

Supporting Information

Kinetics and products of heterogeneous reaction of HONO with Fe₂O₃ and Arizona Test Dust.

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Table S1. Typical chemical composition of Arizona Test Dust.

Chemical	Percent of Weight
SiO ₂	68-76%
Al ₂ O ₃	10-15%
Fe ₂ O ₃	2-5%
Na ₂ O	2-4%
CaO	2-5%
MgO	1-2%
TiO ₂	0.5-1%
K ₂ O	2-5%

Table S2: Branching ratio of the NO and NO₂ forming pathways of the reaction of HONO with Fe₂O₃ surface as a function of temperature under dry conditions.

Temperature (K)	Branching ratio	
	NO ₂	NO
275	0.60	0.44
280	0.60	0.43
285	0.61	0.42
290	0.60	0.42
295	0.64	0.41
300	0.62	0.42
305	0.61	0.43
310	0.62	0.40
315	0.61	0.43
320	0.62	0.43

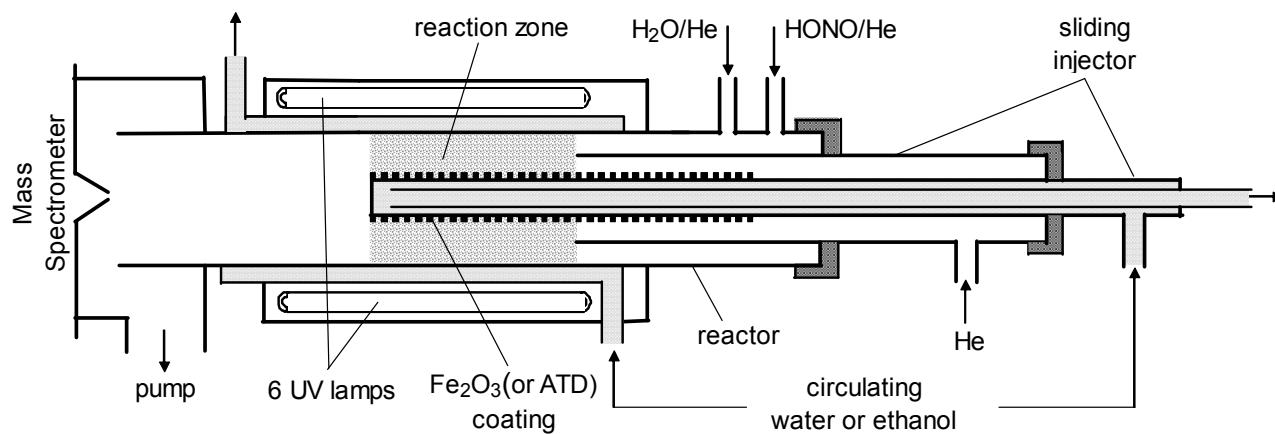


Figure S1. Diagram of the flow photoreactor used.

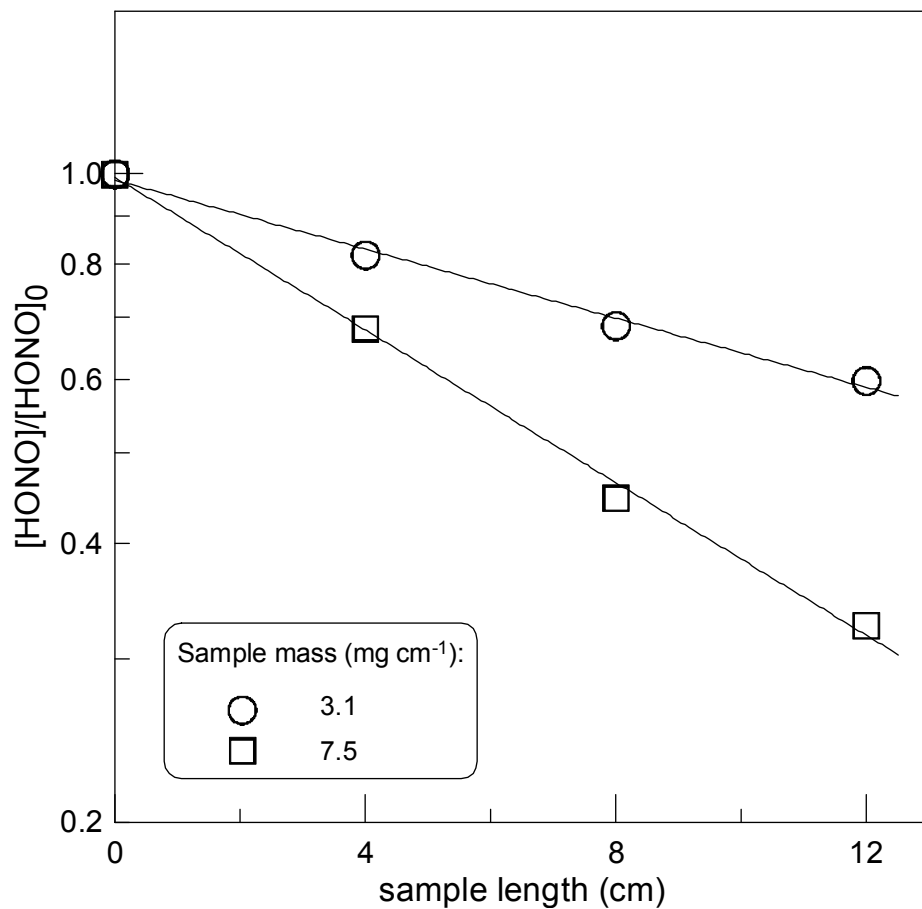


Figure S2. Examples of kinetics of HONO consumption on Fe_2O_3 surface: $T = 300\text{K}$, $P = 1$ Torr, $[\text{HONO}]_0 = 2.2 \times 10^{12}$ molecule cm^{-3} , flow velocity = 1540 cm s^{-1} . Solid lines correspond to exponential fit to the experimental data.

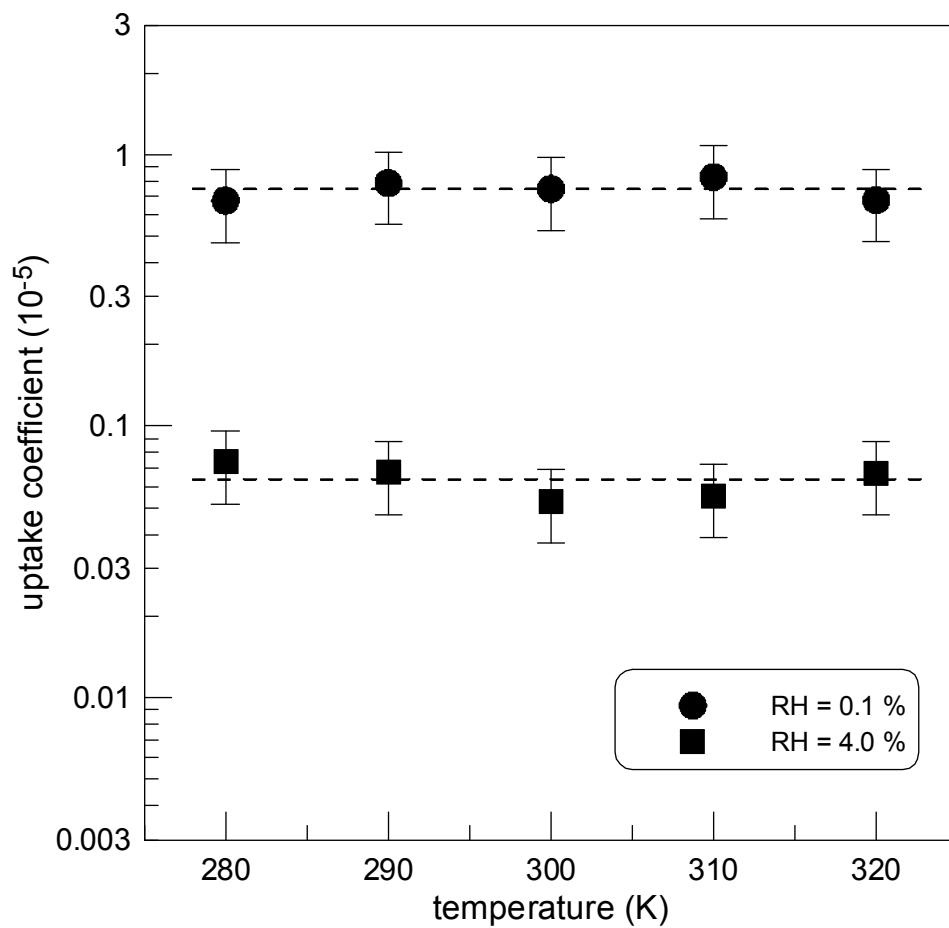


Figure S3. Temperature dependence of the uptake coefficient of HONO on Fe₂O₃ surface measured at RH = 0.1 and 4.0 %.

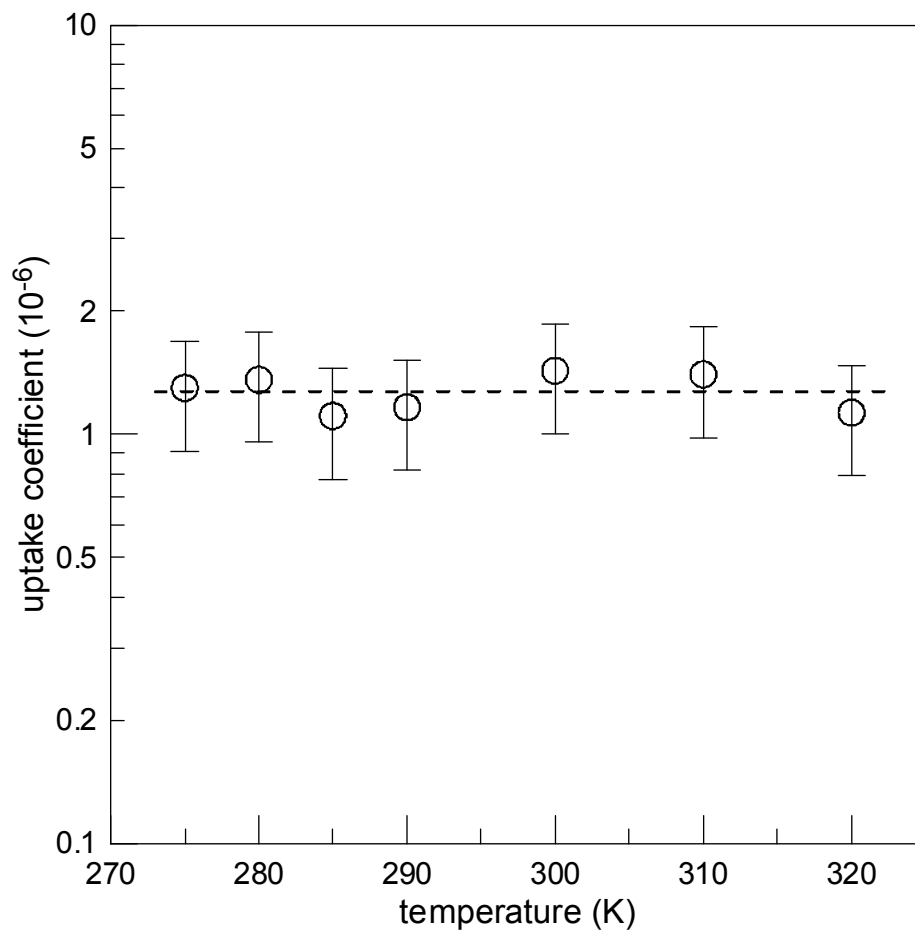


Figure S4. Temperature dependence of the uptake coefficient of HONO on ATD surface measured at $\text{RH} \cong 5\%$.