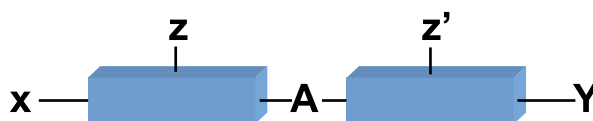


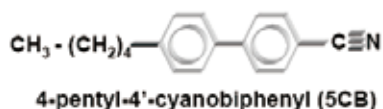
LCD Materials

Liquid crystals (LCs) are a state of matter that has properties between those of a conventional liquid and those of a solid crystal. For instance, an LC may flow like a liquid, but its molecules may be oriented in a crystal-like way. Generally, the LC molecules consist of long chain moiety, rigid core and readily polarized functional groups. The liquid crystal phases are classified as nematic, smectic or cholesteric phases. The regularity of these molecular arrangements is reflected in the anisotropic properties of permittivity and refractive index. Therefore, it is possible to control the optical property of the liquid crystal by changing the molecular arrangement electrically. The response speed of liquid crystals is fast due to the fluidity properties, and phase changes can easily occur both electrically and by heating. The application of liquid crystals for display purposes originated in HeilMeier when he and his co-workers (1968) reported using light scattering in the display material.* Since then, Schiff base and azoxybenzene types were also developed; both have shown liquid crystalline state at room temperature. These developments have fundamentally contributed to today's prosperity within the liquid crystal industry.

General structure of liquid crystals

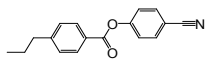


- Aromatic or saturated ring core
- X & Y are terminal groups
- A is linkage between ring systems
- Z and Z' are lateral substituents



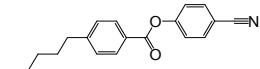
* G. H. HeilMeier, L. A. Zanoni, L. A. Barton, *Proc. IEEE.*, 1968, 56, 1162.

LT-L0001 [56131-49-8]



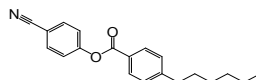
4-cyanophenyl-4'-propylbenzoate

LT-L0002 [49763-64-6]



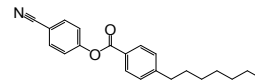
4-cyanophenyl-4'-pentylbenzoate

LT-L0003 [50793-85-6]



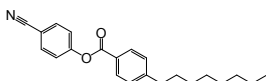
4-cyanophenyl-4'-hexylbenzoate

LT-L0004 [38690-76-5]



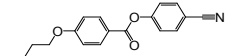
4-heptylbenzoic acid
4-cyanophenyl ester

LT-L0005 [50793-86-7]



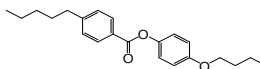
4-cyanophenyl-4'-octylbenzoate

LT-L0006 [114482-57-4]



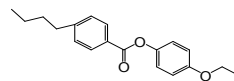
4-(3-butenyloxy)benzoic acid
4-cyanophenyl ester

LT-L0007 [51128-24-6]



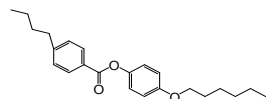
4-amyloxybenzoic acid
4-butoxyphenyl ester

LT-L0008 [62716-65-8]



4-butylbenzoic acid 4-ethoxyphenyl
ester

LT-L0009 [38454-28-3]



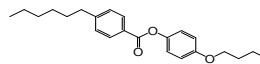
4-butylbenzoic acid
4-(hexyloxy)phenyl ester

LT-L0010 [50802-52-3]



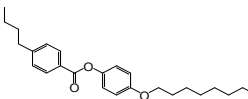
4-amyloxybenzoic acid
4-hexyloxyphenyl ester

LT-L0011 [38454-21-6]



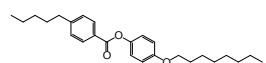
4-butylbenzoic acid 4-*n*-
hexylbenzoate

LT-L0012 [42815-59-8]



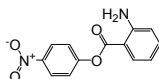
4-butylbenzoic acid 4-*n*-
octyloxyphenyl ester

LT-L0013 [50649-64-4]



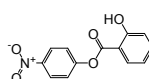
4-amyloxybenzoic acid 4-*n*-
octyloxyphenyl ester

LT-L0014 [19176-60-4]



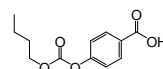
2-aminobenzoic acid
4-nitrophenyl ester

LT-L0015 [17374-48-0]



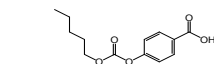
Salicylic acid 4-nitrophenyl
ester

LT-L0016 [14180-12-2]



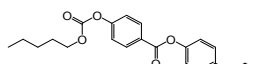
4-carboxyphenyl butyl
carbonate

LT-L0017



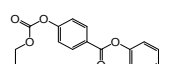
4-carboxyphenyl amyl
carbonate

LT-L0018 [33926-46-4]



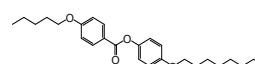
4-(4-ethoxyphenoxy)carbonyl
phenylpentyl carbonate

LT-L0019 [33926-25-9]



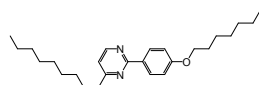
Ethyl 4-(4-
ethoxyphenoxy)carbonyl
phenyl carbonate

LT-L0020 [50649-44-0]



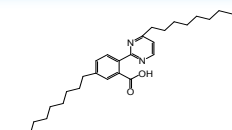
4-octyloxyphenyl-4-*n*-
pentyloxybenzoate

LT-L0021 [57202-57-0]



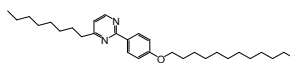
2-(4-(4-*n*-heptyloxyphenyl)-4-*n*-
nonyl-pyrimidine)

LT-L0022 [58415-91-1]



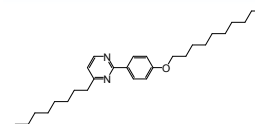
2-(4-(4-*n*-hexylcarboxyphenyl)-4-*n*-
octyl-pyrimidine)

LT-L0023 [57202-54-7]



2-(4-(4-*n*-dodecyloxyphenyl)-4-*n*-
octyl-pyrimidine)

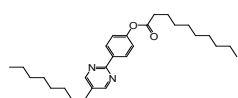
LT-L0024 [57202-52-5]



2-(4-(4-*n*-decyloxyphenyl)-4-*n*-
octyl-pyrimidine)

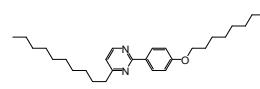
Materials are used by qualified for testing and research only, there are not guaranteed in patent contention by customer use.

LT-L0025 [58415-94-4]



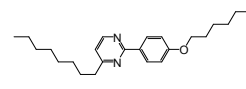
4-(5-octyl-2-pyrimidinyl)phenyl decanoate

LT-L0026 [57202-62-7]



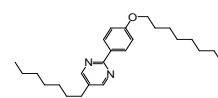
2-(4-n-octyloxyphenyl)-4-n-decyl-pyrimidine

LT-L0027 [57202-48-9]



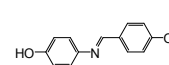
2-(4-n-hexyloxyphenyl)-4-n-octyl-pyrimidine

LT-L0028 [57202-39-8]



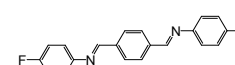
2-(4-n-octyloxyphenyl)-5-n-heptyl-pyrimidine

LT-L0050 [3230-39-5]



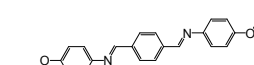
4-(4-methoxybenzylidene)-4-hydroxyaniline

LT-L0051 [17866-84-1]



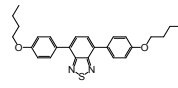
Terephthalbis(4-fluoroaniline)

LT-L0052 [17696-60-5]



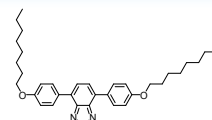
Terephthalbis(p-phenetidine)

LT-L0030 [503862-12-2]



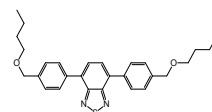
4,7-bis[4-(butoxyphenyl)-2,1,3-benzothiadiazole]

LT-L0031 [503862-09-7]



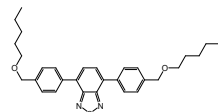
4,7-bis[4-(octyloxyphenyl)-2,1,3-benzothiadiazole]

LT-L0032 [503862-20-2]



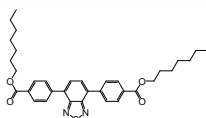
4,7-bis[4-(butoxymethyl)phenyl]-2,1,3-benzothiadiazole

LT-L0033 [503862-21-3]



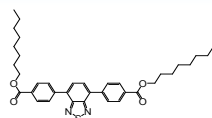
4,7-bis[4-[(pentyloxy)methyl]phenyl]-2,1,3-benzothiadiazole

LT-L0034 [732268-79-0]



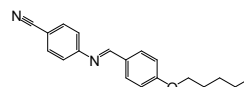
Diheptyl 4,4'-(benzo[c][1,2,5]thiadiazole-4,7-diyl) dibenzoate

LT-L0035 [732268-80-3]



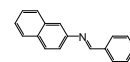
Dioctyl 4,4'-(benzo[c][1,2,5]thiadiazole-4,7-diyl) dibenzoate

LT-L0036 [37075-25-5]



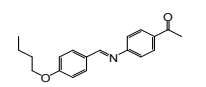
4'-(amyloxy)benzylidene-4-cyanoaniline

LT-L0037 [891-32-7]



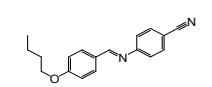
Benzylidene-2-naphthylamine

LT-L0038 [17224-18-9]



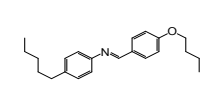
N-(4-butoxybenzylidene)-4-acetylaniline

LT-L0039 [36405-17-1]



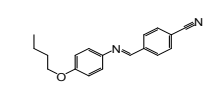
4'-butoxybenzylidene-4-cyanoaniline

LT-L0040 [39777-05-4]



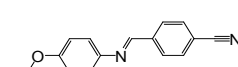
4'-butoxybenzylidene-4'-pentylaniline

LT-L0041 [55873-21-7]



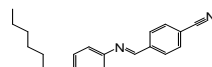
4'-cyanobenzylidene-4-butoxyaniline

LT-L0042 [32148-02-4]



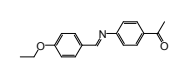
4'-cyanobenzylidene-4-ethoxyaniline

LT-L0043 [54842-56-7]



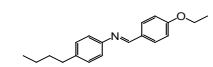
4'-cyanobenzylidene-4-hexyloxyaniline

LT-L0044 [17224-17-8]



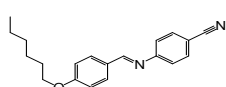
4'-ethoxybenzylidene-4-acetylaniline

LT-L0045 [29743-08-6]



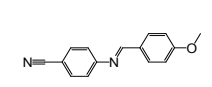
4'-ethoxybenzylidene-4-butylaniline

LT-L0046 [35280-78-5]



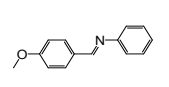
4'-hexyloxybenzylidene-4-cyanoaniline

LT-L0047 [13036-19-6]



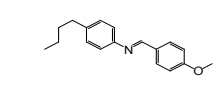
4-[(4-methoxybenzylidene)amino] benzonitrile

LT-L0048 [836-41-9]



N-(4-methoxybenzylidene) aniline

LT-L0049 [26227-73-6]



N-(4-ethoxybenzylidene)-4-butylaniline

Materials are used by qualified for testing and research only, there are not guaranteed in patent contention by customer use.

Materials are used by qualified for testing and research only, there are not guaranteed in patent contention by customer use.