Supplemental Information

Table S1. Surfactants tested in a pre-test for 50 h at room temperature.

Surfacant, chemical name	Trade name (e.g.)	Molecular Weight	Classification	HLB
Sodium di(2-ethylhexyl)sulfosuccinate	Aerosol® OT 100%	445	anionic	n.a.
Benzylalkoniumchloride	Benzylalkoniumchloride	<400	cationic	n.a.
Sodiumolefin(C14-C16)sulfonate	Bio Terge® AS-40	315	anionic	n.a.
Polyoxyethylene(23)dodecyl ether	BRIJ® 35	1200	non-ionic	16,9
Polyoxyethylene(9)lauryl alcohol	Chemal® LA-9	583	non-ionic	13,3
Polyethoxylated (35) castor oil	Cremophor® EL	N/A	non-ionic	12-14
SodiumN-oleyl-N-mehtyltaurate	Gerapon® T-77	425	anionic	n.a.
Ocytlyphenolethoxylate (1.2)	IGEPAL® CA210272	272	non-ionic	4,6
Amine alyklybenzenesulfonate	Ninate® 411	385	anionic	n.a.
Poly(oxyethylene-co-oxypropylene)block copolmyer	Pluronic® L64	2900	non-ionic	12-18
Poly(oxyethylene-co-oxypropylene)block copolymer	Pluronic® F68	8400	non-ionic	>24
Polyethoxylate(20)oleyl alcohol	Rhodasurf® ON-870	1148	non-ionic	n.a.
Polydimethylsiloxanemehtylethoxylate	Silwet® L7600	4000	non-ionic	13-17
Sodium polyoxyethylene(1)laurylsulfate	Standapol® ES-1	346	anionic	n.a.
p-Isononylphenoxy-poly(glycidol)	Surfactant® 10G	N/A	non-ionic	12,4
2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate	Surfynol® CT291	<850	non-ionic	13-20
2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate(10)	Surfynol® 465	<850	non-ionic	13
2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate(30)	Surfynol® 485	<1800	non-ionic	17
Ethylenediaminealkoxylate block copolymer	Tetronic® 1307	18600	amphoter	>24
Octylphenoxypolyethoxy(9-10)ethanol	Triton® X-100	625	non-ionic	13,5
Octylphenoxypolyethoxy(30)ethanol	Triton® X-305	1526	non-ionic	17,3
Polyoxyethelene (20) sorbitanmonolaurate	Tween® 20	<600	non-ionic	16,7
Polyoxyethelene (20) sorbitanmonolaurate	Tween® 80	1310	non-ionic	15
Telomer B monoether with Polyethyleneglycol	Zonyl® FSN 100	≈ 950	non-ionic	n.a.

n. a. = not available

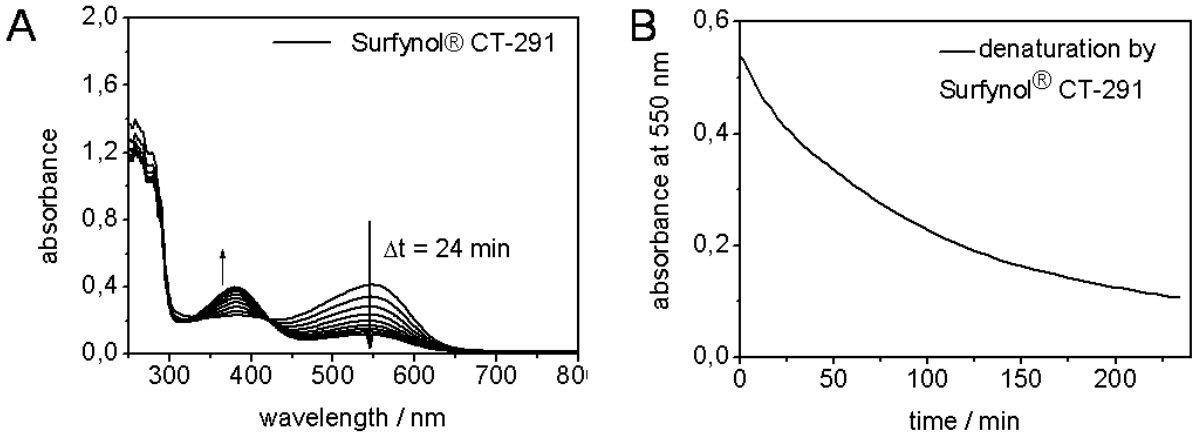

Figure S1. Example of a typical surfactant which causes rapid denaturation. In 1% Surfynol® CT-291 solution PM denauturates nearly complete within 4 h at RT. A) UV-Vis spectra taken every 24 min. B) Decreasing absorption (at 570 nm) of PM over time.

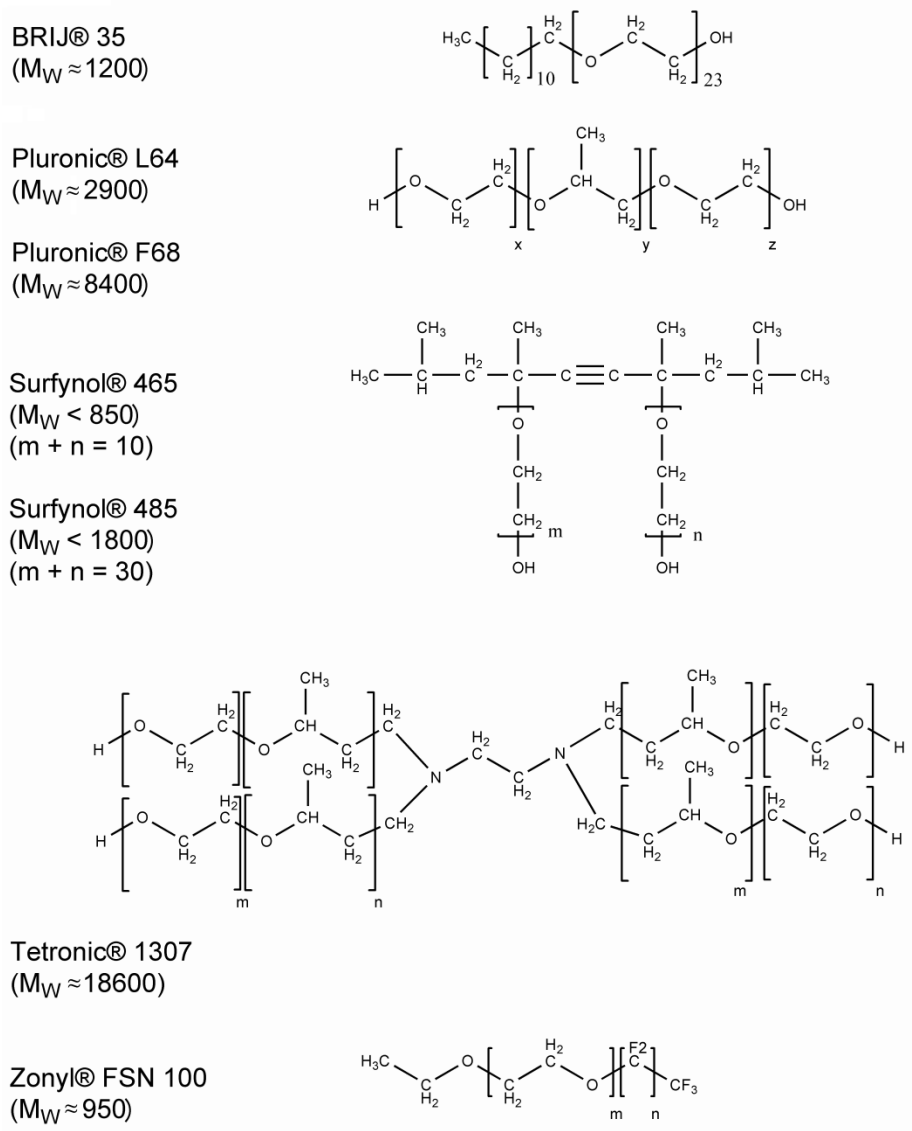

Figure S2. Chemical structure of the five selected surfactants which passed the pre-test as preserving the properties of PM at room temperature. BRIJ® 35 [Polyoxyethylenedodecyl ether], Pluronic® F68 [Poly(oxyethylene-co-oxypropylene)block copolymer], Surfynol® 485 [(2,4,7,9-Tetramethyl-5-decyne-4,7-diol ethoxylate], Tetronic® 1307 [Ethylenediamine-alkoxylate block copolymer], Zonyl® FSN 100 [(Telomer B monoether with Polyethylene glycol)].

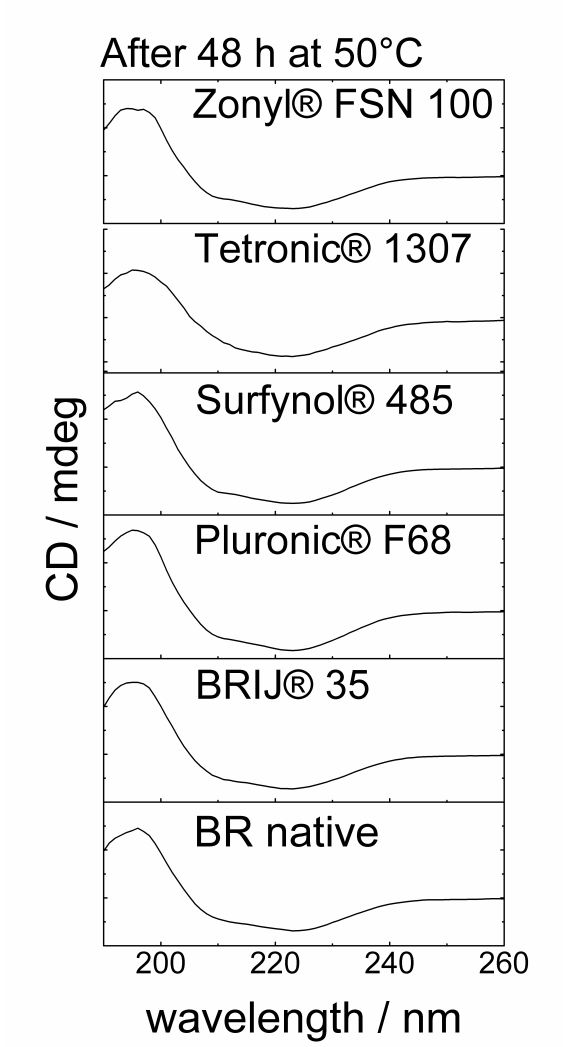

Figure S3. Preservation of the α-helical motif in BR in the presence of different surfactants. The alpha helix motif even remains intact after 48 h of heating at 50°C in presence of the surfactants named.

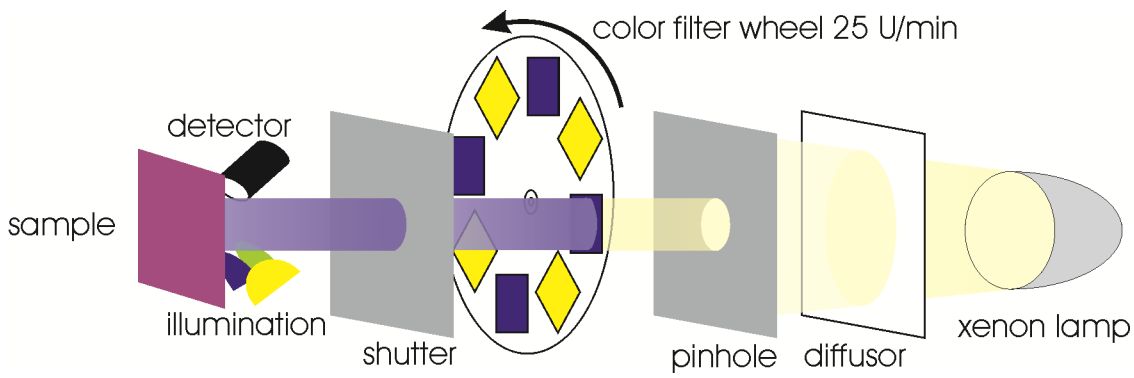

Figure S4. Scheme of custom-made system for analyzing the photochromic properties of PM inkjet prints. The sample is illuminated with blue and yellow light in alternating mode thus switching between the two photochromic states of BR. The reflection of the purple B-state and the yellow M-state is analyzed and the photochromic properties of PM inkjet prints is determined as a function of switching cycles.