Molecular Crystals and Liquid Crystals

Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/gmcl16

Aromatic esters derivatives

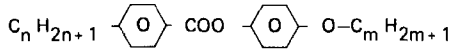
Version of record first published: 03 Jan 2007.

To cite this article: (1984): Aromatic esters derivatives, Molecular Crystals and Liquid Crystals, 115:1-4, 37-59

To link to this article: http://dx.doi.org/10.1080/00268948408073740

AROMATIC ESTERS DERIVATIVES

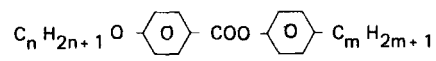
• **Phenylbenzoates**



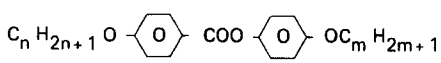
n	m	K		N		I	Ref.
4	1	•	62 *6.7*	–		•	15
4	2	•	(1) *7.8*				15 bis
4	4	•	48 *7.7*	•	[46]	•	2, 15 bis
4	5	•	(1) *7.1*				15 bis
4	6	•	29 *4.7*	•	50	•	2, 15 bis
		•		•	49 *0.720*	•	184
5	1	•	57 *6.3*	–		•	15
		•	57.0-57.9 *6.77*	•	[42.2] *0.144*	•	192
5	2	•	(1) *7.3*				15 bis
		•	61.2-63.0 *7.97*	•	63.4 *0.195*	•	192
5	3	•	56.0-57.3 *6.33*	•	[44.0] *0.140*	•	192
5	4	•	49 *6.8*	•	58	•	2, 15 bis
		•	48.4-49.6 *6.23*	•	57.7 *0.175*	•	192
5	5	•	(1) *4.5*				15 bis
		•	42.0-42.8 *4.68*	•	51.8 *0.146*	•	192

n	m	K	N	I	Ref.
5	6	• (1) *6.1*			15 bis
		• 34.2-36.4 *3.69*	• 59.9 *0.222*	•	192
5	7	• 40.5-42.2 *6.01*	• 57.4 *0.216*	•	192
5	8	• 49.0-49.8 *6.62*	• 60.6 *0.249*	•	192
6	2	• 56 *6.4*	• [53]	•	2, 15 bis
6	4	• 39 *6.8*	• 49	•	2, 15 bis
6	5	• 41 *5.8*	• 44	•	2, 15 bis
6	6	• 44 *5.7*	• 53	•	2, 15 bis

(1) Mesomorphic transitions unknown.



n	m	K		N		I	Ref.
1	4	•	38 *4.45*	•	[24.5]	•	15
1	5	I •	32.5 *5.7*	•	43	•	15
		II •	29 *3.9*	•	43	•	15
4	4	•	69 *8.3*	•	[50]	•	2, 15 bis
4	5	•	68 *7.7*	•	[63]	•	2, 15 bis
4	6	•	67 *7.5*	•	[54]	•	2, 15 bis
5	4	•	42 *7.4*	•	[40]	•	2, 15 bis
5	5	•	39 *8.2*	•	55	•	2, 15 bis
5	6	•	40 *8.2*	•	47	•	2, 15 bis
6	4	•	50 *6.4*	•	53	•	2, 15 bis
6	5	•	50 *3.8*	•	63	•	2, 15 bis
6	6	•	45 *6.0*	•	59	•	2, 15 bis
		K		S_A	N	I	
8	5	•	56.0 *6.2*	• 56.5	•	66 •	15



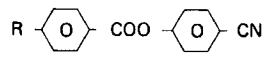
n	m	K		N		I	Ref.
1	5	•	67 *7.1*	•	72.5 *0.15*	•	173
2	2	•	118 *7.3*	•	119.5	•	2, 15 bis
2	4	•	94 *8.8*	•	104.8	•	2, 15 bis
2	5	•	102 *12.4*	•	[94]	•	2, 15 bis
2	6	•	83 *9.3*	•	97.5	•	2, 15 bis
3	6	•	60.5 *9.7*	•	82.0 *0.28*	•	173
4	2	•	97 *9.3*	•	101	•	2, 15 bis
4	4	•	86 *7.1*	•	91	•	2, 15 bis
4	5	•	72 *4.3*	•	86.5	•	2, 15 bis
4	6	•	64.5 *6.6*	•	91.5	•	2, 15 bis
		•	64.5 *7.0*	•	90.5 *0.36*	•	173
5	2	•	84.5 *7.2*	•	90.8	•	2, 15 bis
5	4	•	68.5 *6.1*	•	85.5	•	2, 15 bis
		•	67 *7.19*	•	82	•	5
5	5	•	70 *5.9*	•	81	•	2, 15 bis
5	6	•	56.5 *9.1*	•	85.5	•	2, 15 bis
		•	57.5 *9.8*	•	84.5 *0.34*	•	173
5	12	•	65.0 *12.0*	•	79.5 *0.51*	•	173

n	m	K		S_C		S_A		N		I	Ref.
6	2	•	78 *10.2*	–		–		•	95.9	•	2, 15 bis
6	4	•	68 *7.9*	–		–		•	90	•	2, 15 bis
		•	66 *8.4*	–		–		•	89.5 *0.32*	•	
6	5	•	71 *6.0*	–		–		•	86.5	•	2, 15 bis
6	6	•	64.5 *4.1*	–		–		•	90	•	2, 15 bis
6	12	•	65.0 *12.0*	–		•	[59] *0.11*	•	85.0 *0.60*	•	173
7	5	•	59.0 *9.6*	–		•	[~ 50] *0.13*	•	82.0 *0.26*	•	173
7	6	•	65.5 *6.9*	–		•	[51] *0.19*	•	86.0 *0.41*	•	173
7	8	•	60.5 *9.3*	–		•	[58] *0.21*	•	87.5 *0.48*	•	173
8	1	•	82.0 *11.2*	–		–		•	[76.0] *0.25*	•	173
8	2	•	77.5 *7.9*	–		–		•	92.5	•	2, 15 bis
		•	77.5 *8.4*	–		–		•	92.5 *0.34*	•	173
8	3	•	69.0 *6.2*	–		•	[59] *0.14*	•	81.0 *0.34*	•	173
		K_1	57 *3.4*	K_2							
8	4	•	57.5 *8.6*	•	58.5	•	60	•	89	•	2, 15 bis
		•	65.0 *20.6*	•	[59	•	60] *0.02*	•	89.0 *0.43*	•	173
		K_1	57 *8.4*	•							

n	m	K		S_B		S_C		S_A		N		I	Ref.
8	5	•	58 *8.9*	–		•	64	•	66	•	85	•	2, 15 bis
		•	58 *9.3*	–		•	63 *~ 0.04*	•	65 *0.17*	•	85.0 *0.43*	•	173
8	6	•	55 *7.7*	–		•	66	–		•	85.5	•	2, 15 bis
		•	55.0 *9.1*	–		•	66 *0.10*	–		•	89.5 *0.49*	•	173
8	7	•	62.0 *9.6*	–		•	69 *0.091*	–		•	88.0 *0.48*	•	173
8	8	•	62.5 *9.2*	–		•	73 *0.12*	–		•	90.5 *0.61*	•	173
8	9	•	66.0 *10.3*	–		•	76 *0.091*	–		•	89.0 *0.60*	•	173
10	5	•	64.0 *11.7*	•	[46] *1.87*	•	68 *0.04*	•	80 *0.28*	•	85.0 *0.43*	•	173
10	6	•	62.0 *11.0*	•	[44] *1.28*	•	77 *0.04*	•	83 *0.21*	•	89.0 *0.53*	•	173
		(1) •	61.2 *10.8*	•	[44.1] *1.12*	•	77.4 *~ 0*	•	82.6 *0.16*	•	89.0 *0.50*	•	178
10	7	•	70.5 *13.4*	–		•	81 *0.05*	•	85 *0.19*	•	88.0 *0.55*	•	173
10	8	•	71.0 *11.5*	–		•	85 *0.06*	•	87 *0.26*	•	91.0 *0.76*	•	173
10	9	•	74.0 *12.0*	–		•	86 *0.07*	•	88 *0.24*	•	89.0 *0.84*	•	173
10	12	•	77.0 *13.2*	–		•	88 *0.04*	•	90 *1.7*	–		•	173

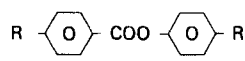
n	m	K	S_B	S_C	S_A	N	I	Ref.
11	5	• 64.5 *11.8*	• [51] *1.6*	• 67 *0.02*	• 85 *0.61*	• 87.0 *0.54*	•	173
11	6	• 61.0 *11.5*	• [54] *1.5*	• 79 *0.024*	• 86 *0.43*	• 88.0 *0.61*	•	173
11	7	• 68.5 *12.2*	• [54] *1.7*	• 84 *0.03*	• 88 *1.9*	–	•	173
11	8	• 67.5 *11.7*	• [54] *1.4*	• 88 *0.02*	• 91 *1.7*	–	•	173
12	5	• 63.0 *12.2*	• [53.5] *1.73*	• 66 *0.007*	• 84.5 *1.8*	–	•	173
12	6	• 61.0 *11.2*	• [54] *1.1*	• 76 *?*	• 88.5 *1.8*	–	•	173
12	7	• 71 *14.1*	• [57] *1.5*	• 83 *0.024*	• 89.5 *1.8*	–	•	173

(1) Additional monotropic transition [S_E - S_B] at 34.3°C with 1.89 hcal. mol^{-1} enthalpy variation.



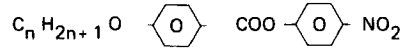
R	K		N		I	Ref.
n–C_3H_7–	•	102.5 *8.56*	•	[50.7]	•	17 bis
n–C_4H_9–	•	67.1 *8.9* *6.7*	•	[42.6]	•	17, 17 bis 15 bis
	•	68 *6.75*	•	[38.5] *0.13*	•	168
	[K']	52.5 *5.22*	I			
	•	?	•	[42] *0.600*	•	184
n–C_5H_{11}–	•	64.4 *6.0*	•	[55.4]	•	2, 15 bis
n–C_6H_{13}–	•	44.5 *9.57* *9.67*	•	47.0	•	17 17 bis
	•	43 *5.7* *8.6*	•	[37]	•	15 15 bis
	•	?	•	48 *0.694*	•	184
n–C_7H_{15}–	•	44.6 *9.45*	•	56.0	•	17, 17 bis
	•	42.5 *7.2* *8.7*	•	55	•	15 15 bis
	•	42.5 *7.54*	•	54.7 *0.24*	•	168
	[K']	26.5 *5.07*	N			
	•	?	•	57 *1.27*	•	184
n–C_8H_{17}–	•	47 *9.2*	•	55	•	15

R	K		N		I	Ref.
n–C_4H_9O	•	92.0 *8.2*	•	104.0	•	2, 15 bis
n–$C_5H_{11}O$	•	87.0 *7.7*	•	96.0	•	2, 15 bis
	•	84.5 *8.85*	•	[74.1] *0.12*	•	168
n–$C_6H_{13}O$	•	70.5 *8.3*	•	81.0	•	2, 15 bis
n–$C_7H_{15}O$	•	71.6 *8.2*	•	82.0	•	2, 15 bis
n–$C_8H_{17}O$	•	73 *8.6*	•	79	•	15

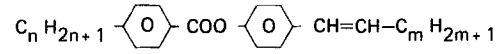


R	R'	K		N		I	Ref.
n–C_4H_9OCOO–	C_2H_5O–	•	54 *5.2*	•	83 *0.23*	•	16
		•		•	84 *0.971*	•	184
n–C_4H_9OCOO–	$C_6H_{13}O$–	•	?	•	79 *1.49*	•	184
n–C_4H_9O– (1)	n–$C_6H_{13}OCOO$–	•	73.3 *18.8*	•	83.2	•	17 bis
n–C_4H_9O– (1)	n–$C_7H_{15}OCOO$–	•	85.8 *33.7*	•	[81.0]	•	17 bis
n–C_4H_9O– (1)	n–$C_8H_{17}OCOO$–	•	82.0 *42.3*	•	[79.0]	•	17 bis

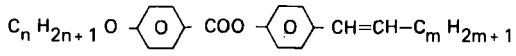
(1) ΔH calculated from the phase diagrams by means of the Schröder van Laar eq.



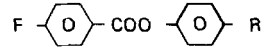
n	K		S_A		N		I	Ref.
8	•	50.69 *4.412*	•	61.49 *0.036*	•	67.63 *0.085*	•	204
10	•	56.1 *5.07*	•	75.2 *0.39*	–		•	204
12	•	62.75 *7.10*	•	81.09 *0.47*	–		•	204



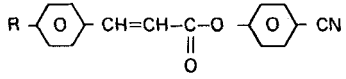
n	m	K		S_A		N		I	Ref.
1	3	•	84 *7.0*	–		•	92.5	•	18
3	3	•	52.5 *4.0*	–		•	80.5	•	18
5	3	•	43 *3.75*	–		•	89	•	18
7	3	•	52.5 *5.65*	–		•	83.5	•	18
8	3	•	51.5 *8.2*	•	[37]	•	79.5	•	18
1	5	•	52.5 *4.7*	–		•	83	•	18
3	5	•	47.5 *3.9*	–		•	85	•	18
5	5	•	43 *2.85*	–		•	85	•	18
6	5	•	42 *3.35*	–		•	76	•	18
7	5	•	35 *6.8*	–		•	82.5	•	18
8	5	•	47.5 *6.5*	•	[31]	•	71.5	•	18



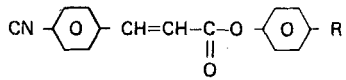
n	m	K		S_A		N		I	Ref.
1	3	•	88 *6.8*	–		•	130	•	18
2	3	•	99 *6.3*	–		•	138	•	18
7	3	•	71.5 *10.5*	–		•	111.5	•	18
8	3	•	77 *4.5*	•	83	•	114	•	18
1	5	•	53.5 *6.0*	–		•	112.5	•	18
2	5	•	88 *6.6*	–		•	130	•	18
4	5	•	81 *61*	–		•	118	•	18
8	5	•	70 *5.1*	•	85	•	108	•	18



R	K		I	Ref.
n–C_5H_{11}	•	35 *5.14*	•	18 bis

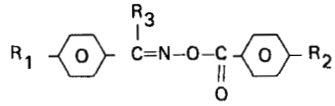


R	K	S_A		N		I	Ref.
n–C_4H_9–	•	65.8 *5.0*	–	•	107.3	•	19
n–C_5H_{11}–	•	72.2 *5.5*	–	•	117	•	19
n–C_6H_{13}–	•	59.4 *5.3*	–	•	102.9	•	19
n–C_7H_{15}–	•	42.3 *6.1*	–	•	110.3	•	19
n–C_8H_{17}–	•	61.8 *7.7*	–	•	101.3	•	19
n–$C_7H_{15}O$–	•	66.5 *6.2*	–	•	127.6	•	19
n–$C_{10}H_{21}O$–	•	62.8	•	[57.6] *0.001*	•	73.6	•	230
n–$C_{11}H_{23}O$–	•	70	•	[70.1] *0.043*	•	73.7	•	230
n–$C_7H_{15}COO$–	•		71.5 *5.9*		•	132.5	•	19



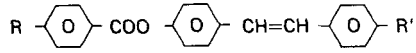
R	K	N		I	Ref.
n–C_4H_9–	•	91.1 *4.2*	•	121.1	•	19
n–C_5H_{11}–	•	88.1 *5.1*	•	126.6	•	19
n–C_6H_{13}–	•	79 *5.2*	•	119.5	•	19
n–C_7H_{15}–	•	72.5 *5.1*	•	120	•	19

• **Acetophenone oximebenzoates**

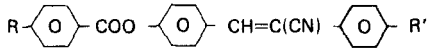


R_1	R_2	R_3	K		N		I	Ref.
n–C_4H_9	n–C_7H_{15}	CH_3	•	35 *4.57*	•	56	•	198
n–C_5H_{11}	n–C_7H_{15}	CH_3	•	41 *4.45*	•	69	•	198
n–C_6H_{13}	n–C_7H_{15}	CH_3	•	33 *5.31*	•	64	•	198
n–C_5H_{11}	n–C_6H_{13}	CH_3	•	38 *4.45*	•	63	•	198
n–C_5H_{11}	n–$C_5H_{11}OCOO$	C_2H_{15}	•	43 *3.16*	•	[34]	•	198

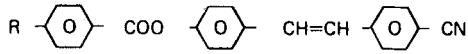
• **Benzoyloxystilbenes**



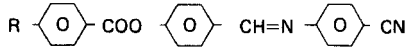
R	R'	K_1	K_2	S_G	S_F	S_C	N	I	Ref.
CH_3O-	H	–	• 182 *5.88*	–	–	–	• 225 *0.09*	•	5
C_8H_7O-	H	• 110 *3.08*	• 125 *7.48*	–	–	–	• 183 *0.16*	•	5
C_3H_7-	$-C_5H_{11}$		• 114 *2.53*	–	–	• 114	• 240	•	20
$C_5H_{11}-$	$-C_5H_{11}$	•	• 100 *4.21*	• 118 *0.22*	• 120 *0.38*	• 136	• 228	•	20
$C_6H_{13}-$	$-C_5H_{11}$	–	• 99 *4.31*	• 114 *0.11*	• 120 *0.27*	• 142 *0.41*	• 219	•	20
$C_7H_{15}-$	$-C_5H_{11}$	–	• 106 *4.42*	• 108	• 116.5	• 149	• 216	•	20
$C_8H_{17}-$	$-C_5H_{11}$	–	• 100 *3.62*	• [100]	• 118 *0.18*	• 155	• 210	•	20



R	R'	K_1	K_2	N	I	Ref.
CH_3O-	H	–	• 143	• 181	•	5
$C_8H_{17}O-$	H	–	• 105 *10.21*	• 165 *0.64*	•	5
$C_8H_{17}O-$	–Br	• 107 *2.37*	• 130 *6.70*	• 214 *0.05*	•	5
CH_3O-	–Br	–	• 197 *7.61*	• 268 *0.11*	•	5

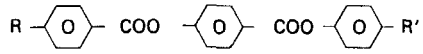


R	K	S_A	N	S_A	N	I	Ref.
$C_8H_{17}O-$	• 94	• 96.4 *0.0088*	• 138.9 *0.0045*	• 247 *0.0088*	• 283	•	181

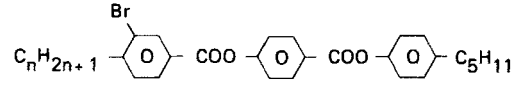


R	K	N	S_A	N	I	Ref.
$C_8H_{17}O-$	• 107.8 107 *9.489*	• 152.5-155 152-154 *0.0042*	• 196-198.5 196-199 *0.0036*	• 254.5 253.8 *0.334*	•	194

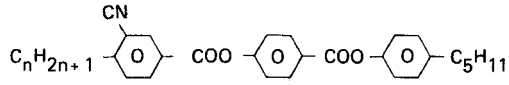
•Phenyl-benzoyloxybenzoates



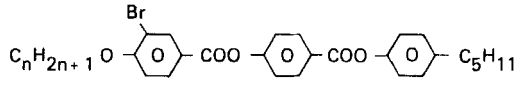
R	R′	K		S_C		S_A		N		I	Ref.
CH_3O-	$-C_4H_9$	•	107 *7.0*	–		–		•	226.5	•	15
C_4H_9-	$-C_4H_9$	•	89 *5.7*	–		–		•	178	•	15
CH_3O-	$-C_5H_{11}$	•	88.5 *6.9*	–		–		•	224	•	15
$C_5H_{11}-$	$-C_5H_{11}$	•	82.5 *6.3*	–		–		•	180.5	•	15
$C_8H_{17}O-$	$-OC_8H_{17}$	•	87 *11.9*		145		163 *0.07*	•	189.5 *0.40*	•	22



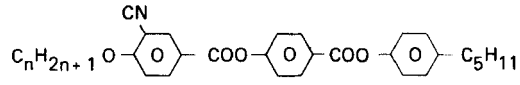
n	K		S_C		N		I	Ref.
3	•	76 *5.6*	–		•	118	•	23
6	•	57 *5.9*	•	[49]	•	117	•	23
7	•	58 *6.1*	•	[50]	•	117	•	23
8	•	57 *5.3*	•	[48]	•	104	•	23



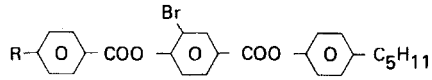
n	K_1		K_2		S_A		N		I	Ref.
1	–		•	113 *6.0*	–		•	123	•	23
3	–	[70]	•	80 *4.8*	•	[76]	•	110	•	23
6	–		•	117 *12.0*	•	[115]	•	120.5	•	23
8	–		•	87 *7.5*	•	120.5	–		•	23



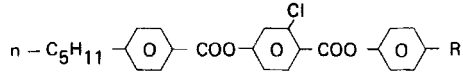
n	K		N		I	Ref.
1	•	125 *6.5*	•	163	•	23



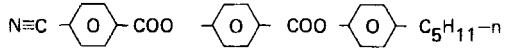
n	K		S_C		S_A		N		I	Ref.
1	•	123 *5.1*	–		–		•	158	•	23
4	•	102 *6.6*	–		•	160	•	170	•	23
8	•	82 *5.1*	•	100	•	167	–		•	23



R	K		N		I	Ref.
$C_6H_{13}-$	•	50 *7.8*	•	108.5	•	15
$C_7H_{15}-$	•	55 *6.7*	•	109	•	15
$C_8H_{17}-$	•	54 *8.5*	•	102.5	•	15
$C_8H_{17}O-$		70 *6.2*		133		15

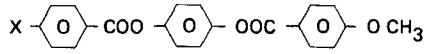


R	K_1		K_2		N		I	Ref.
C_5H_{11}	–		•	39.6 *5.70*	•	123.0 *0.28*	•	167, 168
	•	[37.8] *5.10*	–		•	123.0	•	
C_8H_{17}	–		•	39.7 *7.27*	•	102.8 *0.25*	•	168

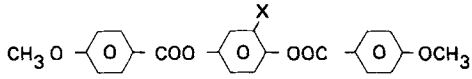


S_A	139 *0.47210*$^{-3}$	N	249	I	Ref. 189

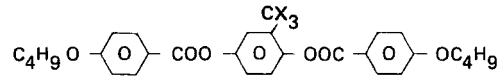
•Dibenzoates of hydroquinone



X	K		N		I	Ref.
H	•	159.0	•	171.4 *0.158*	•	199 b
F	•	155.0	•	249.0 *0.244*	•	199 b
Cl	•	196.1	•	277.8 *0.282*	•	199 b
Br	•	213.1	•	275.6 *0.248*	•	199 b
CH_3	•	204.1	•	269.1 *0.387*	•	199 b
CN	•	181.1	•	321.4 *0.228*	•	199 b
NO_2	•	200,2	•	300.2 *0.192*	•	199 b



X	K		N		I	Ref.
H	•	217	•	301 *0.408*	•	21, 199 a,b
CH_3	•	165.9	•	252.1 *0.529*	•	21
F	•	173.8	•	278.5 *0.404*	•	21
Cl	•	162.0	•	252.4 *0.463*	•	21
Br	•	161.4	•	241.1 *0.487*	•	21
I	•	173.4	•	222.9 *0.493*	•	21

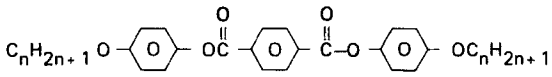


X	K_2		K_1		N		I	Ref.
H(1)	•	50.7 *1.65*	•	115.3 *7.50*	•	206.0 *0.77*	•	220
M(2)	–		•	114.8 *7.48*	•	206.2 *0.74*	•	220
F(1)	–		•	102.1 *8.97*	•	151.8 *0.57*	•	220
F(2)	•	95.6	•	98.4 *8.48*	•	152.2 *0.60*	•	220

(1) Solvent crystallized sample.

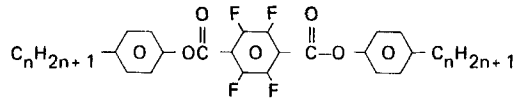
(2) Melt crystallized sample (previously run) one month lapsed after initial run.

•Bisphenyl terephtalate



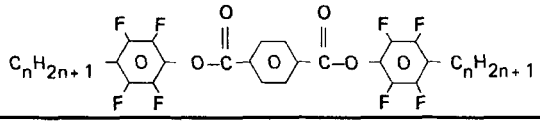
n	K_1	K_2	S_1	S_2	N	I	Ref.
1	–	• 210.6	–	–	• 287.6 *0.232*	•	21, 199, a
	–	• 209.4 *11.16*	–	–	• 279.5 *0.235*	•	177
2	–	• 220.3 *13.100*	–	–	• 282.0 *0.358*	•	174
3	–	• 205	–	–	• 240	•	177
4	–	• 186.6 *9.751*	–	–	• 233.9 *0.288*	•	177
5	• 137.3	• 162.5 *1.586*	175.1 *8.860*	• 211.2	– *0.227*	•	177
6	–	• 161.2 *8.640*	• 181.0	• 208.0 *0.310*	–	•	177

•Perfluoro terephtalate



n	K	N	I	Ref.
5	• 92.5 *7.4*	• 122	•	182

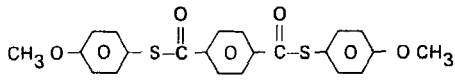
• **Bis para n alkyl fluorophenyl terephtalate**



n	K		N		I	Ref.
1	•	171 *6.8*	•	[127]	•	182
2	•	135 *7.8*	•	[∿40] (1)	•	182
4	•	112 *7.6*	•	[∿15] (1)	•	182

(1) Extrapolated values obtained from binary phase diagrams.

• **Thiobenzoates**



K		N		I	Ref.
	216.7		320.2 *0.356*		199