertainty in the absolute values to about ± 2 per cent. However, such reliable data are not available for all the compounds considered, nor over the whole temperature range covered. Although it is considered that the correlation procedures adopted keep the errors in the values presented to a minimum, the user should in general allow for an uncertainty of ± 5 per cent unless the value in the data sheet is truncated to a whole number. Where whole numbers are given the uncertainty increases to ± 10 per cent.

Some fluids have poor thermal stability coupled with a high critical temperature. Values have been tabulated for all fluids up to $T_r \approx 0.9$ but many of these fluids will decompose at elevated temperatures. As most compounds will decompose rapidly at temperatures above about 300°C , uncertainties of greater than ± 10 per cent may occur for temperatures $\geq 573 \text{ K}$.

* $C = 1 - 3B$ and $D = 3B$.

6. REFERENCES

The references given are recommended sources of information supplementary to that in this Item.

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9. ESDU Vapour pressures and critical points of liquids: Esters of monobasic acids Part 1. Straight chain alkyl alkanoates. Data Item 96016, ESDU International plc, London, UK, 1996.

7. TABLES

TABLE 7.1 Constants for Equation (4.2)

Compound	T_c K	A mW/m K	B	C	D	Range of Applicability °C	
1. Methyl methanoate	487.15	92.13	1.58	-3.74	4.74	-100	to 170
2. Ethyl methanoate	508.45	76.13	1.43	-3.29	4.29	-80	to 190
3. Propyl methanoate	538.	71.00	1.30	-2.90	3.90	-90	to 220
4. Butyl methanoate	564.	68.49	1.20	-2.60	3.60	-90	to 240
5. Pentyl methanoate	589.	66.96	1.10	-2.30	3.30	-70	to 270
6. Hexyl methanoate	611.	65.58	1.03	-2.09	3.09	-60	to 280
7. Heptyl methanoate	631.	65.70	0.97	-1.91	2.91	-50	to 300
8. Octyl methanoate	649.	65.59	0.93	-1.79	2.79	-40	to 320
9. Nonyl methanoate	670.15	65.93	0.90	-1.70	2.70	-30	to 340
10. Decyl methanoate	687.15	66.70	0.88	-1.64	2.64	-20	to 350
11. Dodecyl methanoate	718.15	66.93	0.86	-1.58	2.58	0	to 380
12. Tetradecyl methanoate	745.15	67.92	0.87	-1.61	2.61	10	to 410
13. Hexadecyl methanoate	770.15	68.79	0.89	-1.67	2.67	20	to 430
14. Octadecyl methanoate	791.15	69.12	0.93	-1.79	2.79	30	to 450
15. Methyl ethanoate	506.55	76.13	1.43	-3.29	4.29	-100	to 190
16. Ethyl ethanoate	523.3	70.49	1.30	-2.90	3.90	-80	to 210
17. Propyl ethanoate	549.73	67.44	1.20	-2.60	3.60	-100	to 230
18. Butyl ethanoate	578.	65.89	1.10	-2.30	3.30	-80	to 260
19. Pentyl ethanoate	601.	65.04	1.03	-2.09	3.09	-70	to 280
20. Hexyl ethanoate	623.	65.15	0.97	-1.91	2.91	-60	to 300
21. Heptyl ethanoate	643.	65.59	0.93	-1.79	2.79	-50	to 310
22. Octyl ethanoate	661.	65.38	0.90	-1.70	2.70	-40	to 330
23. Nonyl ethanoate	679.15	65.05	0.88	-1.64	2.64	-30	to 350
24. Decyl ethanoate	695.	65.71	0.87	-1.61	2.61	-20	to 360
25. Dodecyl ethanoate	725.15	67.48	0.86	-1.58	2.58	0	to 390
26. Tetradecyl ethanoate	752.15	67.80	0.88	-1.64	2.64	10	to 410
27. Hexadecyl ethanoate	776.15	68.56	0.91	-1.73	2.73	20	to 430
28. Octadecyl ethanoate	797.15	68.64	0.95	-1.85	2.85	30	to 450
29. Methyl propanoate	530.55	71.00	1.30	-2.90	3.90	-90	to 210
30. Ethyl propanoate	546.05	67.44	1.20	-2.60	3.60	-80	to 230
31. Propyl propanoate	573.	65.89	1.10	-2.30	3.30	-80	to 250
32. Butyl propanoate	598.	65.58	1.03	-2.09	3.09	-90	to 270
33. Pentyl propanoate	619.	65.70	0.97	-1.91	2.91	-70	to 290
34. Hexyl propanoate	640.	65.59	0.93	-1.79	2.79	-70	to 310
35. Heptyl propanoate	657.	63.73	0.90	-1.70	2.70	-50	to 330
36. Octyl propanoate	675.	64.50	0.88	-1.64	2.64	-50	to 340
37. Nonyl propanoate	693.15	65.16	0.87	-1.61	2.61	-30	to 360
38. Decyl propanoate	709.15	65.27	0.86	-1.58	2.58	-30	to 370
39. Dodecyl propanoate	737.15	66.26	0.87	-1.61	2.61	-10	to 400
40. Tetradecyl propanoate	762.15	66.59	0.89	-1.67	2.67	0	to 420
41. Hexadecyl propanoate	784.15	67.23	0.93	-1.79	2.79	20	to 440
42. Octadecyl propanoate	805.15	68.53	0.96	-1.88	2.88	30	to 460

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TABLE 7.1 Constants for Equation (4.2) (Continued)

Compound	T_c K	A mW/m K	B	C	D	Range of Applicability °C	
43. Methyl butanoate	554.45	68.49	1.20	-2.60	3.60	-90	to 230
44. Ethyl butanoate	569.	65.89	1.10	-2.30	3.30	-100	to 250
45. Propyl butanoate	593.	65.04	1.03	-2.09	3.09	-100	to 270
46. Butyl butanoate	614.	65.15	0.97	-1.91	2.91	-90	to 290
47. Pentyl butanoate	636.	65.59	0.93	-1.79	2.79	-70	to 310
48. Hexyl butanoate	655.	63.18	0.90	-1.70	2.70	-80	to 320
49. Heptyl butanoate	672.	63.94	0.88	-1.64	2.64	-60	to 340
50. Octyl butanoate	689.	64.60	0.87	-1.61	2.61	-60	to 360
51. Nonyl butanoate	707.15	64.72	0.86	-1.58	2.58	-40	to 370
52. Decyl butanoate	721.15	65.82	0.86	-1.58	2.58	-30	to 380
53. Dodecyl butanoate	748.15	66.15	0.88	-1.64	2.64	-20	to 410
54. Tetradecyl butanoate	772.15	66.36	0.91	-1.73	2.73	0	to 430
55. Hexadecyl butanoate	794.15	66.57	0.94	-1.82	2.82	20	to 450
56. Octadecyl butanoate	813.15	66.02	0.99	-1.97	2.97	30	to 470
57. Methyl pentanoate	579.	66.96	1.10	-2.30	3.30	-70	to 260
58. Ethyl pentanoate	595.	65.04	1.03	-2.09	3.09	-80	to 270
59. Propyl pentanoate	616.	65.15	0.97	-1.91	2.91	-70	to 290
60. Butyl pentanoate	634.	65.59	0.93	-1.79	2.79	-80	to 310
61. Pentyl pentanoate	652.	63.18	0.90	-1.70	2.70	-70	to 320
62. Hexyl pentanoate	672.	62.84	0.88	-1.64	2.64	-60	to 340
63. Heptyl pentanoate	689.	64.05	0.87	-1.61	2.61	-50	to 360
64. Octyl pentanoate	705.	64.16	0.86	-1.58	2.58	-40	to 370
65. Nonyl pentanoate	720.15	65.27	0.86	-1.58	2.58	-30	to 380
66. Decyl pentanoate	734.15	65.71	0.87	-1.61	2.61	-20	to 400
67. Dodecyl pentanoate	759.15	65.49	0.89	-1.67	2.67	-10	to 420
68. Tetradecyl pentanoate	782.15	65.59	0.93	-1.79	2.79	10	to 440
69. Hexadecyl pentanoate	803.15	65.81	0.96	-1.88	2.88	20	to 460
70. Methyl hexanoate	604.	65.58	1.03	-2.09	3.09	-70	to 280
71. Ethyl hexanoate	617.	65.70	0.97	-1.91	2.91	-70	to 290
72. Propyl hexanoate	636.	65.59	0.93	-1.79	2.79	-70	to 310
73. Butyl hexanoate	653.	64.28	0.90	-1.70	2.70	-70	to 320
74. Pentyl hexanoate	672.	64.50	0.88	-1.64	2.64	-60	to 340
75. Hexyl hexanoate	689.15	64.05	0.87	-1.61	2.61	-50	to 360
76. Heptyl hexanoate	705.15	63.61	0.86	-1.58	2.58	-40	to 370
77. Octyl hexanoate	719.15	65.27	0.86	-1.58	2.58	-40	to 380
78. Nonyl hexanoate	733.15	65.71	0.87	-1.61	2.61	-20	to 390
79. Decyl hexanoate	746.15	65.60	0.88	-1.64	2.64	-20	to 410
80. Dodecyl hexanoate	771.15	65.27	0.91	-1.73	2.73	0	to 430
81. Tetradecyl hexanoate	793.15	65.48	0.94	-1.82	2.82	10	to 450
82. Hexadecyl hexanoate	812.15	64.94	0.99	-1.97	2.97	20	to 470

TABLE 7.1 Constants for Equation (4.2) (Continued)

Compound	T_c K	A mW/m K	B	C	D	Range of Applicability °C	
83. Methyl heptanoate	624.15	65.70	0.97	-1.91	2.91	-60	to 300
84. Ethyl heptanoate	638.15	65.59	0.93	-1.79	2.79	-60	to 310
85. Propyl heptanoate	655.15	64.83	0.90	-1.70	2.70	-60	to 320
86. Butyl heptanoate	672.15	64.50	0.88	-1.64	2.64	-60	to 340
87. Pentyl heptanoate	689.15	64.61	0.87	-1.61	2.61	-50	to 360
88. Hexyl heptanoate	705.15	63.61	0.86	-1.58	2.58	-50	to 370
89. Heptyl heptanoate	719.15	65.27	0.86	-1.58	2.58	-40	to 380
90. Octyl heptanoate	733.15	65.71	0.87	-1.61	2.61	-30	to 390
91. Nonyl heptanoate	746.15	65.60	0.88	-1.64	2.64	-20	to 410
92. Decyl heptanoate	759.15	65.49	0.89	-1.67	2.67	-10	to 420
93. Dodecyl heptanoate	782.15	65.05	0.93	-1.79	2.79	0	to 440
94. Tetradecyl heptanoate	803.15	65.26	0.96	-1.88	2.88	10	to 460
95. Methyl octanoate	644.	65.59	0.93	-1.79	2.79	-40	to 310
96. Ethyl octanoate	656.	65.38	0.90	-1.70	2.70	-40	to 330
97. Propyl octanoate	673.	65.05	0.88	-1.64	2.64	-40	to 340
98. Butyl octanoate	689.	65.16	0.87	-1.61	2.61	-40	to 360
99. Pentyl octanoate	704.	64.72	0.86	-1.58	2.58	-30	to 370
100. Hexyl octanoate	719.15	65.27	0.86	-1.58	2.58	-30	to 380
101. Heptyl octanoate	733.15	65.71	0.87	-1.61	2.61	-20	to 390
102. Octyl octanoate	746.15	65.60	0.88	-1.64	2.64	-20	to 410
103. Nonyl octanoate	759.15	65.49	0.89	-1.67	2.67	-10	to 420
104. Decyl octanoate	771.15	65.27	0.91	-1.73	2.73	0	to 430
105. Dodecyl octanoate	793.15	64.94	0.94	-1.82	2.82	10	to 450
106. Tetradecyl octanoate	812.15	64.94	0.99	-1.97	2.97	20	to 470
107. Hexadecyl octanoate	829.15	65.36	1.05	-2.15	3.15	30	to 480
108. Methyl decanoate	681.	66.15	0.88	-1.64	2.64	-20	to 350
109. Ethyl decanoate	691.	65.71	0.87	-1.61	2.61	-20	to 360
110. Propyl decanoate	704.	65.82	0.86	-1.58	2.58	-20	to 370
111. Butyl decanoate	719.15	65.27	0.86	-1.58	2.58	-30	to 380
112. Pentyl decanoate	733.15	65.71	0.87	-1.61	2.61	-20	to 390
113. Hexyl decanoate	746.15	65.60	0.88	-1.64	2.64	-10	to 410
114. Heptyl decanoate	759.15	65.49	0.89	-1.67	2.67	-10	to 420
115. Octyl decanoate	771.15	65.27	0.91	-1.73	2.73	0	to 430
116. Nonyl decanoate	782.15	65.05	0.93	-1.79	2.79	0	to 440
117. Decyl decanoate	793.15	65.48	0.94	-1.82	2.82	10	to 450
118. Dodecyl decanoate	812.15	65.48	0.99	-1.97	2.97	10	to 470

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TABLE 7.1 Constants for Equation (4.2) (Continued)

Compound	T_c K	A mW/m K	B	C	D	Range of Applicability °C
119. Methyl dodecanoate	712.	66.93	0.86	-1.58	2.58	0 to 380
120. Ethyl dodecanoate	720.	66.38	0.86	-1.58	2.58	0 to 380
121. Propyl dodecanoate	732.	65.71	0.87	-1.61	2.61	-10 to 390
122. Butyl dodecanoate	746.15	65.60	0.88	-1.64	2.64	-10 to 410
123. Pentyl dodecanoate	759.15	65.49	0.89	-1.67	2.67	0 to 420
124. Hexyl dodecanoate	771.15	65.27	0.91	-1.73	2.73	0 to 430
125. Heptyl dodecanoate	782.15	65.05	0.93	-1.79	2.79	0 to 440
126. Octyl dodecanoate	793.15	65.26	0.94	-1.82	2.82	10 to 450
127. Nonyl dodecanoate	803.15	65.26	0.96	-1.88	2.88	10 to 460
128. Decyl dodecanoate	812.15	65.48	0.99	-1.97	2.97	20 to 470
129. Methyl tetradecanoate	739.	67.92	0.87	-1.61	2.61	20 to 400
130. Ethyl tetradecanoate	746.	67.25	0.88	-1.64	2.64	10 to 410
131. Propyl tetradecanoate	755.	66.59	0.89	-1.67	2.67	10 to 410
132. Butyl tetradecanoate	771.15	65.81	0.91	-1.73	2.73	0 to 430
133. Pentyl tetradecanoate	782.15	65.59	0.93	-1.79	2.79	10 to 440
134. Hexyl tetradecanoate	793.15	65.48	0.94	-1.82	2.82	10 to 450
135. Heptyl tetradecanoate	803.15	65.26	0.96	-1.88	2.88	10 to 460
136. Octyl tetradecanoate	812.15	64.94	0.99	-1.97	2.97	20 to 470
137. Methyl hexadecanoate	762.	68.79	0.89	-1.67	2.67	30 to 420
138. Ethyl hexadecanoate	769.	68.01	0.91	-1.73	2.73	20 to 430
139. Propyl hexadecanoate	776.	65.59	0.93	-1.79	2.79	20 to 430
140. Butyl hexadecanoate	793.15	65.48	0.94	-1.82	2.82	20 to 450
141. Pentyl hexadecanoate	803.15	65.26	0.96	-1.88	2.88	20 to 460
142. Hexyl hexadecanoate	812.15	64.94	0.99	-1.97	2.97	20 to 470
143. Methyl octadecanoate	783.	69.42	0.93	-1.79	2.79	40 to 440
144. Ethyl octadecanoate	788.	68.21	0.94	-1.82	2.82	30 to 440
145. Propyl octadecanoate	796.	66.90	0.96	-1.88	2.88	30 to 450
146. Butyl octadecanoate	812.15	66.56	0.99	-1.97	2.97	30 to 470

HCOOCH₃ METHYL METHANOATE (METHYL FORMATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 487.15 \text{ K}$$

$$A = 92.13, \quad B = 1.58, \quad C = -3.74, \quad D = 4.74$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
170	(244.)	310	179.3	-100	(242.)	40	177.9
180	(238.9)	320	(175.0)	-90	(237.4)	50	(173.7)
190	(234.1)	330	(170.8)	-80	(232.6)	60	(169.4)
200	(229.4)	340	(166.6)	-70	(227.9)	70	(165.3)
210	(224.6)	350	(162.5)	-60	(223.1)	80	(161.2)
220	(219.9)	360	(158.4)	-50	(218.4)	90	(157.1)
230	(215.2)	370	(154.4)	-40	(213.8)	100	(153.2)
240	(210.6)	380	(150.)	-30	(209.1)	110	(149.)
250	(206.0)	390	(147.)	-20	(204.6)	120	(145.)
260	(201.4)	400	(143.)	-10	(200.0)	130	(142.)
270	(196.9)	410	(139.)	0	195.5	140	(138.)
280	192.4	420	(136.)	10	191.0	150	(134.)
290	188.0	430	(132.)	20	186.6	160	(131.)
300	183.6	440	(129.)	30	182.3	170	(128.)

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HCOOCH₂CH₃ ETHYL METHANOATE (ETHYL FORMATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$T_r = T/T_c$, T = temperature (K)

$T_c = 508.45$ K

$A = 76.13$, $B = 1.43$, $C = -3.29$, $D = 4.29$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
190	(190.5)	330	142.9	-80	(189.4)	60	141.9
200	(186.9)	340	139.7	-70	(185.8)	70	138.7
210	(183.4)	350	136.6	-60	(182.3)	80	135.6
220	(179.9)	360	133.5	-50	(178.8)	90	132.5
230	176.4	370	130.4	-40	175.3	100	129.4
240	172.9	380	127.4	-30	171.9	110	126.4
250	169.5	390	124.4	-20	168.4	120	123.4
260	166.1	400	121.4	-10	165.0	130	120.5
270	162.7	410	118.5	0	161.6	140	117.6
280	159.3	420	115.7	10	158.3	150	114.8
290	156.0	430	112.9	20	154.9	160	112.0
300	152.7	440	110.1	30	151.6	170	109.2
310	149.4	450	107.4	40	148.4	180	106.5
320	146.1	460	104.7	50	145.1	190	103.9

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HCOO[CH₂]₂CH₃ PROPYL METHANOATE (PROPYL FORMATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 538. \text{ K}$$

$$A = 71.00, \quad B = 1.30, \quad C = -2.90, \quad D = 3.90$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
180	(178.9)	340	133.3	-90	(178.0)	70	132.5
190	(175.9)	350	(130.6)	-80	(175.0)	80	(129.8)
200	(173.0)	360	(128.0)	-70	(172.1)	90	(127.1)
210	(170.0)	370	(125.3)	-60	(169.1)	100	(124.5)
220	(167.1)	380	(122.7)	-50	(166.2)	110	(121.9)
230	(164.2)	390	(120.1)	-40	(163.3)	120	(119.3)
240	(161.3)	400	(117.5)	-30	(160.4)	130	(116.7)
250	(158.4)	410	(115.0)	-20	(157.5)	140	(114.2)
260	(155.6)	420	(112.5)	-10	(154.7)	150	(111.7)
270	(152.7)	430	(110.0)	0	(151.8)	160	(109.3)
280	149.9	440	(107.6)	10	149.0	170	(106.8)
290	147.1	450	(105.2)	20	146.2	180	(104.4)
300	144.3	460	(102.8)	30	143.4	190	(102.1)
310	141.5	470	(100.5)	40	140.6	200	(99.7)
320	138.8	480	(98.1)	50	137.9	210	(97.4)
330	136.0	490	(95.8)	60	135.2	220	(95.1)

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Inzh. Fiz. Zh., Vol. 46, No. 5, pp. 773-776, 1984.

HCOO[CH₂]₃CH₃ BUTYL METHANOATE (BUTYL FORMATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 564. \text{ K}$$

$$A = 68.49, \quad B = 1.20, \quad C = -2.60, \quad D = 3.60$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
180	(170.9)	350	128.2	-90	(170.0)	80	127.5
190	(168.2)	360	125.8	-80	(167.4)	90	125.1
200	(165.7)	370	123.5	-70	(164.8)	100	122.7
210	(163.1)	380	(121.1)	-60	(162.3)	110	(120.4)
220	(160.5)	390	(118.8)	-50	(159.7)	120	(118.1)
230	(157.9)	400	(116.5)	-40	(157.1)	130	(115.8)
240	(155.4)	410	(114.2)	-30	(154.6)	140	(113.5)
250	(152.9)	420	(111.9)	-20	(152.1)	150	(111.2)
260	(150.3)	430	(109.7)	-10	(149.5)	160	(109.0)
270	(147.8)	440	(107.4)	0	(147.0)	170	(106.7)
280	145.3	450	(105.2)	10	144.5	180	(104.5)
290	142.8	460	(103.0)	20	142.1	190	(102.4)
300	140.4	470	(100.9)	30	139.6	200	(100.2)
310	137.9	480	(98.7)	40	137.1	210	(98.1)
320	135.5	490	(96.6)	50	134.7	220	(96.0)
330	133.0	500	(94.5)	60	132.3	230	(93.9)
340	130.6	510	(92.4)	70	129.9	240	(91.8)

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HCOO[CH₂]₄CH₃ PENTYL METHANOATE (PENTYL FORMATE, AMYL FORMATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 589. \text{ K}$$

$$A = 66.96, \quad B = 1.10, \quad C = -2.30, \quad D = 3.30$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
200	(160.2)	380	120.3	-70	(159.5)	110	119.7
210	(157.9)	390	118.2	-60	(157.2)	120	117.5
220	(155.7)	400	116.1	-50	(154.9)	130	115.4
230	(153.4)	410	114.0	-40	(152.7)	140	113.4
240	(151.1)	420	111.9	-30	(150.4)	150	111.3
250	(148.8)	430	109.9	-20	(148.1)	160	109.2
260	(146.6)	440	107.8	-10	(145.9)	170	107.2
270	(144.3)	450	105.8	0	(143.6)	180	105.2
280	142.1	460	103.8	10	141.4	190	103.2
290	139.9	470	101.8	20	139.2	200	101.2
300	137.7	480	99.8	30	137.0	210	99.2
310	135.5	490	97.8	40	134.8	220	97.2
320	133.3	500	95.9	50	132.6	230	95.3
330	131.1	510	93.9	60	130.4	240	93.3
340	128.9	520	92.0	70	128.2	250	91.4
350	126.7	530	90.1	80	126.1	260	89.5
360	124.6	540	88.1	90	123.9	270	87.5
370	122.5			100	121.8		

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HCOO[CH₂]₅CH₃ HEXYL METHANOATE (HEXYL FORMATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$T_r = T/T_c$, T = temperature (K)

$T_c = 611. \text{ K}$

$A = 65.58, \quad B = 1.03, \quad C = -2.09, \quad D = 3.09$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
210	(153.8)	390	117.4	-60	(153.1)	120	116.8
220	(151.7)	400	(115.5)	-50	(151.0)	130	(114.9)
230	(149.6)	410	(113.6)	-40	(149.0)	140	(113.0)
240	(147.5)	420	(111.6)	-30	(146.9)	150	(111.0)
250	(145.5)	430	(109.7)	-20	(144.8)	160	(109.1)
260	(143.4)	440	(107.8)	-10	(142.8)	170	(107.2)
270	(141.4)	450	(105.9)	0	(140.7)	180	(105.4)
280	(139.3)	460	(104.1)	10	(138.7)	190	(103.5)
290	(137.3)	470	(102.2)	20	(136.7)	200	(101.6)
300	(135.3)	480	(100.4)	30	(134.6)	210	(99.8)
310	(133.3)	490	(98.5)	40	132.6	220	(97.9)
320	131.3	500	(96.7)	50	130.6	230	(96.1)
330	129.3	510	(94.9)	60	128.6	240	(94.3)
340	127.3	520	(93.1)	70	126.6	250	(92.5)
350	125.3	530	(91.3)	80	124.6	260	(90.7)
360	123.3	540	(89.5)	90	122.7	270	(88.9)
370	121.3	550	(87.6)	100	120.7	280	(87.1)
380	119.4			110	118.8		

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Inzh. Fiz. Zh., Vol. 46, No. 5, pp. 773-776, 1984.

HCOO[CH₂]₆CH₃ HEPTYL METHANOATE (HEPTYL FORMATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 631. \text{ K}$$

$$A = 65.70, \quad B = 0.97, \quad C = -1.91, \quad D = 2.91$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
220	(151.2)	400	117.1	-50	(150.6)	130	116.5
230	(149.2)	410	115.2	-40	(148.6)	140	114.7
240	(147.3)	420	113.4	-30	(146.7)	150	112.8
250	(145.4)	430	(111.6)	-20	(144.7)	160	(111.0)
260	(143.4)	440	(109.8)	-10	(142.8)	170	(109.2)
270	(141.5)	450	(108.0)	0	(140.9)	180	(107.4)
280	139.6	460	(106.2)	10	139.0	190	(105.6)
290	137.7	470	(104.4)	20	137.1	200	(103.9)
300	135.8	480	(102.6)	30	135.2	210	(102.1)
310	133.9	490	(100.9)	40	133.3	220	(100.3)
320	132.0	500	(99.1)	50	131.4	230	(98.6)
330	130.1	510	(97.4)	60	129.5	240	(96.8)
340	128.2	520	(95.6)	70	127.6	250	(95.1)
350	126.3	530	(93.9)	80	125.7	260	(93.4)
360	124.5	540	(92.2)	90	123.9	270	(91.6)
370	122.6	550	(90.5)	100	122.0	280	(89.9)
380	120.7	560	(88.7)	110	120.2	290	(88.2)
390	118.9	570	(87.0)	120	118.3	300	(86.4)

MUKHAMEDZYANOV, G.Kh.
USMANOV, A.G.

Inzh. Fiz. Zh., Vol. 13, No. 2, pp. 177-183, 1967.

HCOO[CH₂]₇CH₃ OCTYL METHANOATE (OCTYL FORMATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 649. \text{ K}$$

$$A = 65.59, \quad B = 0.93, \quad C = -1.79, \quad D = 2.79$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
230	(148.8)	420	114.6	-40	(148.2)	150	114.1
240	(146.9)	430	112.9	-30	(146.3)	160	112.4
250	(145.1)	440	111.2	-20	(144.5)	170	110.6
260	(143.2)	450	109.4	-10	(142.7)	180	108.9
270	(141.4)	460	107.7	0	(140.8)	190	107.2
280	139.6	470	106.0	10	139.0	200	105.5
290	137.8	480	104.3	20	137.2	210	103.8
300	136.0	490	102.6	30	135.4	220	102.1
310	134.2	500	100.9	40	133.6	230	100.4
320	132.4	510	(99.3)	50	131.8	240	(98.7)
330	130.6	520	(97.6)	60	130.0	250	(97.0)
340	128.8	530	(95.9)	70	128.2	260	(95.4)
350	127.0	540	(94.2)	80	126.4	270	(93.7)
360	125.2	550	(92.6)	90	124.6	280	(92.1)
370	123.4	560	(90.9)	100	122.9	290	(90.4)
380	121.7	570	(89.3)	110	121.1	300	(88.7)
390	119.9	580	(87.6)	120	119.3	310	(87.1)
400	118.1	590	(85.9)	130	117.6	320	(85.4)
410	116.4			140	115.8		

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Inzh. Fiz. Zh., Vol. 46, No. 5, pp. 773-776, 1984.

HCOO[CH₂]₈CH₃ NONYL METHANOATE (NONYL FORMATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 670.15 \text{ K}$$

$$A = 65.93, \quad B = 0.90, \quad C = -1.70, \quad D = 2.70$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
240	(148.0)	430	(115.3)	-30	(147.4)	160	(114.8)
250	(146.2)	440	(113.7)	-20	(145.7)	170	(113.1)
260	(144.5)	450	(112.0)	-10	(143.9)	180	(111.5)
270	(142.7)	460	(110.3)	0	(142.2)	190	(109.8)
280	(141.0)	470	(108.7)	10	(140.4)	200	(108.2)
290	(139.2)	480	(107.0)	20	(138.7)	210	(106.5)
300	(137.5)	490	(105.4)	30	(136.9)	220	(104.9)
310	(135.8)	500	(103.8)	40	(135.2)	230	(103.2)
320	(134.0)	510	(102.1)	50	(133.5)	240	(101.6)
330	(132.3)	520	(100.5)	60	(131.8)	250	(100.0)
340	(130.6)	530	(98.9)	70	(130.0)	260	(98.4)
350	(128.9)	540	(97.3)	80	(128.3)	270	(96.8)
360	(127.2)	550	(95.7)	90	(126.6)	280	(95.2)
370	(125.4)	560	(94.1)	100	(124.9)	290	(93.6)
380	(123.7)	570	(92.5)	110	(123.2)	300	(92.0)
390	(122.1)	580	(90.9)	120	(121.5)	310	(90.3)
400	(120.4)	590	(89.2)	130	(119.8)	320	(88.7)
410	(118.7)	600	(87.6)	140	(118.1)	330	(87.1)
420	(117.0)	610	(86.0)	150	(116.5)	340	(85.5)

HCOO[CH₂]₉CH₃ DECYL METHANOATE (DECYL FORMATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 687.15 \text{ K}$$

$$A = 66.70, \quad B = 0.88, \quad C = -1.64, \quad D = 2.64$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
250	(148.3)	440	(116.5)	-20	(147.8)	170	(115.9)
260	(146.6)	450	(114.8)	-10	(146.0)	180	(114.3)
270	(144.9)	460	(113.2)	0	(144.3)	190	(112.7)
280	(143.2)	470	(111.6)	10	(142.6)	200	(111.1)
290	(141.5)	480	(110.0)	20	(140.9)	210	(109.5)
300	(139.8)	490	(108.3)	30	(139.2)	220	(107.8)
310	(138.1)	500	(106.7)	40	(137.5)	230	(106.2)
320	(136.4)	510	(105.1)	50	(135.9)	240	(104.6)
330	(134.7)	520	(103.5)	60	(134.2)	250	(103.0)
340	(133.0)	530	(102.0)	70	(132.5)	260	(101.5)
350	(131.3)	540	(100.4)	80	(130.8)	270	(99.9)
360	(129.7)	550	(98.8)	90	(129.1)	280	(98.3)
370	(128.0)	560	(97.2)	100	(127.5)	290	(96.7)
380	(126.3)	570	(95.6)	110	(125.8)	300	(95.1)
390	(124.7)	580	(94.1)	120	(124.2)	310	(93.6)
400	(123.0)	590	(92.5)	130	(122.5)	320	(92.0)
410	(121.4)	600	(90.9)	140	(120.9)	330	(90.4)
420	(119.7)	610	(89.3)	150	(119.2)	340	(88.8)
430	(118.1)	620	(87.7)	160	(117.6)	350	(87.2)

HCOO[CH₂]₁₁CH₃ DODECYL METHANOATE (DODECYL FORMATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$T_r = T/T_c$, T = temperature (K)

$T_c = 718.15$ K

$A = 66.93$, $B = 0.86$, $C = -1.58$, $D = 2.58$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
270	(146.7)	470	(114.9)	0	(146.1)	200	(114.4)
280	(145.0)	480	(113.4)	10	(144.5)	210	(112.9)
290	(143.4)	490	(111.8)	20	(142.9)	220	(111.3)
300	(141.8)	500	(110.3)	30	(141.3)	230	(109.8)
310	(140.2)	510	(108.8)	40	(139.7)	240	(108.3)
320	(138.6)	520	(107.2)	50	(138.1)	250	(106.7)
330	(137.0)	530	(105.7)	60	(136.5)	260	(105.2)
340	(135.4)	540	(104.2)	70	(134.9)	270	(103.7)
350	(133.8)	550	(102.7)	80	(133.3)	280	(102.2)
360	(132.2)	560	(101.2)	90	(131.7)	290	(100.7)
370	(130.6)	570	(99.6)	100	(130.1)	300	(99.2)
380	(129.0)	580	(98.1)	110	(128.5)	310	(97.7)
390	(127.4)	590	(96.6)	120	(126.9)	320	(96.2)
400	(125.9)	600	(95.1)	130	(125.4)	330	(94.7)
410	(124.3)	610	(93.6)	140	(123.8)	340	(93.2)
420	(122.7)	620	(92.1)	150	(122.2)	350	(91.6)
430	(121.1)	630	(90.6)	160	(120.6)	360	(90.1)
440	(119.6)	640	(89.1)	170	(119.1)	370	(88.6)
450	(118.0)	650	(87.6)	180	(117.5)	380	(87.1)
460	(116.5)			190	(116.0)		

HCOO[CH₂]₁₃CH₃ TETRADECYL METHANOATE (TETRADECYL FORMATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 745.15 \text{ K}$$

$$A = 67.92, \quad B = 0.87, \quad C = -1.61, \quad D = 2.61$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
280	(149.2)	490	(116.4)	10	(148.7)	220	(116.0)
290	(147.6)	500	(114.9)	20	(147.1)	230	(114.4)
300	(146.0)	510	(113.4)	30	(145.5)	240	(112.9)
310	(144.4)	520	(111.9)	40	(143.9)	250	(111.4)
320	(142.8)	530	(110.4)	50	(142.4)	260	(109.9)
330	(141.3)	540	(108.9)	60	(140.8)	270	(108.4)
340	(139.7)	550	(107.4)	70	(139.2)	280	(106.9)
350	(138.1)	560	(105.9)	80	(137.6)	290	(105.4)
360	(136.5)	570	(104.4)	90	(136.0)	300	(103.9)
370	(135.0)	580	(102.9)	100	(134.5)	310	(102.5)
380	(133.4)	590	(101.4)	110	(132.9)	320	(101.0)
390	(131.8)	600	(100.0)	120	(131.4)	330	(99.5)
400	(130.3)	610	(98.5)	130	(129.8)	340	(98.0)
410	(128.7)	620	(97.0)	140	(128.2)	350	(96.5)
420	(127.2)	630	(95.5)	150	(126.7)	360	(95.1)
430	(125.6)	640	(94.1)	160	(125.1)	370	(93.6)
440	(124.1)	650	(92.6)	170	(123.6)	380	(92.1)
450	(122.6)	660	(91.1)	180	(122.1)	390	(90.6)
460	(121.0)	670	(89.6)	190	(120.5)	400	(89.1)
470	(119.5)	680	(88.1)	200	(119.0)	410	(87.6)
480	(118.0)			210	(117.5)		

HCOO[CH₂]₁₅CH₃ HEXADECYL METHANOATE (HEXADECYL FORMATE, CETYL FORMATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 770.15 \text{ K}$$

$$A = 68.79, \quad B = 0.89, \quad C = -1.67, \quad D = 2.67$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
290	(151.8)	500	(119.3)	20	(151.3)	230	(118.8)
300	(150.2)	510	(117.8)	30	(149.7)	240	(117.3)
310	(148.6)	520	(116.2)	40	(148.1)	250	(115.8)
320	(147.0)	530	(114.8)	50	(146.5)	260	(114.3)
330	(145.5)	540	(113.3)	60	(145.0)	270	(112.8)
340	(143.9)	550	(111.8)	70	(143.4)	280	(111.3)
350	(142.3)	560	(110.3)	80	(141.8)	290	(109.8)
360	(140.8)	570	(108.8)	90	(140.3)	300	(108.3)
370	(139.2)	580	(107.3)	100	(138.7)	310	(106.9)
380	(137.6)	590	(105.9)	110	(137.1)	320	(105.4)
390	(136.1)	600	(104.4)	120	(135.6)	330	(103.9)
400	(134.5)	610	(102.9)	130	(134.0)	340	(102.5)
410	(133.0)	620	(101.5)	140	(132.5)	350	(101.0)
420	(131.4)	630	(100.0)	150	(131.0)	360	(99.6)
430	(129.9)	640	(98.6)	160	(129.4)	370	(98.1)
440	(128.4)	650	(97.1)	170	(127.9)	380	(96.7)
450	(126.8)	660	(95.7)	180	(126.4)	390	(95.2)
460	(125.3)	670	(94.2)	190	(124.8)	400	(93.7)
470	(123.8)	680	(92.7)	200	(123.3)	410	(92.3)
480	(122.3)	690	(91.3)	210	(121.8)	420	(90.8)
490	(120.8)	700	(89.8)	220	(120.3)	430	(89.3)

HCOO[CH₂]₁₇CH₃ OCTADECYL METHANOATE (OCTADECYL FORMATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 791.15 \text{ K}$$

$$A = 69.12, \quad B = 0.93, \quad C = -1.79, \quad D = 2.79$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
300	(153.6)	520	(119.6)	30	(153.1)	250	(119.1)
310	(152.1)	530	(118.1)	40	(151.6)	260	(117.6)
320	(150.5)	540	(116.6)	50	(150.0)	270	(116.1)
330	(148.9)	550	(115.1)	60	(148.4)	280	(114.7)
340	(147.3)	560	(113.6)	70	(146.8)	290	(113.2)
350	(145.7)	570	(112.2)	80	(145.2)	300	(111.7)
360	(144.2)	580	(110.7)	90	(143.7)	310	(110.2)
370	(142.6)	590	(109.2)	100	(142.1)	320	(108.8)
380	(141.0)	600	(107.8)	110	(140.6)	330	(107.3)
390	(139.5)	610	(106.3)	120	(139.0)	340	(105.8)
400	(137.9)	620	(104.8)	130	(137.4)	350	(104.4)
410	(136.4)	630	(103.4)	140	(135.9)	360	(102.9)
420	(134.8)	640	(101.9)	150	(134.4)	370	(101.5)
430	(133.3)	650	(100.5)	160	(132.8)	380	(100.0)
440	(131.8)	660	(99.1)	170	(131.3)	390	(98.6)
450	(130.2)	670	(97.6)	180	(129.7)	400	(97.2)
460	(128.7)	680	(96.2)	190	(128.2)	410	(95.7)
470	(127.2)	690	(94.8)	200	(126.7)	420	(94.3)
480	(125.6)	700	(93.3)	210	(125.2)	430	(92.9)
490	(124.1)	710	(91.9)	220	(123.7)	440	(91.4)
500	(122.6)	720	(90.4)	230	(122.1)	450	(90.0)
510	(121.1)			240	(120.6)		

CH₃COOCH₃ METHYL ETHANOATE (METHYL ACETATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$T_r = T/T_c$, T = temperature (K)

$T_c = 506.55$ K

$A = 76.13$, $B = 1.43$, $C = -3.29$, $D = 4.29$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
170	(197.4)	320	145.8	-100	(196.3)	50	144.7
180	(193.8)	330	142.5	-90	(192.7)	60	141.5
190	(190.2)	340	139.3	-80	(189.1)	70	138.3
200	(186.7)	350	136.2	-70	(185.5)	80	135.2
210	(183.1)	360	133.1	-60	(182.0)	90	132.1
220	(179.6)	370	130.0	-50	(178.5)	100	129.0
230	(176.1)	380	126.9	-40	(175.0)	110	126.0
240	(172.6)	390	123.9	-30	(171.5)	120	123.0
250	(169.2)	400	121.0	-20	(168.1)	130	120.1
260	(165.7)	410	118.1	-10	(164.7)	140	117.2
270	(162.3)	420	115.2	0	161.3	150	114.3
280	159.0	430	112.4	10	157.9	160	111.5
290	155.6	440	109.7	20	154.6	170	108.8
300	152.3	450	106.9	30	151.3	180	106.1
310	149.0	460	104.3	40	148.0	190	103.4

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CH₃COOCH₂CH₃ ETHYL ETHANOATE (ETHYL ACETATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 523.3 \text{ K}$$

$$A = 70.49, \quad B = 1.30, \quad C = -2.90, \quad D = 3.90$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
190	(173.1)	340	129.8	-80	(172.2)	70	128.9
200	(170.1)	350	127.1	-70	(169.2)	80	126.2
210	(167.1)	360	124.4	-60	(166.2)	90	123.5
220	(164.1)	370	121.7	-50	(163.2)	100	120.9
230	(161.2)	380	119.1	-40	(160.2)	110	118.2
240	(158.2)	390	116.5	-30	(157.3)	120	115.6
250	(155.3)	400	113.9	-20	(154.4)	130	113.1
260	(152.4)	410	111.3	-10	(151.5)	140	110.5
270	(149.5)	420	108.8	0	148.6	150	108.0
280	146.6	430	106.3	10	145.7	160	105.5
290	143.8	440	103.9	20	142.9	170	103.1
300	140.9	450	101.5	30	140.0	180	100.7
310	138.1	460	99.1	40	137.2	190	98.3
320	135.3	470	96.7	50	134.4	200	96.0
330	132.5	480	94.4	60	131.7	210	93.6

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CH₃COO[CH₂]₂CH₃ PROPYL ETHANOATE (PROPYL ACETATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$T_r = T/T_c$, T = temperature (K)

$T_c = 549.73$ K

$A = 67.44$, $B = 1.20$, $C = -2.60$, $D = 3.60$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
170	(169.7)	340	126.5	-100	(168.8)	70	125.8
180	(167.0)	350	124.1	-90	(166.2)	80	123.4
190	(164.4)	360	(121.7)	-80	(163.6)	90	(121.0)
200	(161.8)	370	(119.4)	-70	(161.0)	100	(118.6)
210	(159.2)	380	(117.0)	-60	(158.4)	110	(116.3)
220	(156.6)	390	(114.7)	-50	(155.8)	120	(113.9)
230	(154.0)	400	(112.3)	-40	(153.2)	130	(111.6)
240	(151.5)	410	(110.1)	-30	(150.7)	140	(109.3)
250	(148.9)	420	(107.8)	-20	(148.1)	150	(107.1)
260	(146.4)	430	(105.5)	-10	(145.6)	160	(104.8)
270	(143.8)	440	(103.3)	0	(143.0)	170	(102.6)
280	(141.3)	450	(101.1)	10	140.5	180	(100.4)
290	138.8	460	(98.9)	20	138.0	190	(98.2)
300	136.3	470	(96.8)	30	135.5	200	(96.1)
310	133.9	480	(94.6)	40	133.1	210	(94.0)
320	131.4	490	(92.5)	50	130.6	220	(91.8)
330	129.0	500	(90.4)	60	128.2	230	(89.7)

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Vestn. Mosk. Gos. Univ. Ser. 3, Fiz. Astron., Vol. 15, No. 3, pp. 61-68, 1960.

CH₃COO[CH₂]₃CH₃ BUTYL ETHANOATE (BUTYL ACETATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 578. \text{ K}$$

$$A = 65.89, \quad B = 1.10, \quad C = -2.30, \quad D = 3.30$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
190	(159.1)	370	119.0	-80	(158.4)	100	118.3
200	(156.8)	380	116.9	-70	(156.1)	110	116.2
210	(154.5)	390	114.8	-60	(153.8)	120	114.1
220	(152.2)	400	112.7	-50	(151.5)	130	112.0
230	(149.9)	410	110.6	-40	(149.2)	140	110.0
240	(147.7)	420	108.5	-30	(147.0)	150	107.9
250	(145.4)	430	106.5	-20	(144.7)	160	105.8
260	(143.2)	440	104.4	-10	(142.4)	170	103.8
270	(140.9)	450	102.4	0	140.2	180	101.8
280	138.7	460	100.4	10	138.0	190	99.8
290	136.4	470	98.4	20	135.7	200	97.8
300	134.2	480	96.4	30	133.5	210	95.8
310	132.0	490	94.5	40	131.3	220	93.9
320	129.8	500	92.5	50	129.1	230	91.9
330	127.6	510	90.6	60	127.0	240	90.0
340	125.5	520	88.7	70	124.8	250	88.1
350	123.3	530	86.7	80	122.6	260	86.1
360	121.2			90	120.5		

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CH₃COO[CH₂]₄CH₃ PENTYL ETHANOATE (PENTYL ACETATE, AMYL ACETATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c, \quad T = \text{temperature (K)}$$

$$T_c = 601. \text{ K}$$

$$A = 65.04, \quad B = 1.03, \quad C = -2.09, \quad D = 3.09$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
200	(153.9)	380	117.2	-70	(153.2)	110	116.5
210	(151.8)	390	115.2	-60	(151.1)	120	114.6
220	(149.7)	400	113.3	-50	(149.0)	130	112.6
230	(147.6)	410	111.3	-40	(146.9)	140	110.7
240	(145.5)	420	109.4	-30	(144.9)	150	108.8
250	(143.4)	430	107.5	-20	(142.8)	160	106.9
260	(141.4)	440	105.6	-10	(140.7)	170	105.0
270	(139.3)	450	103.7	0	138.7	180	103.1
280	137.3	460	101.8	10	136.6	190	101.2
290	135.2	470	99.9	20	134.6	200	99.3
300	133.2	480	98.1	30	132.5	210	97.5
310	131.1	490	96.2	40	130.5	220	95.6
320	129.1	500	94.4	50	128.5	230	93.8
330	127.1	510	92.6	60	126.5	240	92.0
340	125.1	520	90.7	70	124.5	250	90.2
350	123.1	530	88.9	80	122.5	260	88.4
360	121.1	540	87.1	90	120.5	270	86.5
370	119.1	550	85.3	100	118.5	280	84.7

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CH₃COO[CH₂]₅CH₃ HEXYL ETHANOATE (HEXYL ACETATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 623. \text{ K}$$

$$A = 65.15, \quad B = 0.97, \quad C = -1.91, \quad D = 2.91$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
210	(151.3)	400	115.1	-60	(150.7)	130	114.6
220	(149.4)	410	(113.3)	-50	(148.8)	140	(112.7)
230	(147.4)	420	(111.5)	-40	(146.8)	150	(110.9)
240	(145.5)	430	(109.7)	-30	(144.9)	160	(109.1)
250	(143.5)	440	(107.9)	-20	(142.9)	170	(107.3)
260	(141.6)	450	(106.1)	-10	(141.0)	180	(105.5)
270	(139.7)	460	(104.3)	0	139.1	190	(103.7)
280	137.7	470	(102.5)	10	137.1	200	(101.9)
290	135.8	480	(100.7)	20	135.2	210	(100.2)
300	133.9	490	(98.9)	30	133.3	220	(98.4)
310	132.0	500	(97.2)	40	131.4	230	(96.6)
320	130.1	510	(95.4)	50	129.5	240	(94.9)
330	128.2	520	(93.7)	60	127.6	250	(93.1)
340	126.3	530	(92.0)	70	125.7	260	(91.4)
350	124.4	540	(90.2)	80	123.8	270	(89.7)
360	122.6	550	(88.5)	90	122.0	280	(87.9)
370	120.7	560	(86.8)	100	120.1	290	(86.2)
380	118.8	570	(85.0)	110	118.3	300	(84.4)
390	117.0			120	116.4		

MUKHAMEDZYANOV, G.Kh.
USMANOV, A.G.

Inzh. Fiz. Zh., Vol. 13, No. 2, pp. 177-183, 1967.

CH₃COO[CH₂]₆CH₃ HEPTYL ETHANOATE (HEPTYL ACETATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$T_r = T/T_c$, T = temperature (K)

$T_c = 643. \text{ K}$

$A = 65.59$, $B = 0.93$, $C = -1.79$, $D = 2.79$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
220	(150.2)	410	(115.7)	-50	(149.6)	140	(115.2)
230	(148.4)	420	(114.0)	-40	(147.8)	150	(113.4)
240	(146.5)	430	(112.2)	-30	(145.9)	160	(111.7)
250	(144.6)	440	(110.5)	-20	(144.1)	170	(109.9)
260	(142.8)	450	(108.7)	-10	(142.2)	180	(108.2)
270	(141.0)	460	(107.0)	0	(140.4)	190	(106.5)
280	(139.1)	470	(105.3)	10	(138.5)	200	(104.7)
290	(137.3)	480	(103.6)	20	(136.7)	210	(103.0)
300	(135.5)	490	(101.8)	30	(134.9)	220	(101.3)
310	(133.6)	500	(100.1)	40	(133.1)	230	(99.6)
320	(131.8)	510	(98.5)	50	(131.2)	240	(97.9)
330	(130.0)	520	(96.8)	60	(129.4)	250	(96.2)
340	(128.2)	530	(95.1)	70	(127.6)	260	(94.6)
350	(126.4)	540	(93.4)	80	(125.8)	270	(92.9)
360	(124.6)	550	(91.7)	90	(124.0)	280	(91.2)
370	(122.8)	560	(90.1)	100	(122.2)	290	(89.5)
380	(121.0)	570	(88.4)	110	(120.5)	300	(87.8)
390	(119.2)	580	(86.7)	120	(118.7)	310	(86.2)
400	(117.5)			130	(116.9)		

CH₃COO[CH₂]₇CH₃ OCTYL ETHANOATE (OCTYL ACETATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 661. \text{ K}$$

$$A = 65.38, \quad B = 0.90, \quad C = -1.70, \quad D = 2.70$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
230	(147.9)	420	(115.1)	-40	(147.4)	150	(114.5)
240	(146.2)	430	(113.4)	-30	(145.6)	160	(112.8)
250	(144.4)	440	(111.7)	-20	(143.8)	170	(111.2)
260	(142.6)	450	(110.0)	-10	(142.1)	180	(109.5)
270	(140.9)	460	(108.4)	0	(140.3)	190	(107.8)
280	(139.1)	470	(106.7)	10	(138.6)	200	(106.2)
290	(137.4)	480	(105.1)	20	(136.8)	210	(104.5)
300	(135.6)	490	(103.4)	30	(135.1)	220	(102.9)
310	133.9	500	(101.8)	40	133.3	230	(101.3)
320	132.1	510	(100.1)	50	131.6	240	(99.6)
330	130.4	520	(98.5)	60	129.9	250	(98.0)
340	128.7	530	(96.9)	70	128.1	260	(96.4)
350	127.0	540	(95.3)	80	126.4	270	(94.8)
360	(125.2)	550	(93.7)	90	(124.7)	280	(93.1)
370	(123.5)	560	(92.0)	100	(123.0)	290	(91.5)
380	(121.8)	570	(90.4)	110	(121.3)	300	(89.9)
390	(120.1)	580	(88.8)	120	(119.6)	310	(88.3)
400	(118.4)	590	(87.2)	130	(117.9)	320	(86.7)
410	(116.7)	600	(85.6)	140	(116.2)	330	(85.0)

SAKIADIS, B.C.
COATES, J.

AIChEJ., Vol. 1, No. 3, pp. 275-288, 1955.

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CH₃COO[CH₂]₈CH₃ NONYL ETHANOATE (NONYL ACETATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$T_r = T/T_c$, T = temperature (K)

$T_c = 679.15$ K

$A = 65.05$, $B = 0.88$, $C = -1.64$, $D = 2.64$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
240	(145.8)	440	(112.7)	-30	(145.3)	170	(112.2)
250	(144.1)	450	(111.1)	-20	(143.6)	180	(110.6)
260	(142.4)	460	(109.5)	-10	(141.9)	190	(109.0)
270	(140.8)	470	(107.9)	0	(140.2)	200	(107.4)
280	(139.1)	480	(106.4)	10	(138.5)	210	(105.9)
290	(137.4)	490	(104.8)	20	(136.9)	220	(104.3)
300	(135.7)	500	(103.2)	30	(135.2)	230	(102.7)
310	(134.1)	510	(101.6)	40	(133.5)	240	(101.1)
320	(132.4)	520	(100.0)	50	(131.9)	250	(99.5)
330	(130.7)	530	(98.5)	60	(130.2)	260	(98.0)
340	(129.1)	540	(96.9)	70	(128.6)	270	(96.4)
350	(127.4)	550	(95.3)	80	(126.9)	280	(94.9)
360	(125.8)	560	(93.8)	90	(125.3)	290	(93.3)
370	(124.1)	570	(92.2)	100	(123.6)	300	(91.7)
380	(122.5)	580	(90.7)	110	(122.0)	310	(90.2)
390	(120.9)	590	(89.1)	120	(120.3)	320	(88.6)
400	(119.2)	600	(87.6)	130	(118.7)	330	(87.1)
410	(117.6)	610	(86.0)	140	(117.1)	340	(85.5)
420	(116.0)	620	(84.4)	150	(115.5)	350	(83.9)
430	(114.4)			160	(113.9)		

CH₃COO[CH₂]₉CH₃ DECYL ETHANOATE (DECYL ACETATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 695. \text{ K}$$

$$A = 65.71, \quad B = 0.87, \quad C = -1.61, \quad D = 2.61$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
250	(146.2)	450	(113.8)	-20	(145.7)	180	(113.3)
260	(144.5)	460	(112.2)	-10	(144.0)	190	(111.7)
270	(142.9)	470	(110.6)	0	(142.4)	200	(110.1)
280	(141.2)	480	(109.0)	10	(140.7)	210	(108.5)
290	(139.6)	490	(107.5)	20	(139.1)	220	(107.0)
300	(137.9)	500	(105.9)	30	(137.4)	230	(105.4)
310	136.3	510	(104.4)	40	135.8	240	(103.9)
320	134.7	520	(102.8)	50	134.2	250	(102.3)
330	133.0	530	(101.3)	60	132.5	260	(100.8)
340	131.4	540	(99.7)	70	130.9	270	(99.2)
350	129.8	550	(98.2)	80	129.3	280	(97.7)
360	(128.2)	560	(96.6)	90	(127.7)	290	(96.2)
370	(126.5)	570	(95.1)	100	(126.0)	300	(94.6)
380	(124.9)	580	(93.6)	110	(124.4)	310	(93.1)
390	(123.3)	590	(92.1)	120	(122.8)	320	(91.6)
400	(121.7)	600	(90.5)	130	(121.2)	330	(90.0)
410	(120.1)	610	(89.0)	140	(119.6)	340	(88.5)
420	(118.5)	620	(87.5)	150	(118.0)	350	(87.0)
430	(116.9)	630	(85.9)	160	(116.4)	360	(85.4)
440	(115.3)			170	(114.8)		

SAKIADIS, B.C.
COATES, J.

AIChEJ., Vol. 3, No. 1, pp. 121-126, 1957.

$\text{CH}_3\text{COO}[\text{CH}_2]_{11}\text{CH}_3$ DODECYL ETHANOATE (DODECYL ACETATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 725.15 \text{ K}$$

$$A = 67.48, \quad B = 0.86, \quad C = -1.58, \quad D = 2.58$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
270	(148.3)	470	(116.6)	0	(147.8)	200	(116.1)
280	(146.7)	480	(115.0)	10	(146.2)	210	(114.5)
290	(145.0)	490	(113.5)	20	(144.5)	220	(113.0)
300	(143.4)	500	(111.9)	30	(142.9)	230	(111.5)
310	(141.8)	510	(110.4)	40	(141.3)	240	(109.9)
320	(140.2)	520	(108.9)	50	(139.7)	250	(108.4)
330	(138.6)	530	(107.4)	60	(138.1)	260	(106.9)
340	(137.0)	540	(105.8)	70	(136.5)	270	(105.4)
350	(135.4)	550	(104.3)	80	(134.9)	280	(103.8)
360	(133.8)	560	(102.8)	90	(133.3)	290	(102.3)
370	(132.2)	570	(101.3)	100	(131.7)	300	(100.8)
380	(130.7)	580	(99.8)	110	(130.2)	310	(99.3)
390	(129.1)	590	(98.3)	120	(128.6)	320	(97.8)
400	(127.5)	600	(96.8)	130	(127.0)	330	(96.3)
410	(125.9)	610	(95.3)	140	(125.4)	340	(94.8)
420	(124.4)	620	(93.8)	150	(123.9)	350	(93.3)
430	(122.8)	630	(92.3)	160	(122.3)	360	(91.8)
440	(121.2)	640	(90.8)	170	(120.7)	370	(90.3)
450	(119.7)	650	(89.3)	180	(119.2)	380	(88.8)
460	(118.1)	660	(87.7)	190	(117.6)	390	(87.2)

CH₃COO[CH₂]₁₃CH₃ TETRADECYL ETHANOATE (TETRADECYL ACETATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 752.15 \text{ K}$$

$$A = 67.80, \quad B = 0.88, \quad C = -1.64, \quad D = 2.64$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
280	(149.7)	490	(117.1)	10	(149.2)	220	(116.6)
290	(148.1)	500	(115.6)	20	(147.6)	230	(115.1)
300	(146.6)	510	(114.1)	30	(146.1)	240	(113.6)
310	(145.0)	520	(112.6)	40	(144.5)	250	(112.1)
320	(143.4)	530	(111.1)	50	(142.9)	260	(110.6)
330	(141.8)	540	(109.6)	60	(141.3)	270	(109.1)
340	(140.2)	550	(108.1)	70	(139.8)	280	(107.6)
350	(138.7)	560	(106.6)	80	(138.2)	290	(106.2)
360	(137.1)	570	(105.1)	90	(136.6)	300	(104.7)
370	(135.6)	580	(103.7)	100	(135.1)	310	(103.2)
380	(134.0)	590	(102.2)	110	(133.5)	320	(101.7)
390	(132.4)	600	(100.7)	120	(132.0)	330	(100.3)
400	(130.9)	610	(99.2)	130	(130.4)	340	(98.8)
410	(129.3)	620	(97.8)	140	(128.9)	350	(97.3)
420	(127.8)	630	(96.3)	150	(127.3)	360	(95.9)
430	(126.3)	640	(94.9)	160	(125.8)	370	(94.4)
440	(124.7)	650	(93.4)	170	(124.2)	380	(92.9)
450	(123.2)	660	(91.9)	180	(122.7)	390	(91.5)
460	(121.7)	670	(90.5)	190	(121.2)	400	(90.0)
470	(120.1)	680	(89.0)	200	(119.7)	410	(88.5)
480	(118.6)			210	(118.1)		

CH₃COO[CH₂]₁₅CH₃ HEXADECYL ETHANOATE (HEXADECYL ACETATE, CETYL ACETATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$T_r = T/T_c$, T = temperature (K)

$T_c = 776.15$ K

$A = 68.56$, $B = 0.91$, $C = -1.73$, $D = 2.73$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
290	(152.3)	500	(119.8)	20	(151.8)	230	(119.3)
300	(150.8)	510	(118.3)	30	(150.3)	240	(117.8)
310	(149.2)	520	(116.8)	40	(148.7)	250	(116.3)
320	(147.6)	530	(115.3)	50	(147.1)	260	(114.8)
330	(146.0)	540	(113.8)	60	(145.5)	270	(113.3)
340	(144.5)	550	(112.3)	70	(144.0)	280	(111.9)
350	(142.9)	560	(110.8)	80	(142.4)	290	(110.4)
360	(141.3)	570	(109.4)	90	(140.8)	300	(108.9)
370	(139.8)	580	(107.9)	100	(139.3)	310	(107.4)
380	(138.2)	590	(106.4)	110	(137.7)	320	(106.0)
390	(136.6)	600	(105.0)	120	(136.2)	330	(104.5)
400	(135.1)	610	(103.5)	130	(134.6)	340	(103.0)
410	(133.5)	620	(102.0)	140	(133.1)	350	(101.6)
420	(132.0)	630	(100.6)	150	(131.5)	360	(100.1)
430	(130.5)	640	(99.1)	160	(130.0)	370	(98.7)
440	(128.9)	650	(97.7)	170	(128.4)	380	(97.2)
450	(127.4)	660	(96.3)	180	(126.9)	390	(95.8)
460	(125.9)	670	(94.8)	190	(125.4)	400	(94.4)
470	(124.4)	680	(93.4)	200	(123.9)	410	(92.9)
480	(122.8)	690	(91.9)	210	(122.4)	420	(91.5)
490	(121.3)	700	(90.5)	220	(120.8)	430	(90.0)

CH₃COO[CH₂]₁₇CH₃ OCTADECYL ETHANOATE (OCTADECYL ACETATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$$T_r = T/T_c \quad T = \text{temperature (K)}$$

$$T_c = 797.15 \text{ K}$$

$$A = 68.64, \quad B = 0.95, \quad C = -1.85, \quad D = 2.85$$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
300	(153.7)	520	(119.7)	30	(153.2)	250	(119.2)
310	(152.1)	530	(118.2)	40	151.6	260	(117.8)
320	150.5	540	(116.7)	50	150.0	270	(116.3)
330	148.9	550	(115.3)	60	148.4	280	(114.8)
340	147.4	560	(113.8)	70	146.9	290	(113.3)
350	145.8	570	(112.3)	80	145.3	300	(111.8)
360	144.2	580	(110.8)	90	143.7	310	(110.4)
370	(142.7)	590	(109.4)	100	(142.2)	320	(108.9)
380	(141.1)	600	(107.9)	110	(140.6)	330	(107.5)
390	(139.5)	610	(106.5)	120	(139.1)	340	(106.0)
400	(138.0)	620	(105.0)	130	(137.5)	350	(104.6)
410	(136.4)	630	(103.6)	140	(136.0)	360	(103.1)
420	(134.9)	640	(102.1)	150	(134.4)	370	(101.7)
430	(133.4)	650	(100.7)	160	(132.9)	380	(100.3)
440	(131.8)	660	(99.3)	170	(131.3)	390	(98.8)
450	(130.3)	670	(97.9)	180	(129.8)	400	(97.4)
460	(128.8)	680	(96.4)	190	(128.3)	410	(96.0)
470	(127.3)	690	(95.0)	200	(126.8)	420	(94.6)
480	(125.7)	700	(93.6)	210	(125.3)	430	(93.1)
490	(124.2)	710	(92.2)	220	(123.8)	440	(91.7)
500	(122.7)	720	(90.7)	230	(122.2)	450	(90.3)
510	(121.2)			240	(120.7)		

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CH₃CH₂COOCH₃ METHYL PROPANOATE (METHYL PROPIONATE)

$$\lambda = A[1 + B(1 - T_r)^{1/3} + C(1 - T_r)^{2/3} + D(1 - T_r)]$$

where

λ = thermal conductivity at saturation pressure (mW/m K)

$T_r = T/T_c$, T = temperature (K)

$T_c = 530.55$ K

$A = 71.00$, $B = 1.30$, $C = -2.90$, $D = 3.90$

T K	λ mW/m K	T K	λ mW/m K	t °C	λ mW/m K	t °C	λ mW/m K
180	(178.2)	340	132.0	-90	(177.2)	70	131.2
190	(175.1)	350	129.3	-80	(174.2)	80	128.5
200	(172.2)	360	126.6	-70	(171.2)	90	125.8
210	(169.2)	370	124.0	-60	(168.2)	100	123.1
220	(166.2)	380	121.3	-50	(165.3)	110	120.5
230	(163.3)	390	118.7	-40	(162.3)	120	117.9
240	(160.3)	400	116.1	-30	(159.4)	130	115.3
250	(157.4)	410	113.6	-20	(156.5)	140	112.8
260	(154.5)	420	111.0	-10	(153.6)	150	110.3
270	(151.6)	430	108.6	0	150.7	160	107.8
280	148.8	440	106.1	10	147.9	170	105.3
290	145.9	450	103.7	20	145.0	180	102.9
300	143.1	460	101.3	30	142.2	190	100.5
310	140.3	470	98.9	40	139.4	200	98.2
320	137.5	480	96.6	50	136.7	210	95.9
330	134.8			60	133.9		

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