

Bent-core liquid crystals: polar order, superstructural chirality and spontaneous desymmetrisation in soft matter systems

R. Amaranatha Reddy

Carsten Tschierske

Institute of Organic Chemistry, Martin-Luther University Halle, Kurt-Mothes Str. 2, D-06120 Halle, Germany.

Email: amaranatha.reddy@chemie.uni-halle.de; carsten.tschierske@chemie.uni-halle.de; Fax: +49 0345 55 27 346

Table S1. Summary of compounds exhibiting B7 subtype mesophases

Comp.	n^a	Medium angle refl.	2D	U^m -Sm	Sm	Switching	Phase ^b
19 ⁹⁰	16	no	+	–	–	AF	SmCP _{AF} (B7 ^l)
32b ^{72c,112,114} (Table 4)	8–12	no	–	–	+	–	U ^m SmC _s P _F ^{[*]c}
33c ¹¹⁵ (Table 5)	9–14	no	+	–	–	FE	SmCP _{FE} (B7 ^l)
33d ¹¹⁵ (Table 5)	9–14	no	+	–	–	FE/ AF ^e	SmCP _{FE/AF} (B7 ^l)
34d ²⁰¹ (Table 6)		yes	+	–	–	FE	B7P _{FE} ^{[*]d}
35a ^{104b}	6–12	yes	+	–	–	no	B7
35b ^{104b} (Table 7)	8, 12	yes	+	–	–	no	B7
35c ^{104b} (Table 7)	8, 12	yes	–	–	+	no	B7
36 ^{120c}	6–18	yes	+			no	B7
38d ¹²¹ (Table 9)	6–12	no	–	–	+	?	SmCP (B7 ^l)
39c ¹²² (Table 10)	8–15	no	–	–	+	no	SmCP _A (B7 ^l)
39d ¹²² (Table 10)	12	no	–	–	+	no	SmCP _A (B7 ^l)
39e ⁶³ (Table 10)	12,13	no	–	–	+	no	SmCP _A (B7 ^l)
49 ^{114a} (Table 13)	8–10	no	–	–	+	AF	U ^m SmC _s P _F ^{[*] 1}
55 ¹²³	12–16	^{2g}	^{2g}	^{2g}	^{2g}	no	B7 ^l
65 ¹²⁸	9	no		+		FE	U ^m SmC _s P _F
85 ^{120b} (Fig. 46)	10–18	yes	+	–	–	no	B7
86 ^{120c} (Fig. 47)	12–18	no	–	–	+	FE/ AF ^e	SmCP _{FE/AF} (B7 ^l)
87 ^{120d} (Fig. 48)	10–14	yes	+	–	–	no	B7
87 ^{120d} (Fig. 48)	16–20	yes	+	–	–	no, AF	B7, B7P _{AF}
88 ^{120d}	9–18	yes	+	–	–	no	B7
89 ^{120b}	9–18	yes	+	–	–	no	B7
90 ^{120c}	11–18	no	–	–	+	FE/ AF ^e	SmCP _{FE/AF} (B7 ^l)
91 ²⁰⁰	12–18	no	+	–	–	?	USmCP (B7 ^l)
92 ¹²⁸	10* ^f	no		+		FE	U ^m SmC _s P _F
93 ¹²⁸	10	no		+		?	U ^m SmC _s P _F

^a The range given does not necessarily mean that all homologues were synthesised or investigated; ^b abbreviations: P_{AF/FE} indicate that an AF or FE switching behaviour is observed for this mesophase, whereas P_{A/F} indicates a AF or FE phase structure in the ground state, (B7–lk = B7–like textural features (helical filaments, etc.) can be observed, U^mSmC_sP_F = modulated–undulated SmC_sP_F phase, [*] indicates a dark conglomerate mesophase; ^c SmCG structure was proposed first^{72c}; ^d occurs upon cooling from a SmCPA^[*] phase, therefore the typical helical filaments of the natural B7–type phases cannot be observed; ^e depending on the applied voltage; ^f branched chain, see formula; ^g no data given