

Supplementary Information

A Green Analytical Method Using Polyurethane Foam for The Extraction and Determination of Lauryl Ether Sulfate in Personal Care Hygiene Products

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Table S1. Individual optimization of variables

Individual optimization of variables		
Factor	Range of values	Details of the procedure
Volume of reagents / mL	0.0-30.0	volumes of MB: 0.0, 5.0, 10.0, 15.0, 20.0, 25.0, 30.0 volumes of SDS: 30.0, 25.0, 20.0, 15.0, 10.0, 5.0, 0.0
Temperature / °C	(25 ^a -60 ^b)	(25 ^a -30 ^b), (25 ^a -40 ^b), (25 ^a -60 ^b), 25 °C (without heat)
pH	3-11	one extraction experiment for each medium pH
Ionic strength / (mol L ⁻¹)	0-2.0	0.000, 0.025, 0.050, 0.250, 0.500, 1.00, and 2.00 mol L ⁻¹ for all three anions (Cl ⁻ , NO ³⁻ , and SO ₄ ²⁻)

^aInitial temperature; ^bfinal temperature; MB: methylene blue; SDS: sodium dodecyl sulfate.

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Table S2. Central composite design matrices for the spectrophotometry and digital imaging methods

Experiment	Reaction time / min	Polyurethane foam length / cm
1	120.0 (0)	6.00 (+1.41)
2	162.5 (+1)	5.34 (+1)
3	77.5 (-1)	5.34 (+1)
4	120.0 (0)	3.75 (0)
5	120.0 (0)	3.75 (0)
6	120 (0)	3.75 (0)
7	60.0 (-1.41)	3.75 (0)
8	180.0 (+1.41)	3.75 (0)
9	77.5 (-1)	2.15 (-1)
10	162.5 (+1)	2.15 (-1)
11	120.0 (0)	1.50 (-1.41)

