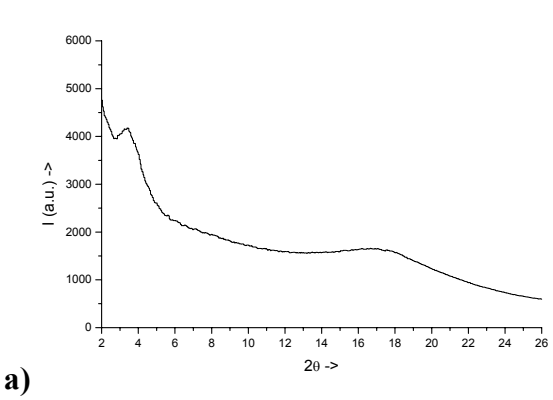
Experimental conditions for X-ray scattering

Powder X-ray investigations were carried out with a Guinier film camera and a Guinier Goniometer (Huber Diffraktionstechnik, Germany). Samples in glass capillaries (∅ 1 mm) in a temperature-controlled heating stage, quartz-monochromatized CuK_α radiation, 30 to 60 min exposure time, calibration with the powder pattern of $Pb(NO_3)_2$. 2D patterns for aligned samples on a glas plate on a temperature-controlled heating stage (alignement at the sample – glas or at the sample – air interface) were recorded with a 2D detector (HI-STAR, Siemens) using CuK_α radiation monochromatized by a Ni filter.

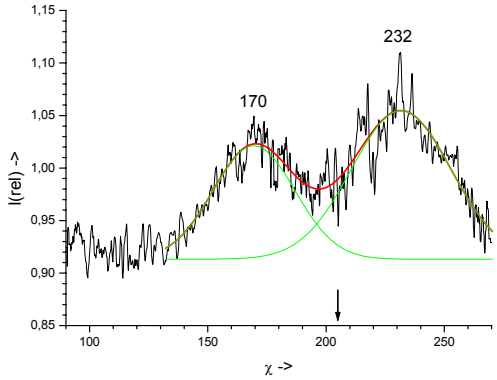
Table S1. X-ray data from Guinier powder patterns (θ_{obs}: experimental scattering angle; d_{obs}: experimental and d_{calc}: calculated d spacing; *hk/n*: asigned indices for Col_{hex} phases / order of reflection for SmA phases, Parameter used: Lattice parameters or *d* values used to calculate d_{calc} with an error of the calculated parameters in the order of 0.1 nm)

Compound	*T* (°C)	Phase	θ_{obs} (°)	d_{obs} (nm)	*hk/n*	d_{calc} (nm)	d_{obs}- d_{calc} (nm)	Parameter used (nm)
9b	170	Col_{hex}	1.816	2.43	10	2.43	0.00	*a* = 2.81
	150		1.831	2.41	10	2.43	-0.02	*a* = 2.81
			3.120	1.41	11	1.40	0.01	
			3.625	1.22	20	1.21	0.01	
	130		1.837	2.40	10	2.42	-0.02	*a* = 2.80
			3.150	1.40	11	1.40	0.00	
			3.625	1.22	20	1.21	0.01	
	110		1.844	2.39	10	2.41	-0.02	*a* = 2.78
			3.162	1.40	11	1.39	0.01	
			3.650	1.21	20	1.20	0.01	
9a	72	?	1.871	2.36				
11a	102	SmA	1.414	3.12	1	3.13	-0.01	*d* = 3.13
			2.813	1.57	2	1.56	0.01	
	92		1.399	3.16	1	3.16	0.00	*d* = 3.16
			2.800	1.58	2	1.58	0.00	
11b	130	SmA	1.374	3.21	1			*d* = 3.21
	120		1.365	3.23	1			*d* = 3.23
	110		1.345	3.28	1			*d* = 3.28

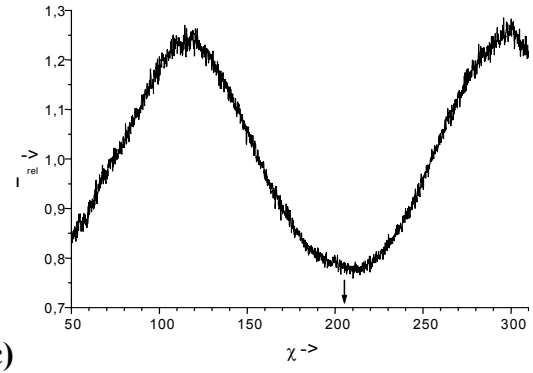
Figure S1. The inner diffuse scattering in the SmA phase of **11b**: **a)** diffuse X-ray scattering scanned along a conical segment ($\Delta\chi$ = 60°) of the 2D-pattern about a line perpendicular to the layer normal, **b)** distribution of the intensity integrated over θ from 3.2 to 3.9° (d ≈ 2.50 nm) showing a fit by two Gaussian functions and the corresponding position of the intensity maxima, **c)** distribution of the intensity for the outer diffuse scattering integrated over θ from 7.5 to 10.5° (d ≈ 0.50 nm, maxima at about 116 and 298°) for comparison, [**b)** and **c)**: relative intensity calculated by I_{rel} = I(120 °C) / I(isotropic liquid). The black arrow points to the position of the intensity maximum for the layer reflections.]



a)



b)



c)