

Supplementary Materials: Preparation of Co-Amorphous Systems by Freeze-Drying

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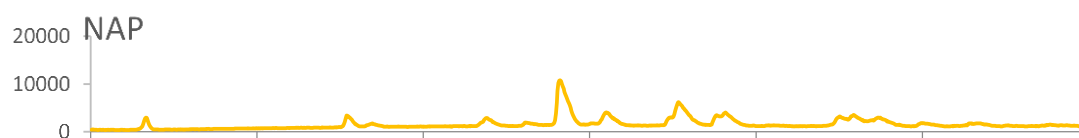
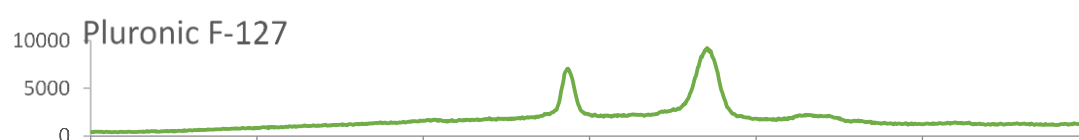
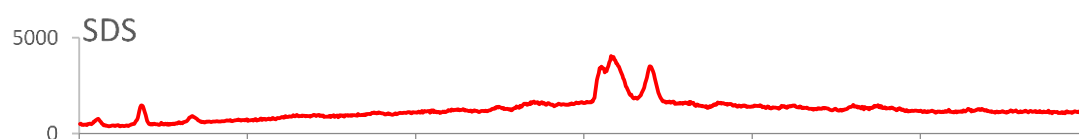
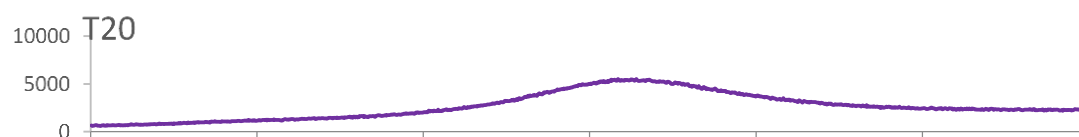
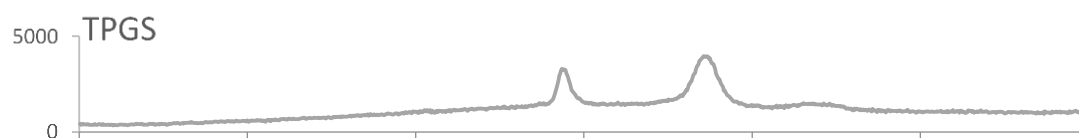
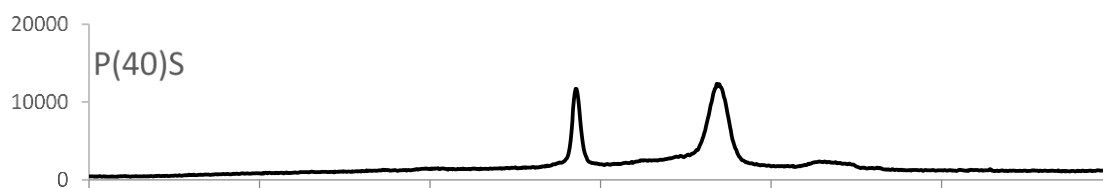
Table S1. of different APIs in combination with DET and AA, only NAP showed an improved dissolution behavior in the combination with the AA ARG, therefore NAP was used for further investigations.

Solvent		Carbamazepin	Carvedilol	Naproxen
SDS	+ PEG	No	No	No
Tween 20	+ PEG	No	No	No
TPGS	+ PEG	No	No	No
Pluronic F127	+ PEG	No	No	No
+ Amino acid in H ₂ O		-	-	Yes (with ARG)
SDS + AA		No	No	-
Tween 20 + AA		No	No	Yes (with ARG)
TPGS + AA		No	No	Yes (with ARG)
Pluronic F127		No	No	-
Ansätze mit Urea		No	No	No

Table S2. Overview of all compositions freeze-dried for further investigations.

Name	API	Conc. (w/v)	AA	Conc. (w/v)	Surfactant	Conc. (w/v)	pH correction 0.5 M NaOH [μL]
LYS-H ₂ O-med	NAP	1.5 %	LYS	0.95 %	-	-	150
LYS-H ₂ O-high	NAP	2.5 %	LYS	1.58 %	-	-	100
LYS-SDS-low	NAP	1.5 %	LYS	0.95 %	SDS	0.9 %	100
LYS-SDS-med	NAP	1.5 %	LYS	0.95 %	SDS	1.8 %	100
LYS-SDS-high	NAP	2.5 %	LYS	1.58 %	SDS	3.0 %	100
LYS-P40S-low	NAP	1.5 %	LYS	0.95 %	P40S	0.9 %	200
LYS-P40S-med	NAP	1.5 %	LYS	0.95 %	P40S	1.8 %	100
LYS-P40S-high	NAP	2.5 %	LYS	1.58 %	P40S	3.0 %	100
LYS-PF127-low	NAP	1.5 %	LYS	0.95 %	PF127	0.9 %	150
LYS-PF127-med	NAP	1.5 %	LYS	0.95 %	PF127	1.8 %	100
LYS-PF127-high	NAP	2.5 %	LYS	1.58 %	PF127	3.0 %	150
LYS-T20-low	NAP	1.5 %	LYS	0.95 %	T20	0.9 %	100
LYS-T20-med	NAP	1.5 %	LYS	0.95 %	T20	1.8 %	100
LYS-T20-high	NAP	2.5 %	LYS	1.58 %	T20	3.0 %	100
LYS-TPGS-low	NAP	1.5 %	LYS	0.95 %	TPGS	0.9 %	100
LYS-TPGS-med	NAP	1.5 %	LYS	0.95 %	TPGS	1.8 %	100
LYS-TPGS-high	NAP	2.5 %	LYS	1.58 %	TPGS	3.0 %	150
ARG-H ₂ O-med	NAP	1.5 %	ARG	1.13 %	-	-	150
ARG-H ₂ O-high	NAP	2.5 %	ARG	1.89 %	-	-	600
ARG-T20-low	NAP	1.5 %	ARG	1.13 %	T20	0.9 %	100
ARG-T20-med	NAP	1.5 %	ARG	1.13 %	T20	1.8 %	100
ARG-T20-high	NAP	2.5 %	ARG	1.89 %	T20	3.0 %	200

ARG-TPGS-low	NAP	1.5 %	ARG	1.13 %	TPGS	0.9 %	100
ARG-TPGS-med	NAP	1.5 %	ARG	1.13 %	TPGS	1.8 %	100
ARG-TPGS-high	NAP	2.5 %	ARG	1.89 %	TPGS	3.0 %	100
ARG-SDS-low	NAP	1.5 %	ARG	1.13 %	SDS	0.9 %	100
ARG-SDS-med	NAP	1.5 %	ARG	1.13 %	SDS	1.8 %	200
ARG-SDS-high	NAP	2.5 %	ARG	1.89 %	SDS	3.0 %	100
ARG-P40S-low	NAP	1.5 %	ARG	1.13 %	P40S	0.9 %	100
ARG-P40S-med	NAP	1.5 %	ARG	1.13 %	P40S	1.8 %	100
ARG-P40S-high	NAP	2.5 %	ARG	1.89 %	P40S	3.0 %	200
ARG-PF127-low	NAP	1.5 %	ARG	1.13 %	PF127	0.9 %	150
ARG-PF127-med	NAP	1.5 %	ARG	1.13 %	PF127	1.8 %	100
ARG-PF127-high	NAP	2.5 %	ARG	1.89 %	PF127	3.0 %	300



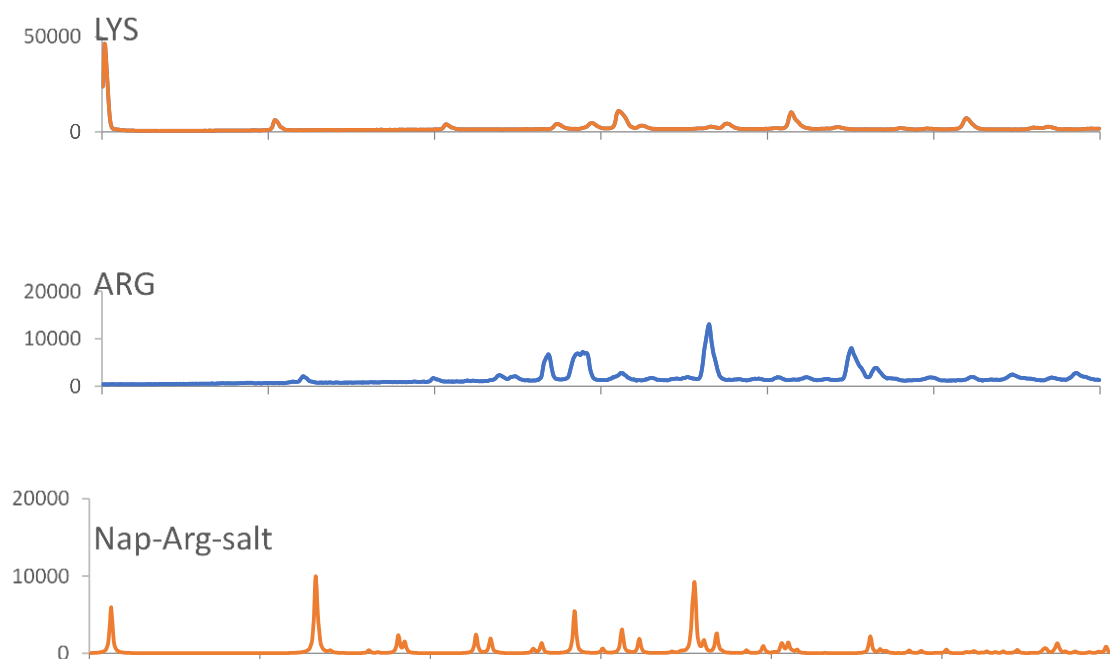
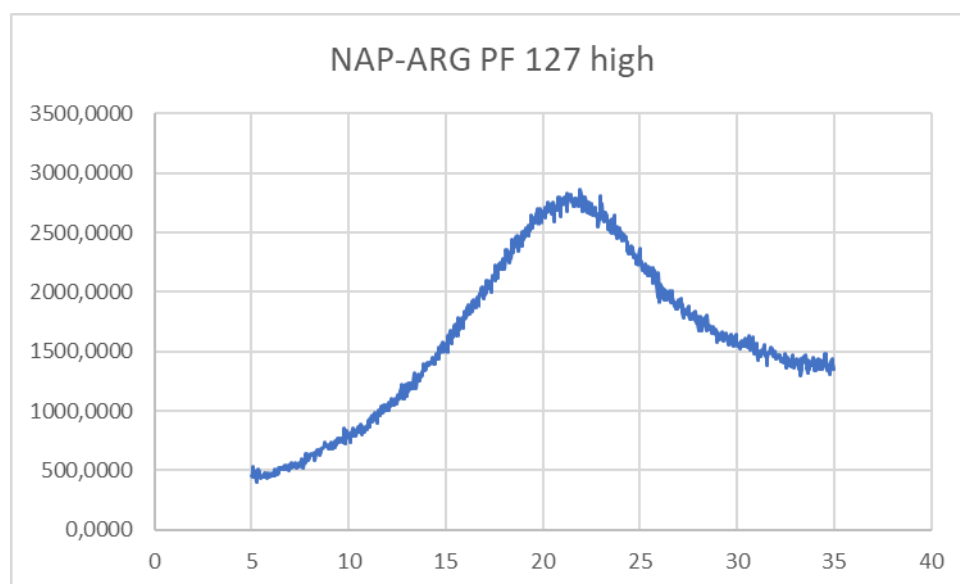
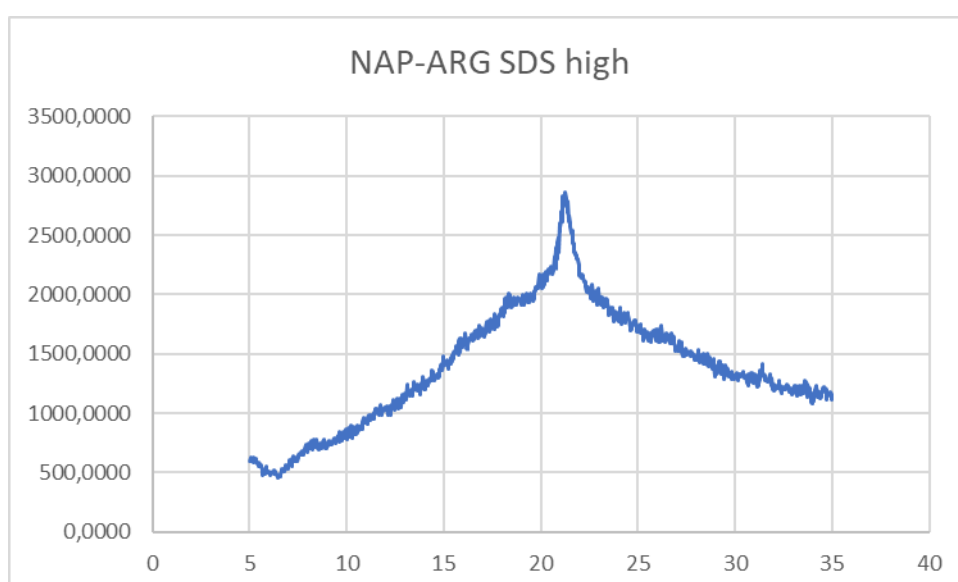
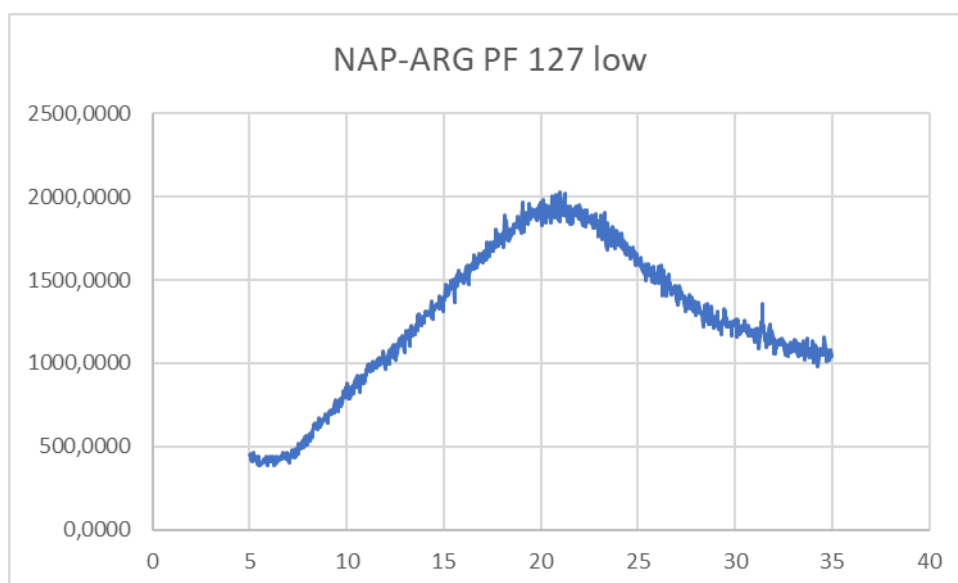
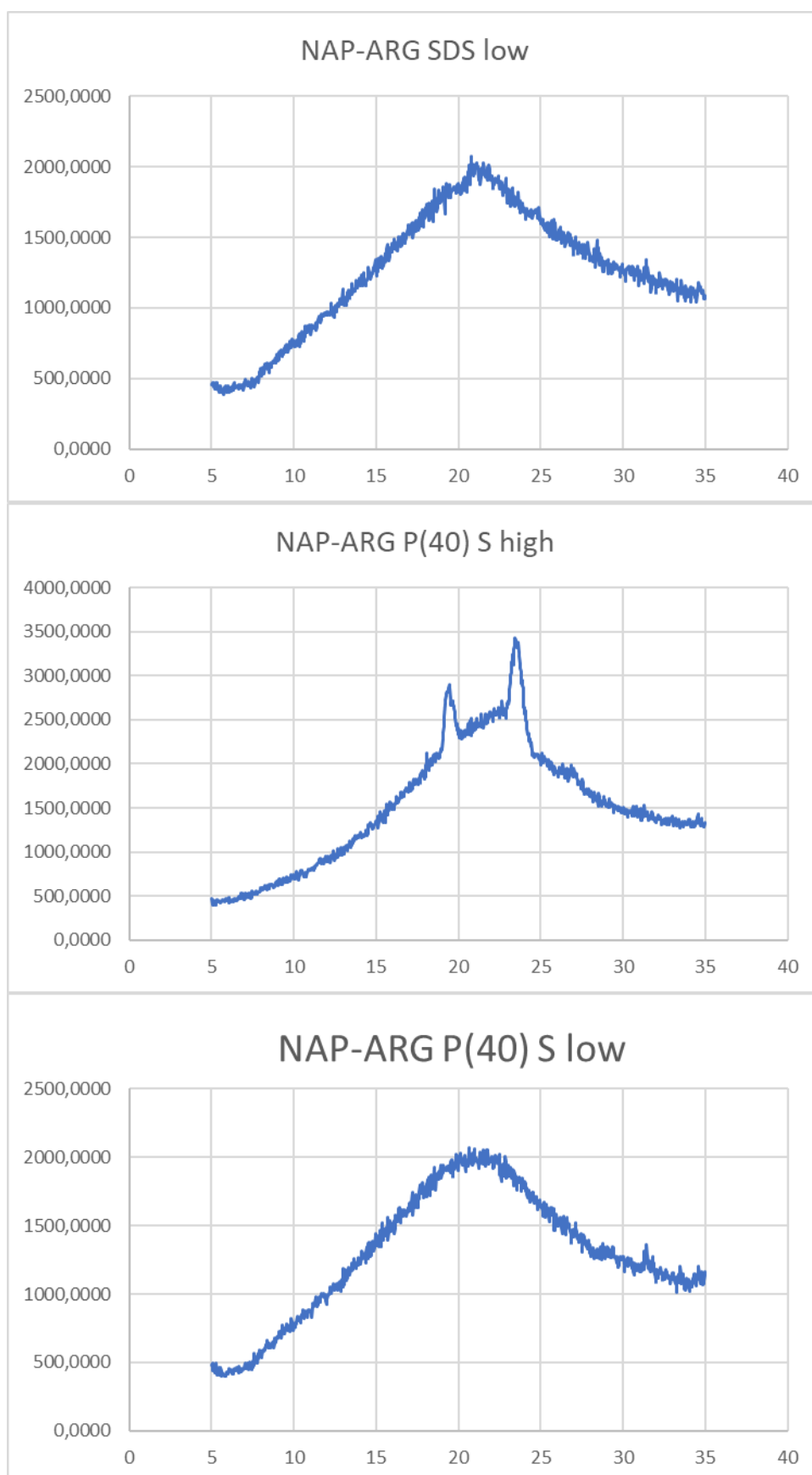
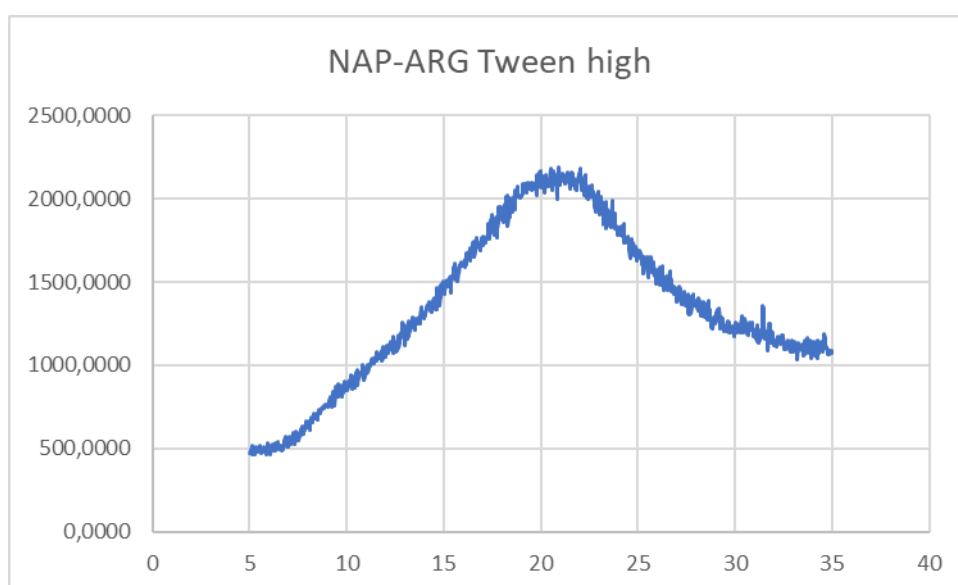
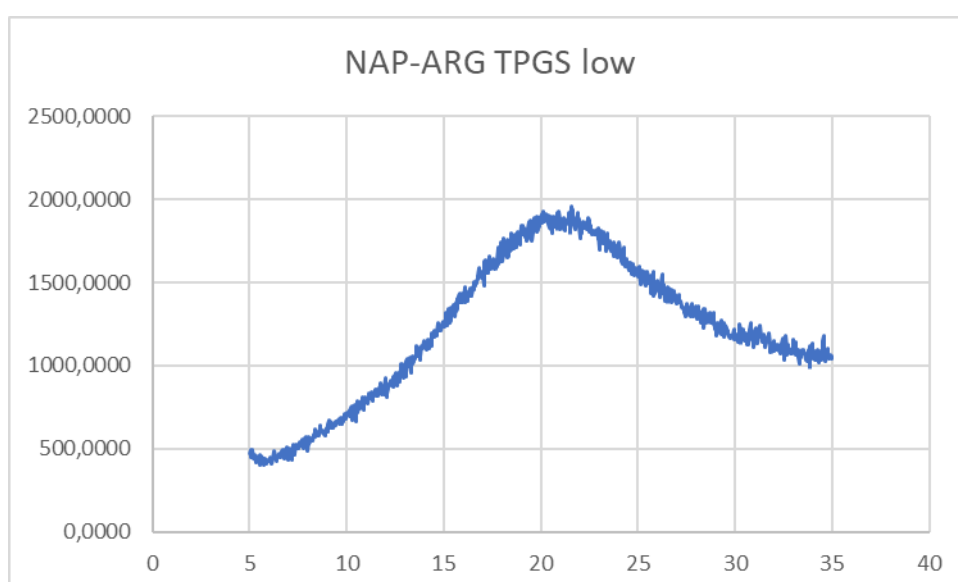
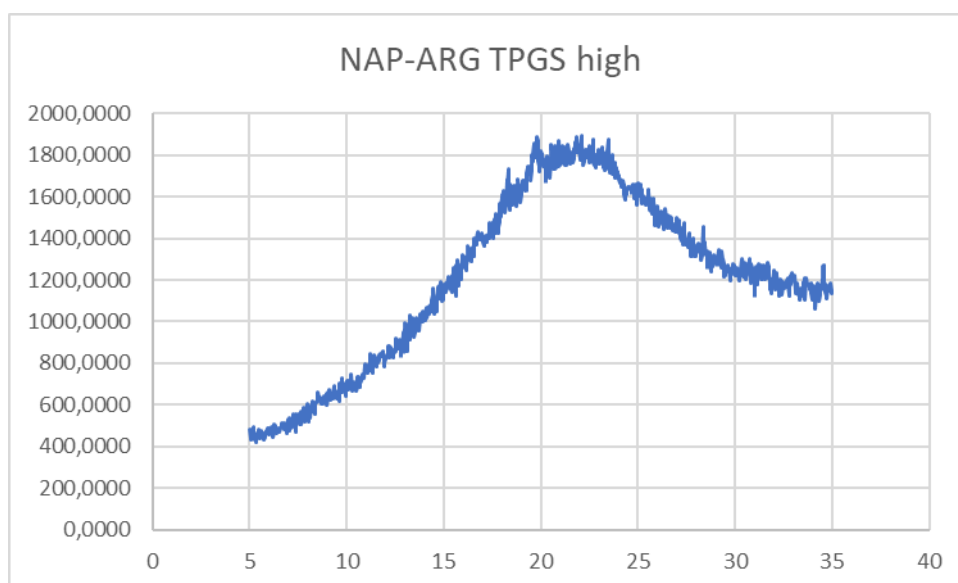


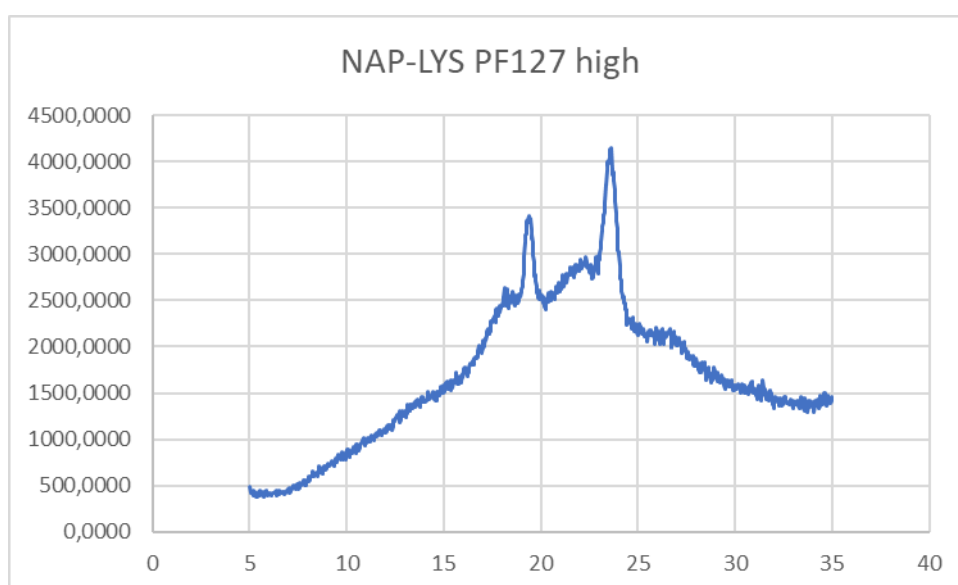
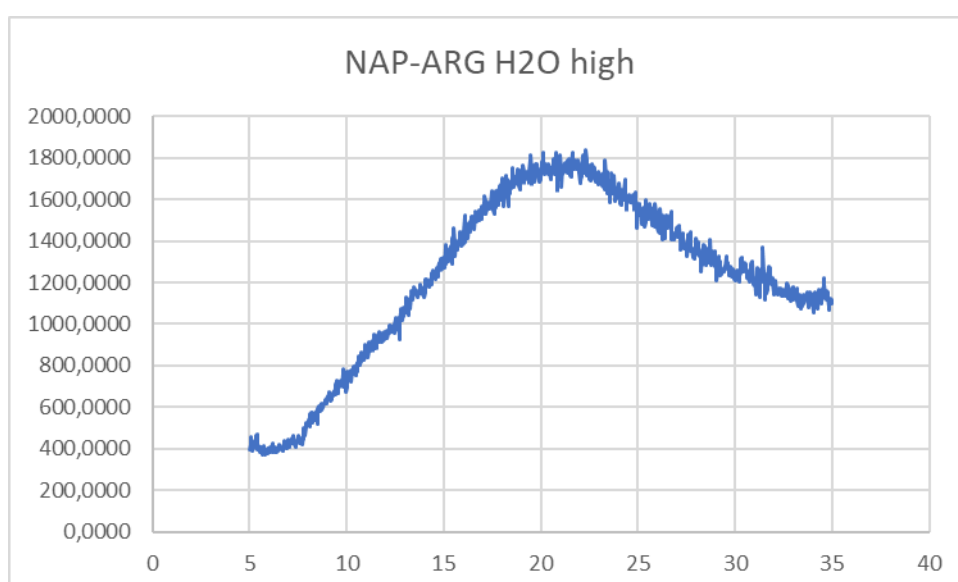
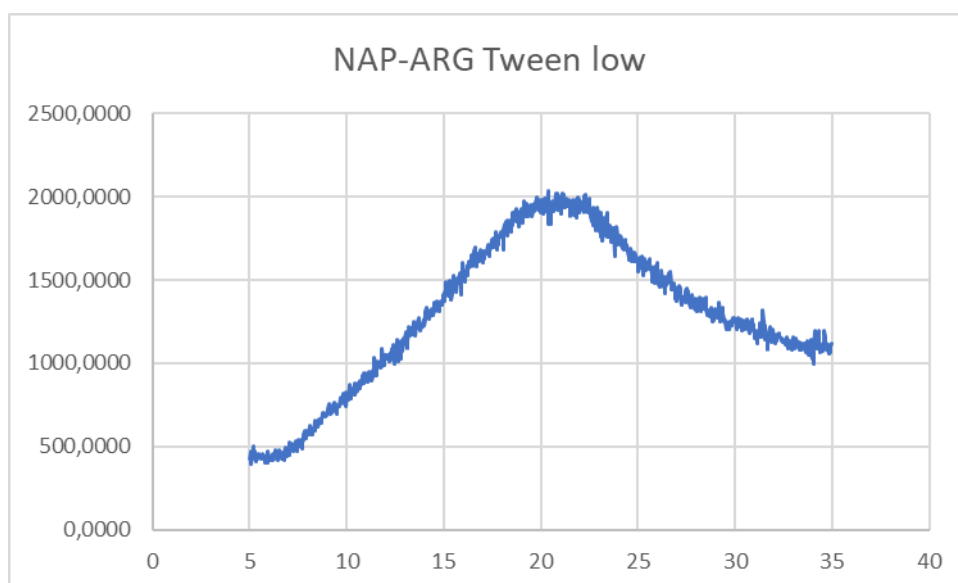
Figure S1. Solid state of starting materials Figure S2: Solid state of freeze-dried concentrations at low and high concentration of detergents.

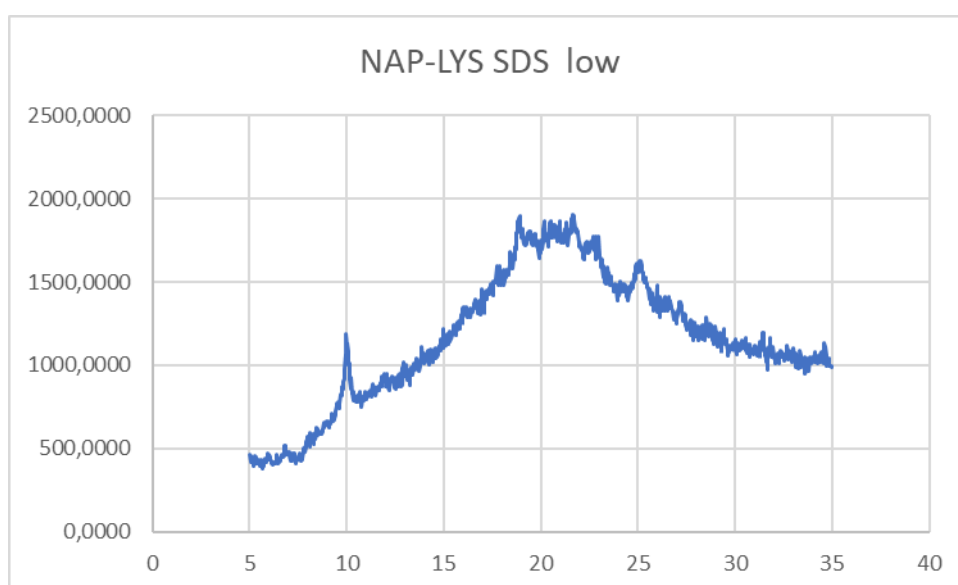
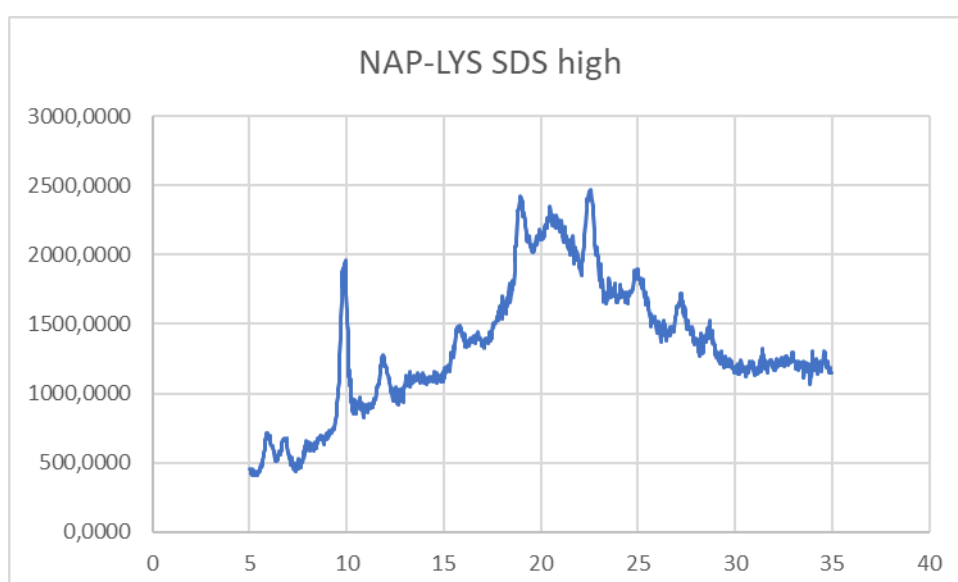
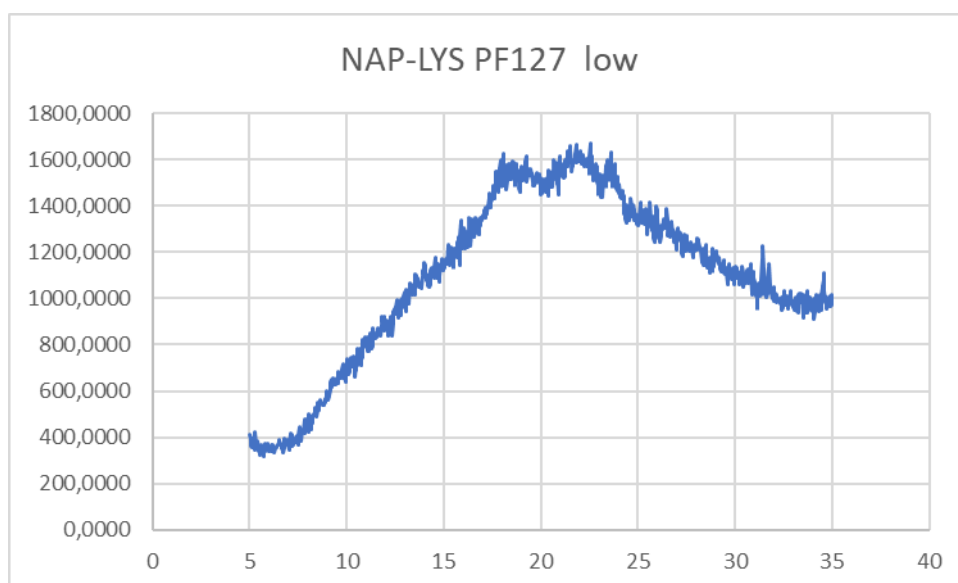


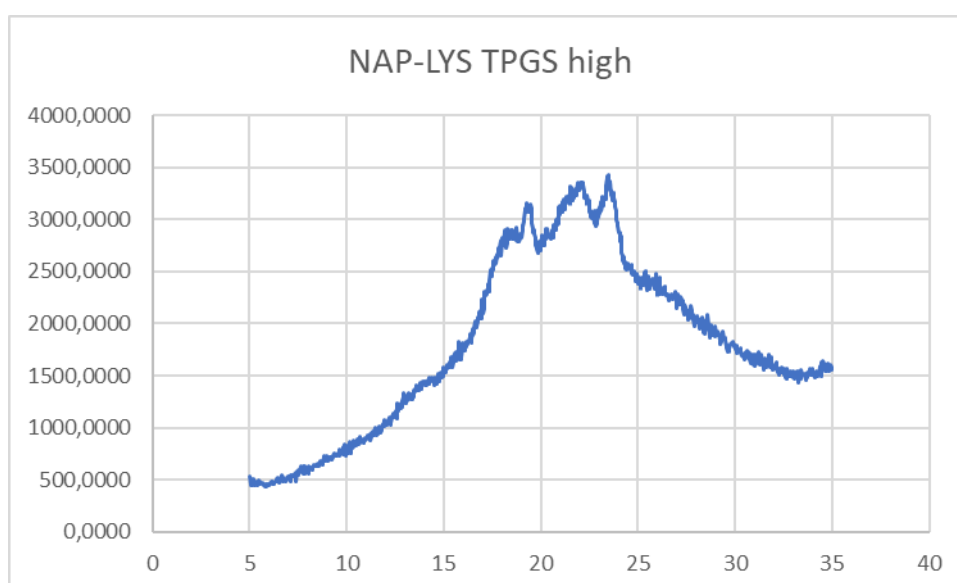
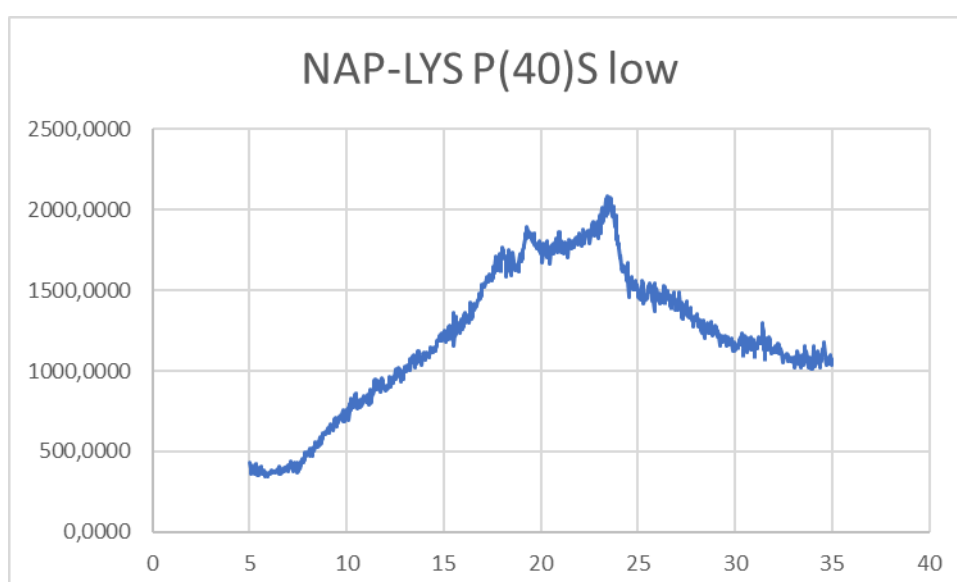
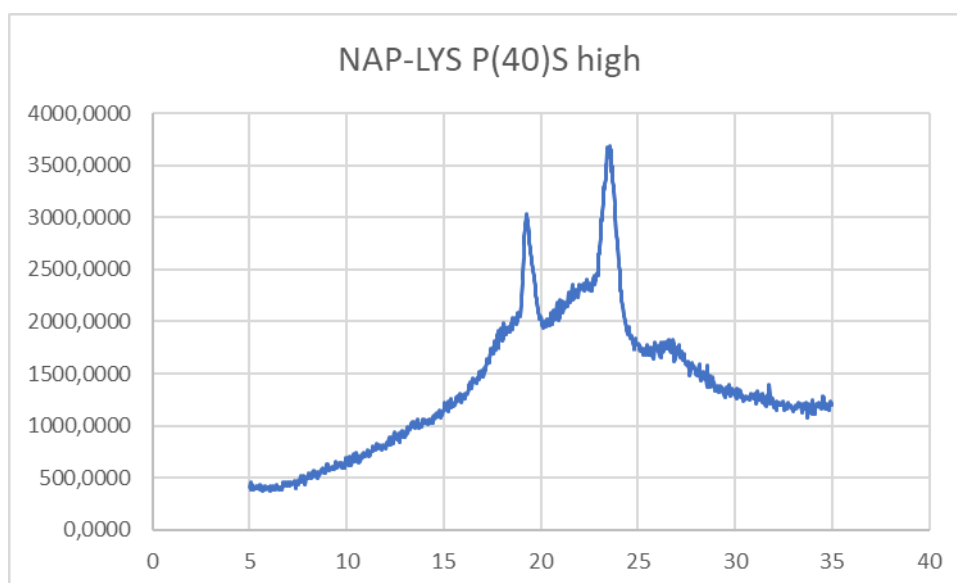


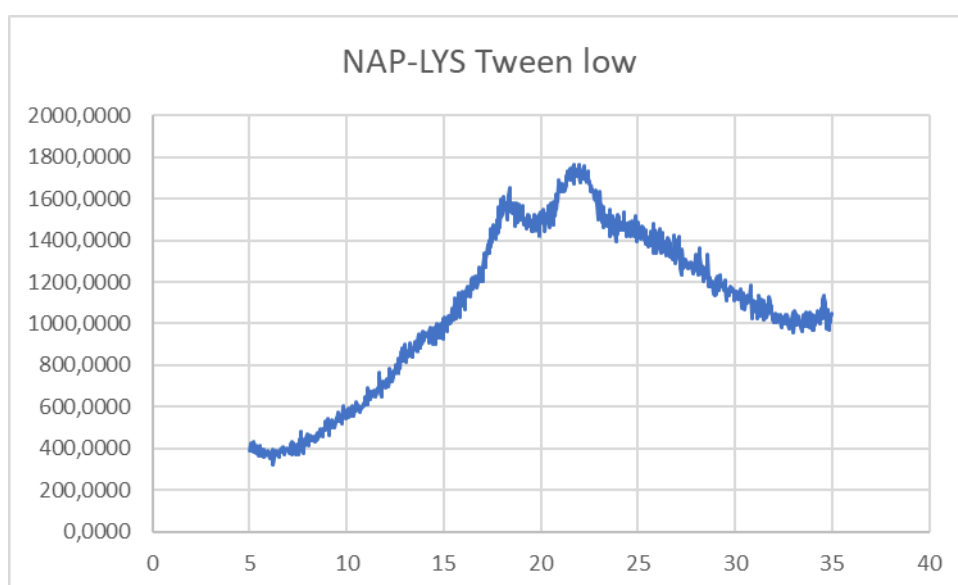
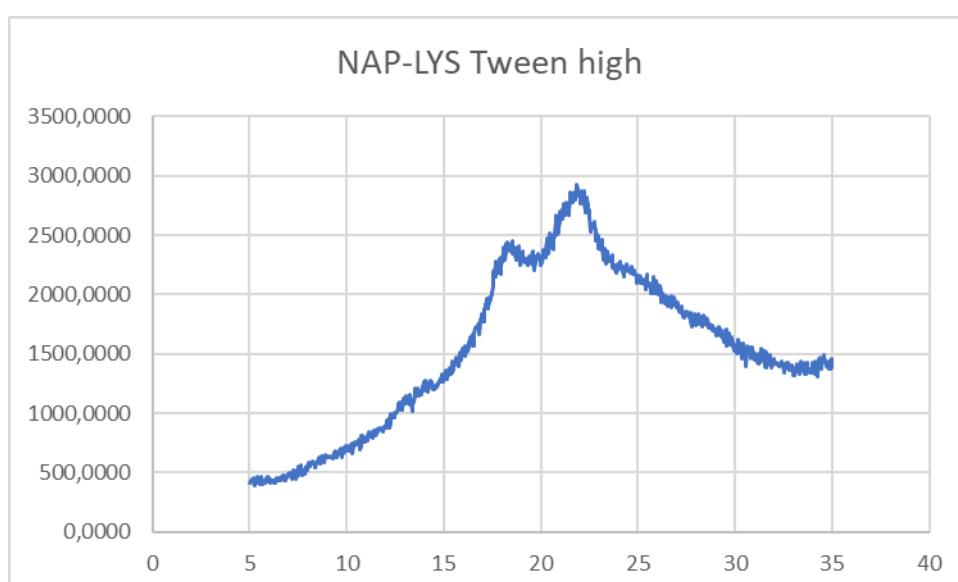
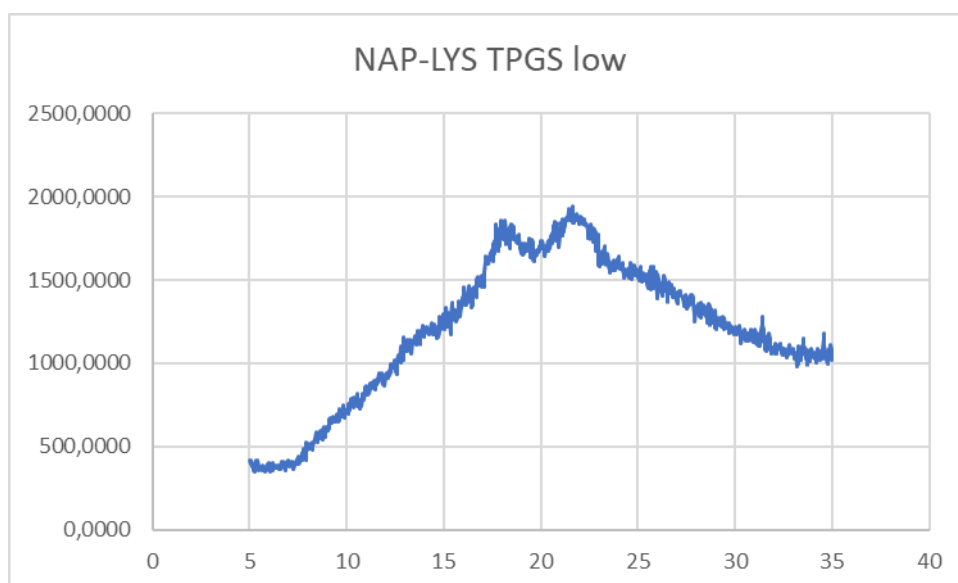












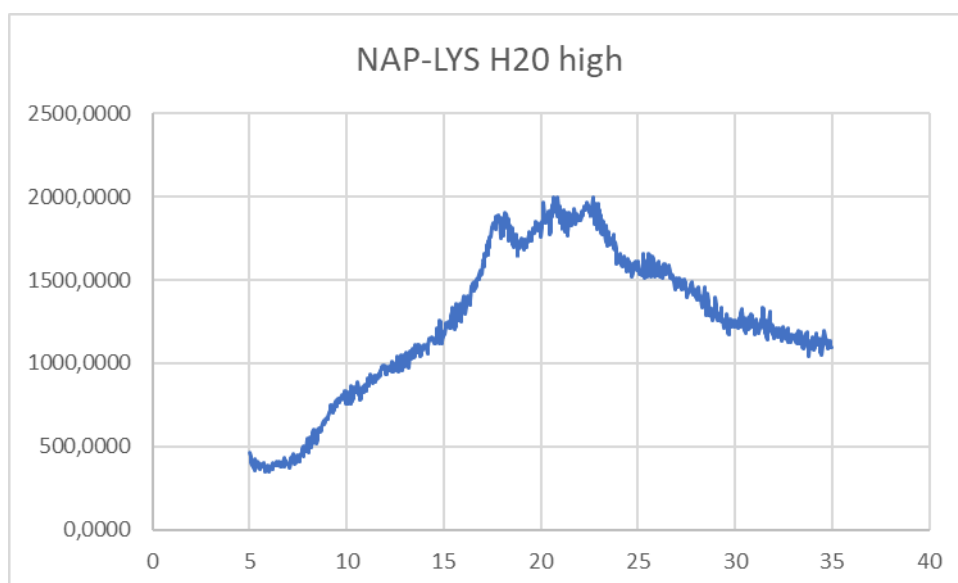
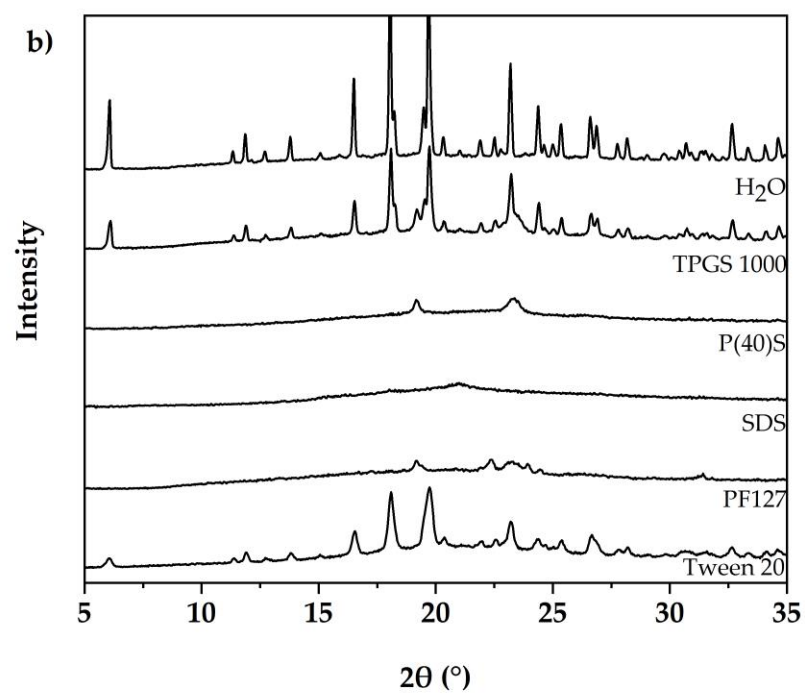
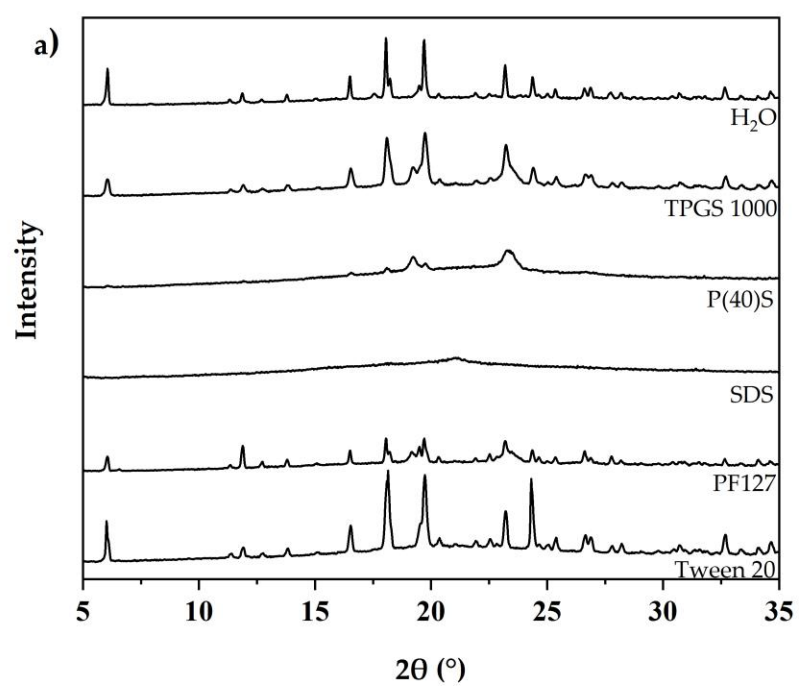
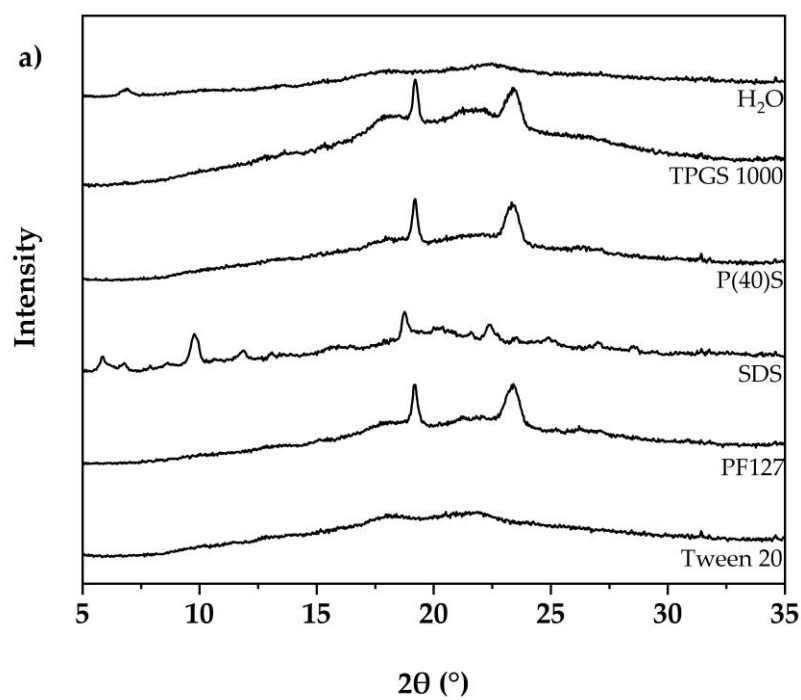
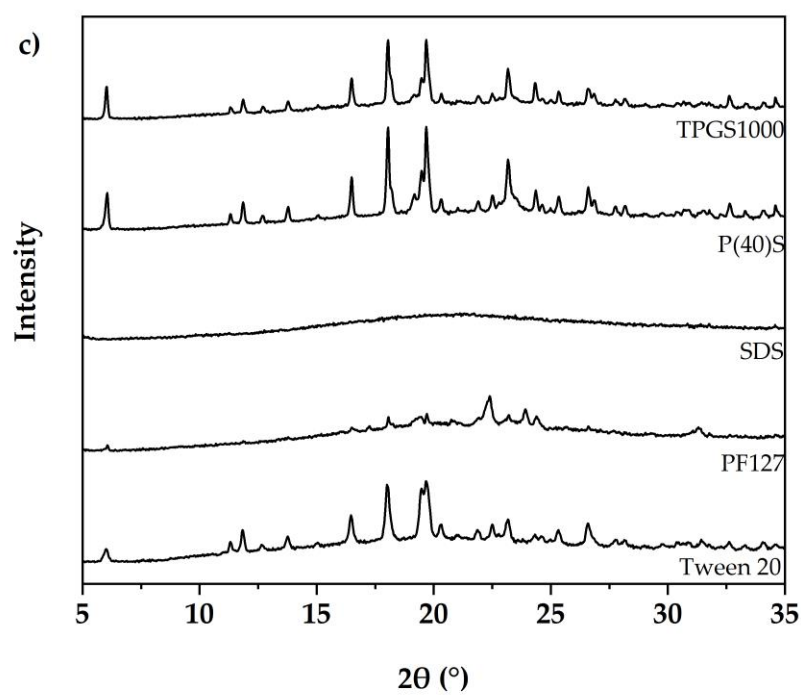


Figure S2. Solid state of freeze-dried concentrations at low and high concentration of detergents





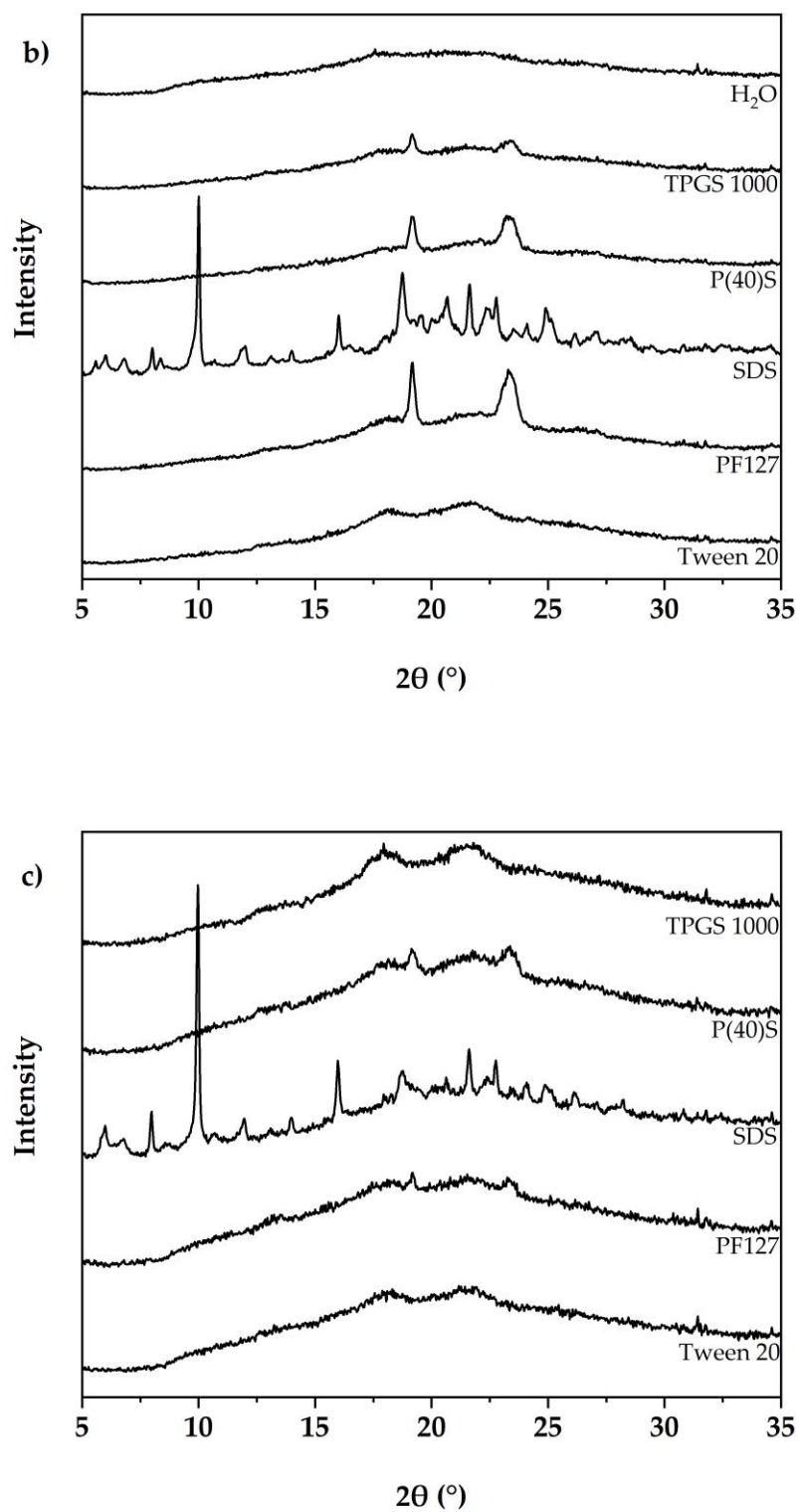


Figure S3. Solid state upon 18 weeks of storage; **a)** NAP-ARG-surfactant high; **b)** NAP-ARG-surfactant medium; **c)** NAP-ARG-surfactant low. **d)** NAP-LYS-surfactant high; **e)** NAP-LYS-surfactant medium; **f)** NAP-LYS-surfactant low