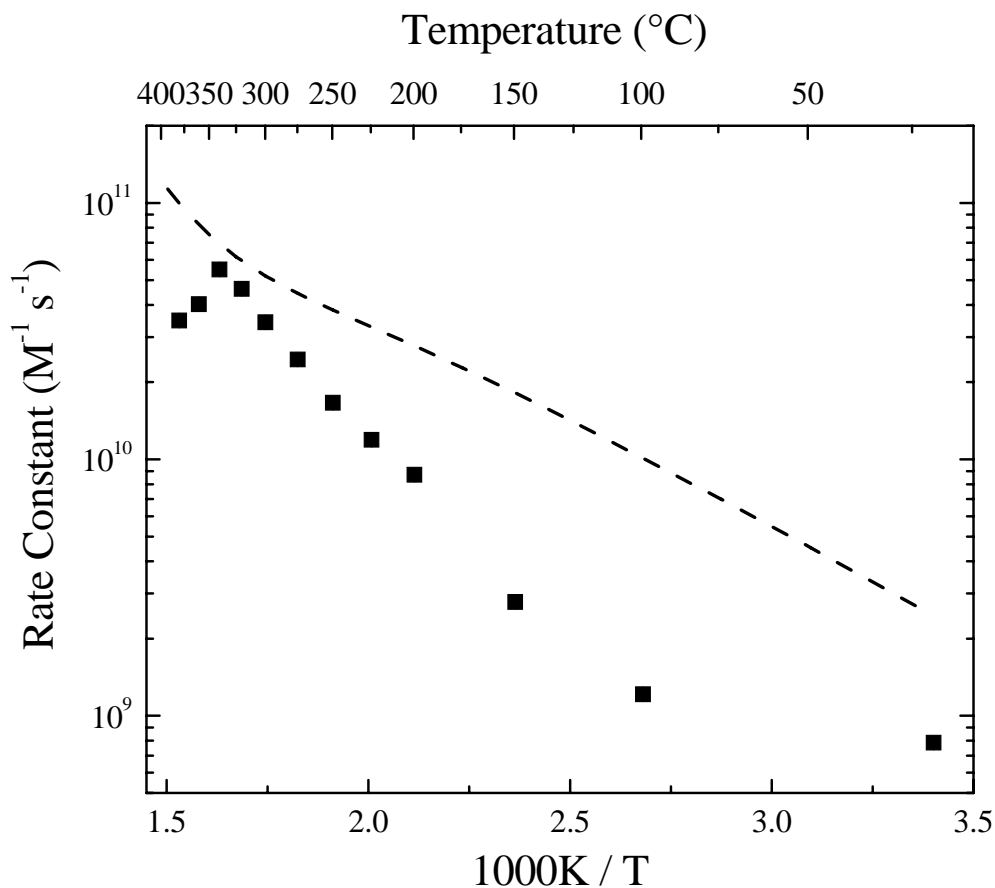# Supplemental Information:

Reaction of the Hydroxyl Radical with Phenol in Water up to Supercritical Conditions

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Figure S1. Arrhenius plot of the effective second-order rate constant of radical recombination (average of reactions (9)-(14), see text for details), compared with an estimate of the diffusion limit from the Smoluchowski equation $k_{diff} = \beta 4\pi RD$. The spin factor $\beta = \frac{1}{4}$, reaction distance R is taken as 0.7 nm, and relative diffusion coefficient D is 2.0 x 10^{-9} m^2 s^{-1} at room temperature, scaled *vs.* temperature by multiplication by T / viscosity. Clearly the effective second order decay rates are physically reasonable.