Electronic Supplementary Material (ESI) for Environmental Science: Processes & Impacts. This journal is © The Royal Society of Chemistry 2024

Electronic Supplementary Information for:

Heterogeneous Interactions and Transformations of Dibasic Esters with Indoor Relevant Surfaces

Cholaphan Deeleepojananan, Jinxu Zhou, and Vicki H. Grassian*

Department of Chemistry and Biochemistry, University of California San Diego, La Jolla,

California 92093 USA

*Corresponding Author: Vicki H. Grassian (<u>vhgrassian@ucsd.edu</u>)

Electronic supplementary information contains four figures.



Fig. S1 FTIR spectra of the SiO₂ surface after DMS exposure at an equilibrium pressure of 5 mTorr followed by 1-h and overnight evacuation.



Fig. S2 FTIR deconvolution of the DMS-TiO₂ band from 1400 to 1480 cm⁻¹, revealing a symmetric stretching vibration of COO⁻ at 1451 cm⁻¹.



Fig. S3 First-order desorption kinetics of non-reacted DMS monolayer on TiO₂ surfaces following their exposures at 6 ± 1 mTorr from two trials ($R^2 = 0.92$) where [A]_t represents the integrated peak area at 1726 cm⁻¹ with respect to time t, and [A]₀ is the integrated peak area at equilibrium.



Fig. S4 FTIR spectra of hydroxylated and deuteroxylated TiO_2 surfaces after DMS exposure at an equilibrium pressure of 40 ± 1 mTorr. The gas-phase spectrum in the presence of DMS-TiO₂(OD) was also shown. The deuteroxylated TiO₂ surface was evacuated overnight after 30 min of exposure.