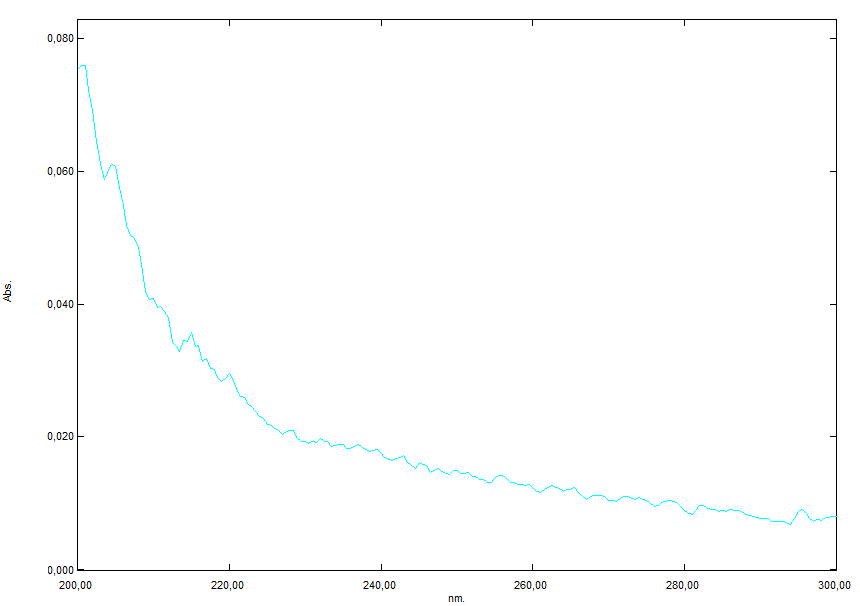
**Supplementary Material**



**Fig. S1.** Absorption spectrum of 100 ppm TBP in Evian water (cuvette width, 10 mm).

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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | Sum of  Squares | df | Mean  Square | F  Value | p-value | | Source | Prob > F | | Model | 333.9700 | 4 | 83.4900 | 279.8600 | 0.0001 | | A-pH | 0.0913 | 1 | 0.0913 | 0.3059 | 0.5858 | | B-Conc TBP | 8.5300 | 1 | 8.5300 | 28.5800 | 0.0001 | | C-Eq H2O2 | 305.8000 | 1 | 305.8000 | 1025.0500 | 0.0001 | | C2 | 38.4500 | 1 | 38.4500 | 128.9000 | 0.0001 | | Residual | 6.5600 | 22 | 0.2983 |  |  | | Cor Total | 340.5300 | 26 |  |  |  | |  |  |  |  |  |  | | Std. Dev. | 0.5462 |  | R-Squared | 0.9807 |  | | Mean | 6.7400 |  | Adj R-Squared | 0.9772 |  | | C.V. % | 8.1000 |  | Pred R-Squared | 0.9697 |  | |  |  |  | Adeq Precision | 40.5729 |  | |  |  |  |  |  |  | | (P release 60min)0,5 | = |  | Model | Significant |  | | 2.133590 |  |  | A-pH | Non Significant |  | | 0.021709 | \* pH |  | B-Conc TBP | Significant |  | | -0.001526 | \* Conc TBP |  | C-Eq H2O2 | Significant |  | | 0.479000 | \* Eq H2O2 |  | C2 | Significant |  | | -0.006663 | \* Eq H2O2 2 |  | Std. deviation | Significant |  | |  |  |  | Adequation | Significant |  | |  |  |  | Precision | Significant |  | | |

**Fig. S2.** Output of the fitting software Design Expert 11 for the reduced quadratic model of phosphate release after 1h.

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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | Sum of  Squares | df | Mean  Square | F  Value | p-value | | Source | Prob > F | | Model | 16595.9600 | 8 | 2074.4950 | 74.4900 | 0.0001 | | A-pH | 211.4400 | 1 | 211.4400 | 7.5900 | 0.0130 | | B-Conc TBP | 199.4400 | 1 | 199.4400 | 7.1600 | 0.0154 | | C-Eq H2O2 | 11243.8900 | 1 | 11243.8900 | 403.7200 | 0.0001 | | AB | 433.6300 | 1 | 433.6300 | 15.5700 | 0.0009 | | BC | 261.2500 | 1 | 261.2500 | 9.3800 | 0.0067 | | A2 | 349.2100 | 1 | 349.2100 | 12.5400 | 0.0023 | | B2 | 1125.3700 | 1 | 1125.3700 | 40.4100 | 0.0001 | | C2 | 935.8000 | 1 | 935.8000 | 33.6000 | 0.0001 | | Residual | 501.3200 | 18 | 27.8511 |  |  | | Cor Total | 17097.2800 | 26 |  |  |  | |  |  |  |  |  |  | | Std. Dev. | 5.2800 |  | R-Squared | 0.9707 |  | | Mean | 45.8100 |  | Adj R-Squared | 0.9576 |  | | C.V. % | 11.5200 |  | Pred R-Squared | 0.9358 |  | |  |  |  | Adeq Precision | 26.8683 |  | |  |  |  |  |  |  | |  |  |  | Model | Significant |  | | TOC removal 60min | = |  | A-pH | Significant |  | | -25.402910 |  |  | B-Conc TBP | Significant |  | | 15.574030 | \* pH |  | C-Eq H2O2 | Significant |  | | 0.092403 | \* Conc TBP |  | AB | Significant |  | | 0.244197 | \* Eq H2O2 |  | BC | Significant |  | | -0.004065 | \* pH \* Conc TBP |  | A2 | Significant |  | | -0.000531 | \* Conc TBP \* Eq H2O2 |  | B2 | Significant |  | | -1.179240 | \* pH ² |  | C2 | Significant |  | | -6.90E-05 | \* Conc TBP ² |  | Std. deviation | Non Significant |  | | 0.032868 | \* Eq H2O2 ² |  | Adequation | Significant |  | |  |  |  | Precision | Significant |  | | |

**Fig. S3.** Output of the fitting software Design Expert 11 for the reduced quadratic model of TOC removal after 1h.

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| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | |  | Sum of  Squares | df | Mean  Square | F  Value | p-value | | Source | Prob > F | | Model | 236.7700 | 5 | 47.3500 | 154.2300 | 0.0001 | | A-pH | 1.6500 | 1 | 1.6500 | 5.3800 | 0.0306 | | B-Conc TBP | 37.2200 | 1 | 37.2200 | 121.2300 | 0.0001 | | C-Eq H2O2 | 196.2000 | 1 | 196.2000 | 638.9900 | 0.0001 | | BC | 2.0400 | 1 | 2.0400 | 6.6500 | 0.0175 | | C2 | 6.5800 | 1 | 6.5800 | 21.4400 | 0.0001 | | Residual | 6.4500 | 21 | 0.3070 |  |  | | Cor Total | 243.2100 | 26 |  |  |  | |  |  |  |  |  |  | | Std. Dev. | 0.5541 |  | R-Squared | 0.9735 |  | | Mean | 5.0100 |  | Adj R-Squared | 0.9672 |  | | C.V. % | 11.0700 |  | Pred R-Squared | 0.9559 |  | |  |  |  | Adeq Precision | 38.0325 |  | |  |  |  |  |  |  | | (P release 15min)^0.5 | = |  | Model | Significant |  | | 1.821930 |  |  | A-pH | Significant |  | | 0.092345 | \* pH |  | B-Conc TBP | Significant |  | | -0.002251 | \* Conc TBP |  | C-Eq H2O2 | Significant |  | | 0.304611 | \* Eq H2O2 |  | BC | Significant |  | | -4.70E-05 | \* Conc TBP \* Eq H2O2 |  | B2 | Significant |  | | -0.002757 | \* Eq H2O2 2 |  | Std. deviation | Significant |  | |  |  |  | Adequation | Significant |  | |  |  |  | Précision | Significant |  | | |
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**Fig. S4.** Output of the fitting software Design Expert 11 for the reduced quadratic model of phosphate release after 15 min.