

Abstract Submitted
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Release kinetics of volatiles from clay minerals PASCAL CLAUSEN, EPFL — Smectite clay minerals are known to have interesting sorption properties, but the prediction of the kinetics of desorption of volatile molecules from such clays remains a challenge. The aim of this work is to relate the isothermal rate of desorption of volatile molecules from cation exchanged smectite clays to the chemical structures and geometries of the interacting species (clay platelet surface, type of counter-ion, type of volatile). It is thought that the rate of desorption of the volatiles at a given time is governed by their instantaneous diffusion in the clay and in the gas phase, which in turns is dependent on the volatile's interaction with its chemical and geometrical environment. Therefore, in addition to isothermal desorption rate measurements by thermogravimetry, activation energies of desorption are measured and calculated and the interacting compounds are characterized in terms of their chemical structure and geometry.

Pascal Clausen
EPFL

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