

Supplementary material

Anion effects on the liquid-liquid equilibrium behavior of pluronic L64 + water + sodium salts at different pH: Determination of thermodynamic parameters

Edson G. Monteiro-Junior ¹, Josiel M. Costa ^{2*}, Otto A. Q. Jimenez ¹, Bruno R. de Souza ¹, Abimael C. Medeiros ¹ and Rodrigo C. Basso ¹

¹ Science and Technology Institute, Federal University of Alfenas (UNIFAL-MG), José Aurélio Vilela Road, 11999, BR 267, Km 533, Poços de Caldas 37715-400, MG, Brazil

² School of Food Engineering (FEA), University of Campinas (UNICAMP), Campinas 13083-862, SP, Brazil

* Correspondence: josiel.martins.costa@gmail.com or josiel@unicamp.br

Table S1. Coefficients from binodal curves for the salt and polymer rich-phase.

pH	Salt	Coefficient - (Equation 3 and 4)				R ²
		a	b	c	d	
5.0	Sodium sulfate	-521.86	198.5	-23.916	0.9199	0.9768
	Sodium citrate	-348.05	152	-21.812	1.105	0.9921
	Sodium tartrate	-109.68	67.048	-13.416	0.9285	0.9965
7.5	Sodium sulfate	-438.27	161.87	-18.756	0.6906	0.9721
	Sodium citrate	-295.71	131.98	-19.184	0.9426	0.9939
	Sodium tartrate	-246	114.01	-17.25	0.8922	0.9972
10.0	Sodium sulfate ^a	n.a	n.a	n.a	n.a	n.a
	Sodium citrate ^b	n.a	n.a	n.a	n.a	n.a
	Sodium tartrate	-176.17	92.821	-15.197	0.7833	0.9811

^a The adjusted equation was $y = ex^f$, with $e = 0.0064$, $f = -1.026$, and $R^2 = 0.9933$.

^b The adjusted equation was $y = ex^f$, with $e = 0.0041$, $f = -1.27$, and $R^2 = 0.9732$.

Table S2. Thickness of immobilized water spherical shell surrounding the ion and effective radius of anions.

Anion	V (cm ³ mol ⁻¹)	r (nm)	Δr (nm)	(r + Δr) (nm)
C ₆ H ₅ O ₇ ³⁻	72.0	0.3056	0.0301	0.3357
SO ₄ ²⁻	36.5	0.2437	0.0375	0.2812
C ₄ H ₄ O ₆ ²⁻	60.1	0.2878	0.0243	0.3121