Supplementary material for the manuscript:

Assessment of Coagulation–Flocculation Process Efficiency for the Natural Organic Matter Removal in Drinking Water Treatment

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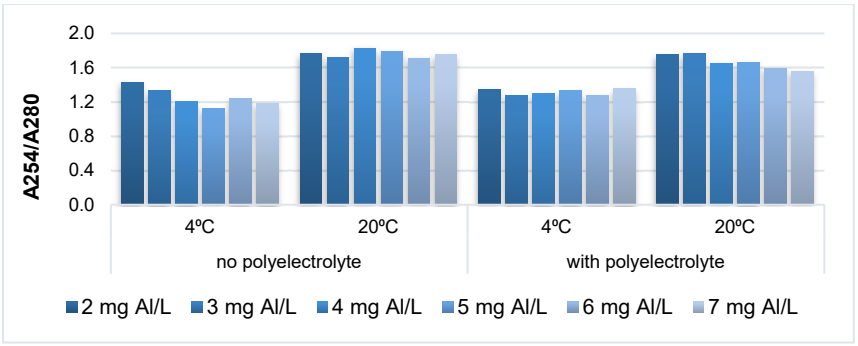
Table S1. Characteristics of PAX XL 60 coagulant used.

Characteristic	Unit	Value
Density	kg/dm^3	1303
Al^{3+}	%	7.38
Al_2O_3	%	13.94
Basicity (OH^-)	%	48.06
Chloride (Cl^-)	%	16.25
pH	pH units	1.61

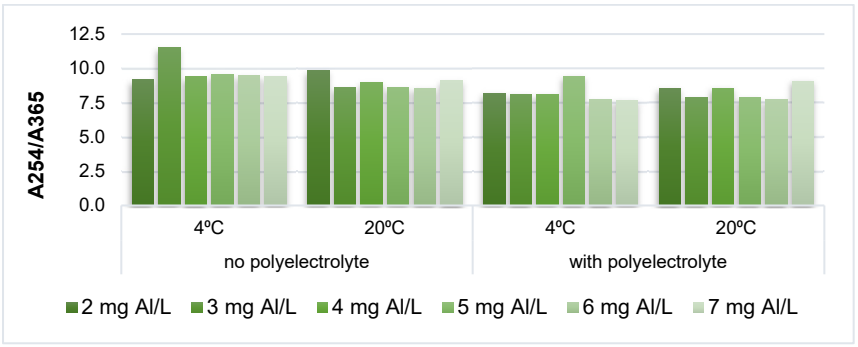
Table S2. Coagulation-flocculation efficiency scores considering multiple water quality indicators.

Water quality indicator	PACl dose (mg Al/L)					
	2	**3**	**4**	**5**	**6**	**7**
Cold temperature						
COD	4	4	4	1	3	1
DOC	4	5	4	4	4	4
Residual Al	4	4	3	4	2	2
A254	4	3	3	2	1	1
A280	4	5	4	4	3	3
A365	4	4	3	2	3	3
SUVA	2	2	2	2	1	1
A254/A280	4	5	5	4	4	3
A254/A365	4	4	4	1	5	5
Total score	34	36	32	24	26	23
Warm temperature						
COD	4	4	4	4	3	5
DOC	2	2	2	2	2	1
Residual Al	4	3	3	3	4	5
A254	5	3	1	1	1	1
A280	3	2	2	2	2	2
A365	5	4	2	3	3	2
SUVA	5	3	3	2	2	3
A254/A280	1	1	2	2	2	3
A254/A365	3	5	3	5	5	3
Total score	32	27	22	24	24	25

*The scores are on a scale of 1 (the best) to 5 (the worst). A minimum total score corresponds to the optimum dose.

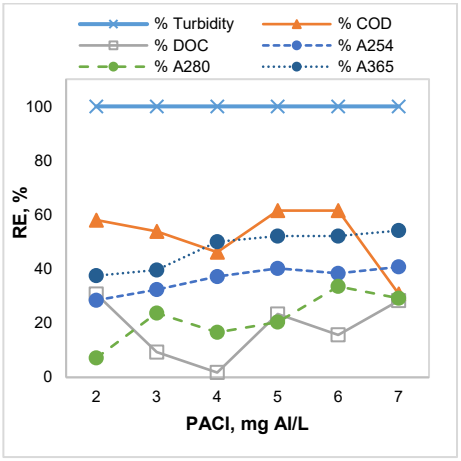


(**a**)

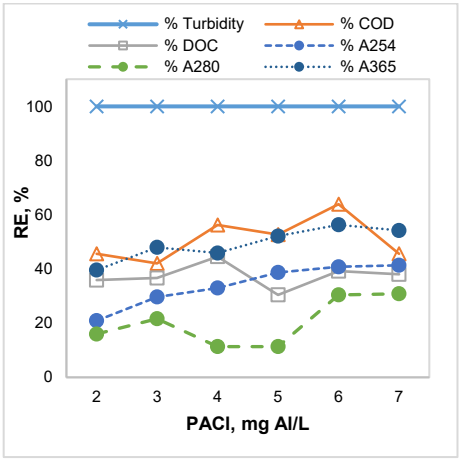


(**b**)

Figure S1. Absorbance ratios after the coagulation-flocculation tests: (**a**) A254/A280 ratio, (**b**) A254/A365.

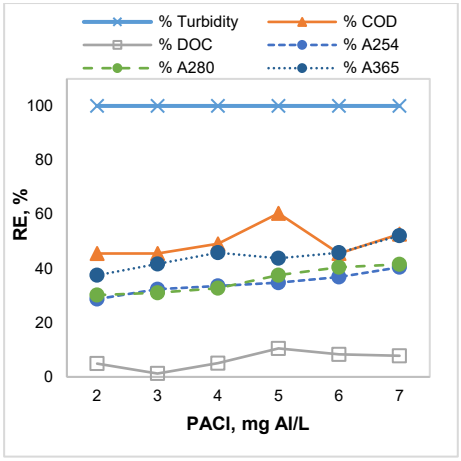


(**a**)

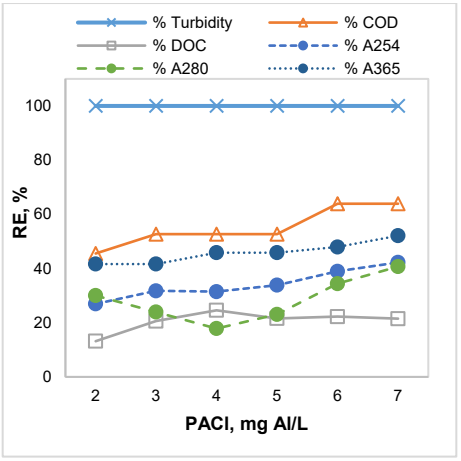


(**b**)

Figure S2. Removal efficiency of coagulation-flocculation process at 4°C (**a**) and 20°C (**b**) under short agitation time

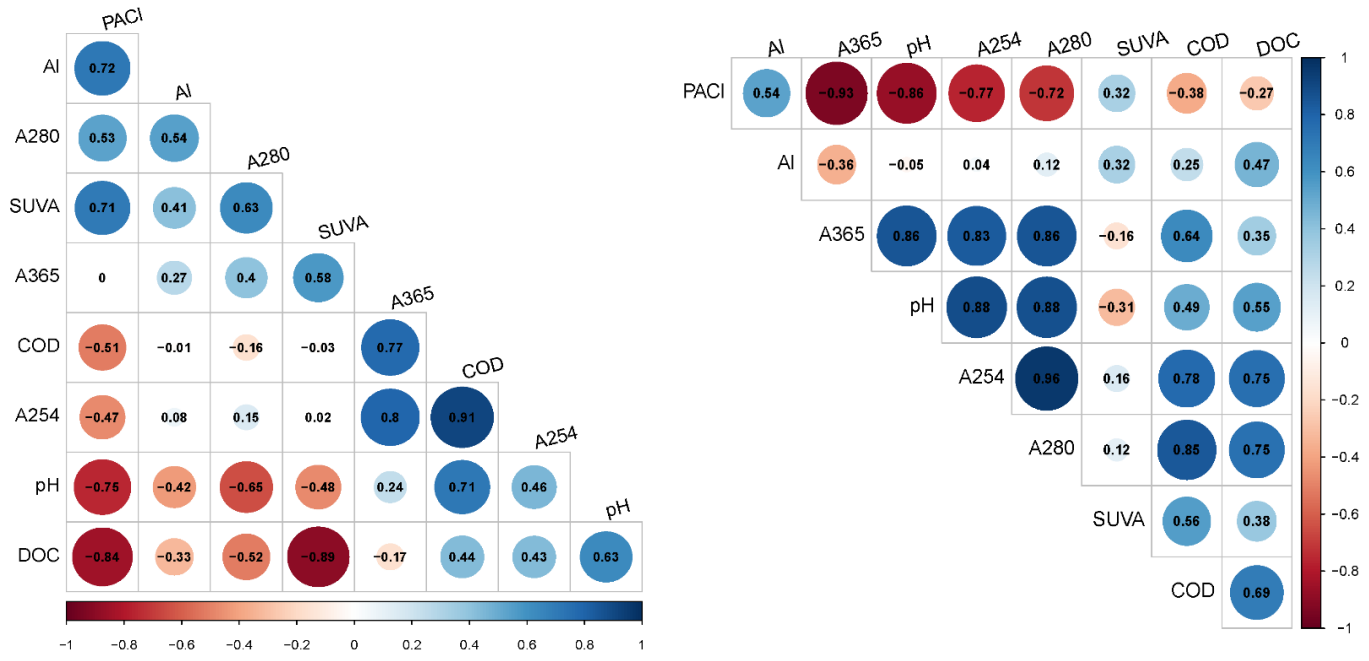


(**a**)



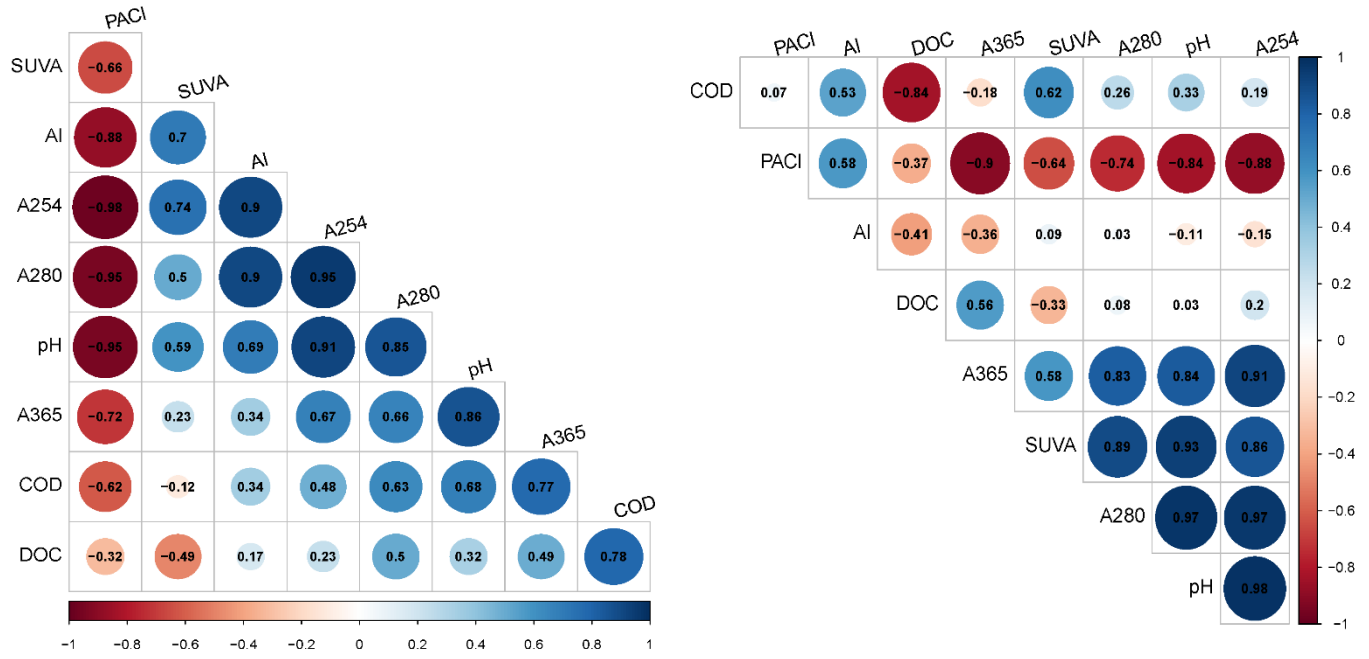
(**b**)

Figure S3. Removal efficiency of coagulation-flocculation process at 4°C (**a**) and 20°C (**b**) under low mixing intensity



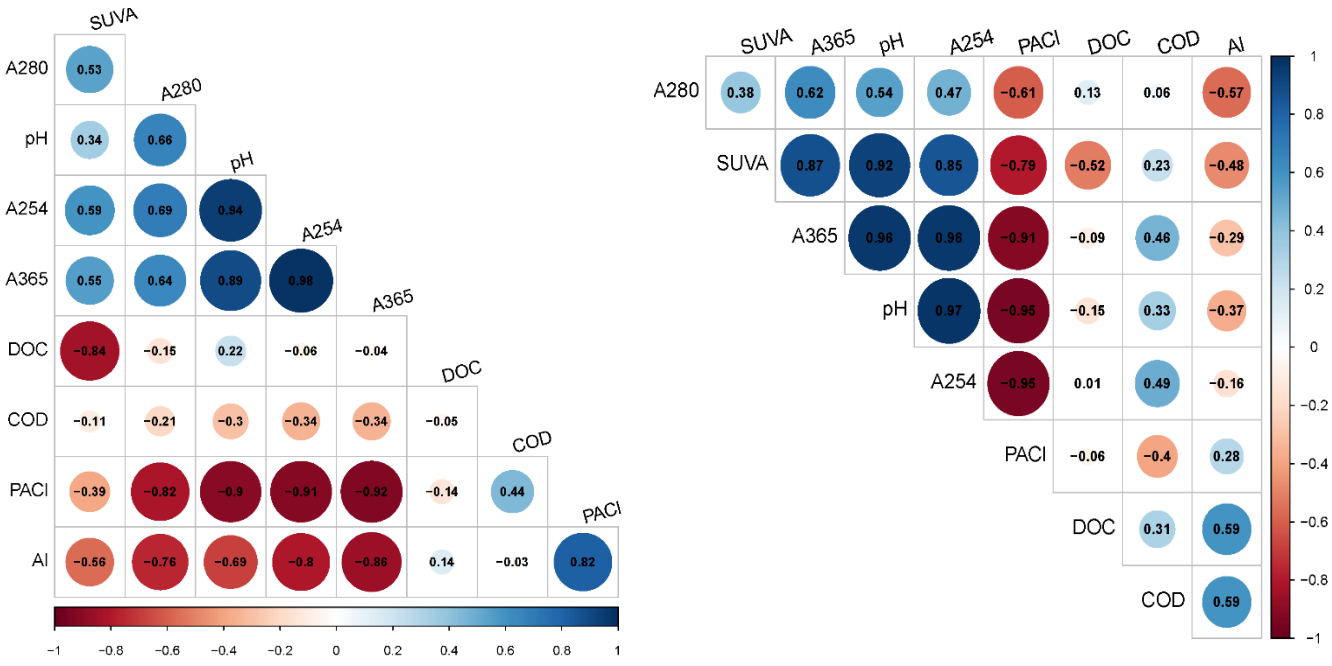
(**a**) (**b**)

Figure S4. Correlation plots for test series T1 (**a**) and T3. Strength of correlation: r < 0.3 "none or very weak", 0.3 ≤ r < 0.5 "weak", 0.5 ≤ r < 0.7 "moderate", r ≥ 0.7 "strong".



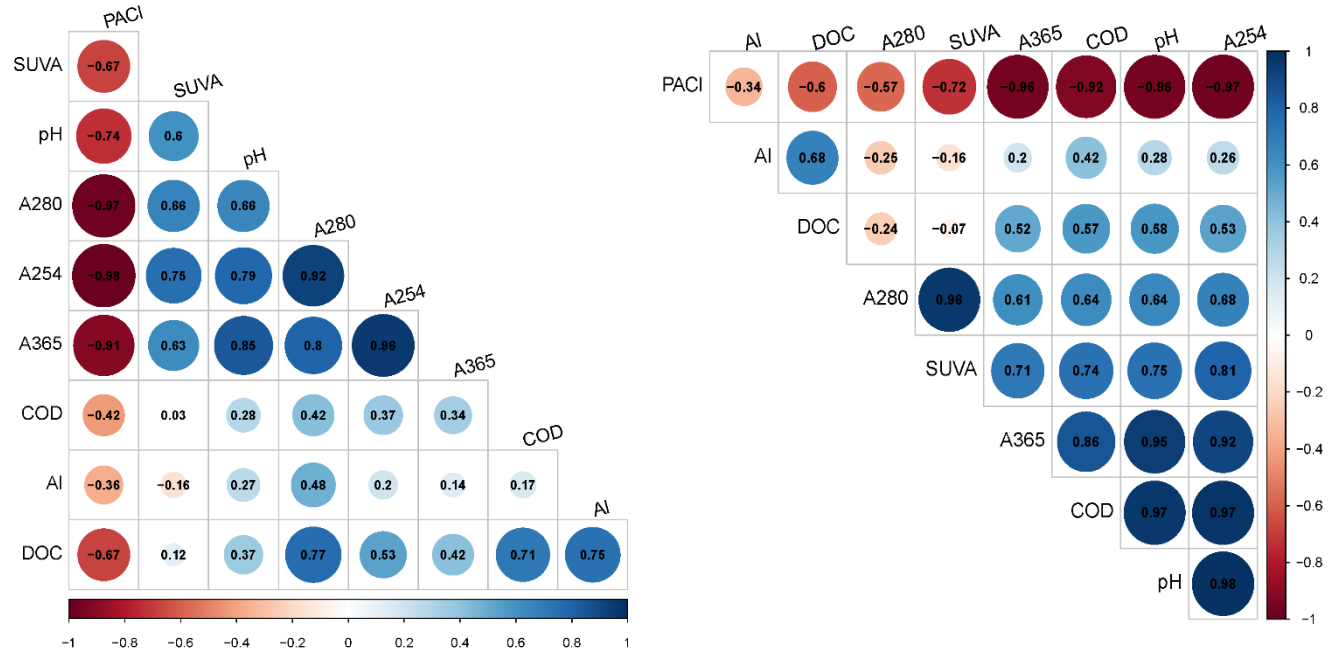
(a) (**b**)

Figure S5. Correlation plots for test series T2 (**a**) and T4 (**b**). Strength of correlation: r < 0.3 "none or very weak", 0.3 ≤ r < 0.5 "weak", 0.5 ≤ r < 0.7 "moderate", r ≥ 0.7 "strong".



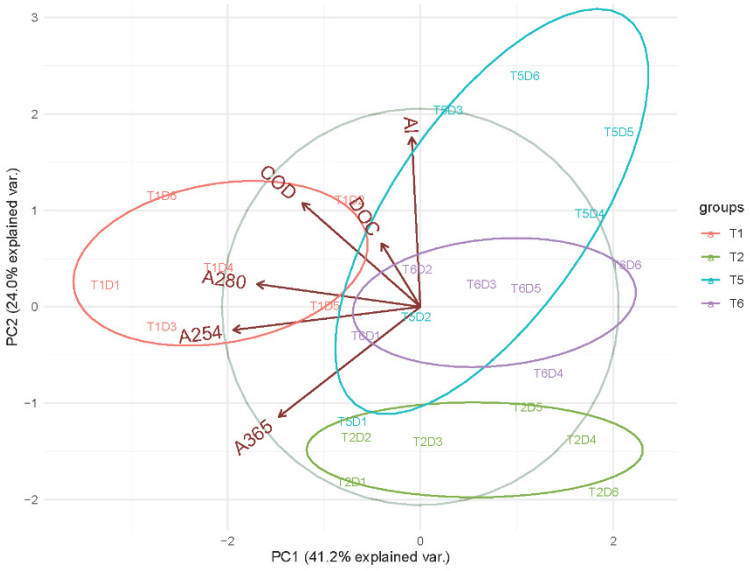
(**a**) (**b**)

Figure S6. Correlation plots for test series T5 (**a**) and T7 (**b**). Strength of correlation: r < 0.3 "none or very weak", 0.3 ≤ r < 0.5 "weak", 0.5 ≤ r < 0.7 "moderate", r ≥ 0.7 "strong".

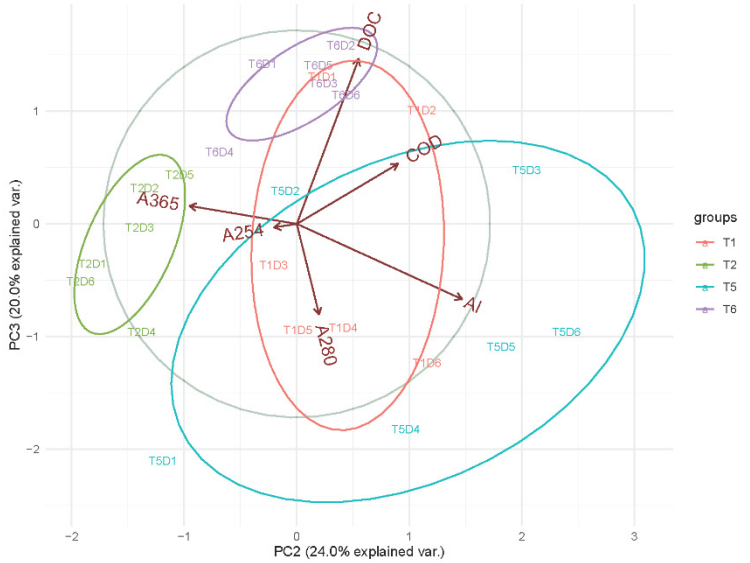


(**a**) (**b**)

Figure S7. Correlation plots for test series T6 (**a**) and T8 (**b**). Strength of correlation: r < 0.3 "none or very weak", 0.3 ≤ r < 0.5 "weak", 0.5 ≤ r < 0.7 "moderate", r ≥ 0.7 "strong".

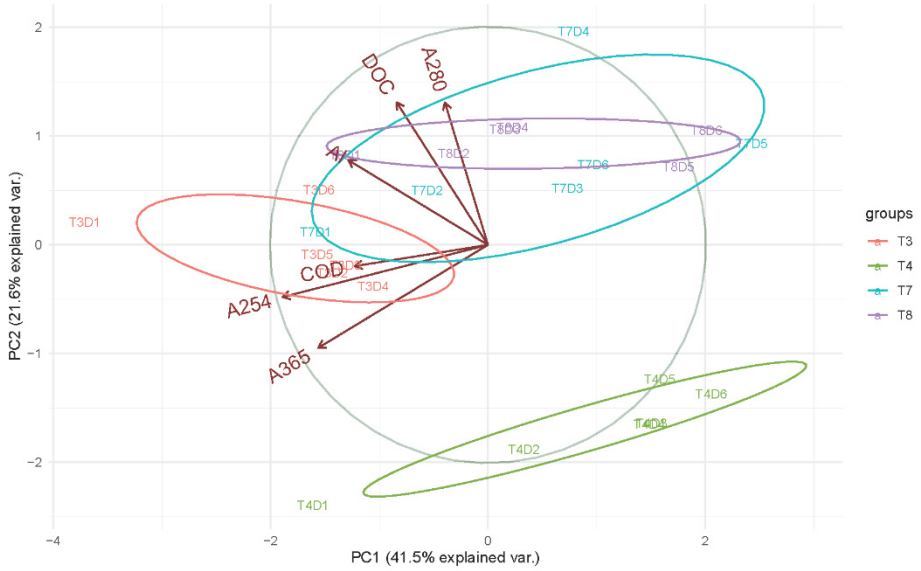


(**a**)

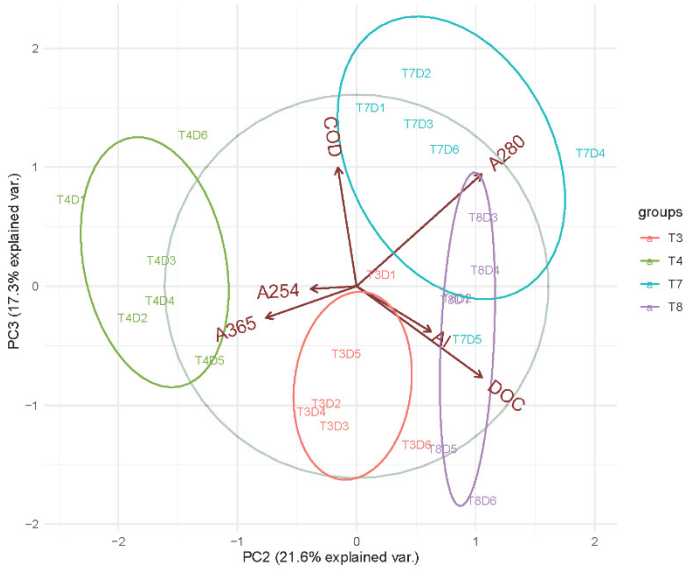


(**b**)

Figure S8. Principal component analysis for coagulation-flocculation tests at 4°C: (**a**) PC2 vs PC1 and (**b**) PC3 vs PC2. The notation D1…D6 represents the PACl dose in the range 2 -7 mg Al/L with an increment of 1.



(**a**)



(**b**)

Figure S9. Principal component analysis for coagulation-flocculation tests at 20°C: (**a**) PC2 vs PC1 and (**b**) PC3 vs PC2. The notation D1…D6 represents the PACl dose in the range 2 -7 mg Al/L with an increment of 1.