

Supporting Information

Structural and physical-chemical behavior of CeO₂ nanoparticles based diesel additive during combustion and environmental release

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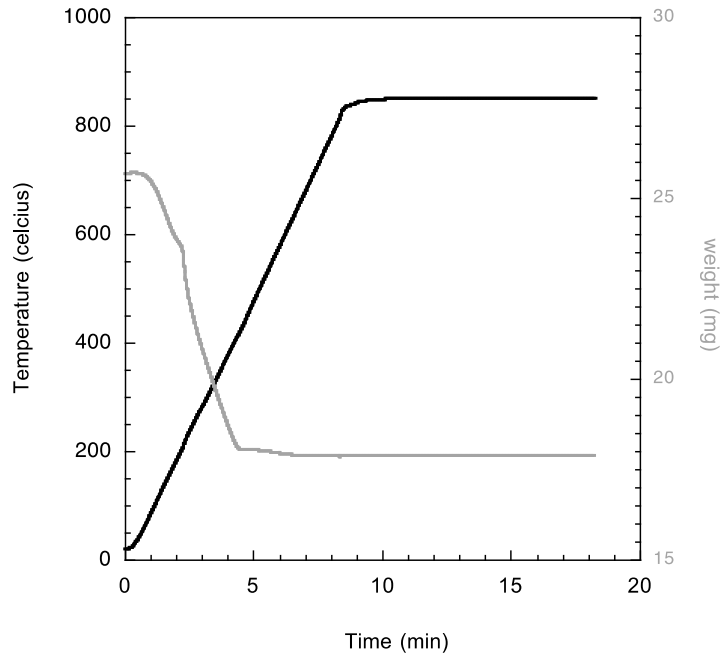


Figure S1. Thermogravimetric analysis of the Envirox™ performed under ambient atmosphere.

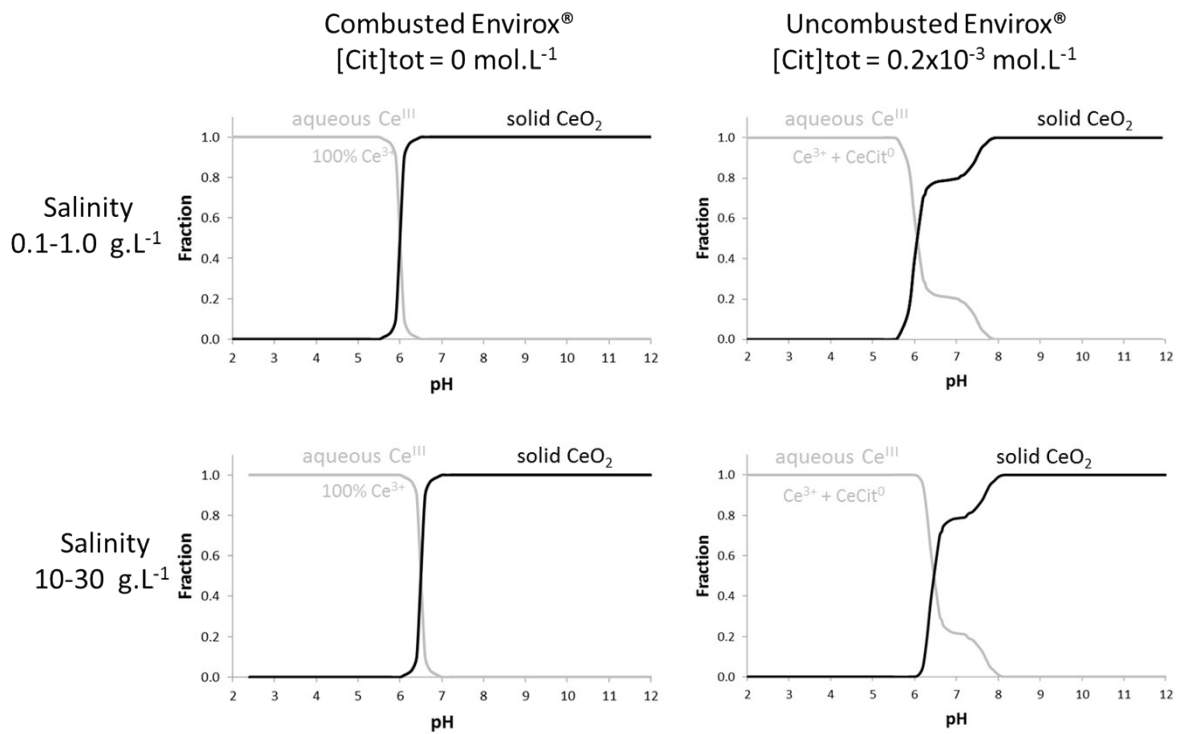


Figure S2. Geochemical modeling of Ce species present in the water column as a function of the pH, the salinity, and the presence of organic compounds (as citrate).

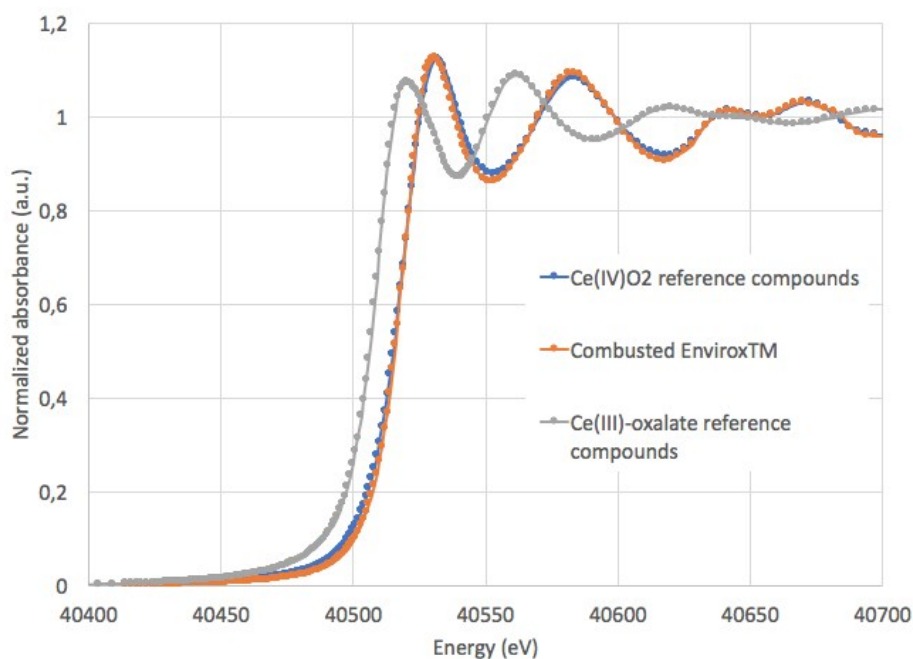


Figure S3. X-Ray Absorption Near-Edge Structure at the Ce K-edge of the combusted EnviroxTM, and pure Ce(IV)O₂ and Ce(III) reference compounds.

Table 1. Composition of the aqueous media used for the geochemical modeling presented in Figure S2.

Salinity (g.L ⁻¹)	[Na] _{tot} (mol.L ⁻¹)	[K] _{tot} (mol.L ⁻¹)	[K] _{tot} (mol.L ⁻¹)	[Ca] _{tot} (mol.L ⁻¹)	[Cl] _{tot} (mol.L ⁻¹)	[SO ₄] _{tot} (mol.L ⁻¹)	[PO ₄] _{tot} (mol.L ⁻¹)	[NO ₃] _{tot} (mol.L ⁻¹)	Eh (V)	I	[Ce] _{tot} (mol.L ⁻¹)
0.1	4.42x10 ⁻⁵	0.9 x10 ⁻⁶	0.46x10 ⁻⁵	0.9x10 ⁻⁶	4.97x10 ⁻⁵	0.21x10 ⁻⁵	0.1x10 ⁻⁹	0.2x10 ⁻⁹	0.3	0	0.93x10 ⁻³
1.0	4.42x10 ⁻⁴	0.9 x10 ⁻⁵	0.46x10 ⁻⁴	0.9x10 ⁻⁵	4.97x10 ⁻⁴	0.21x10 ⁻⁴	0.1x10 ⁻⁸	0.2x10 ⁻⁸	0.3	10 ⁻⁴	
10	4.42x10 ⁻³	0.9 x10 ⁻⁴	0.46x10 ⁻³	0.9x10 ⁻⁴	4.97x10 ⁻³	0.21x10 ⁻³	0.1x10 ⁻⁷	0.2x10 ⁻⁷	0.3	0.4	
30	1.33x10 ⁻²	0.3 x10 ⁻³	0.14x10 ⁻²	0.3x10 ⁻³	1.49x10 ⁻²	0.6x10 ⁻³	0.4x10 ⁻⁷	0.7x10 ⁻⁷	0.3	1.3	