Kinetics of the OH + NO₂ reaction: Rate coefficients (217-333 K, 16-1200 mbar) and fall-off parameters for N₂ and O₂ bath-gases

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Supplementary Information

Figure S1. Red circles: Bimolecular plot of the OH reaction with NO₂ measured at 78.8 Torr N₂ and 217 K. The black squares were obtained by accounting for loss of NO₂ via N₂O₄ formation.
Figure S2. Ratio of the parametrised rate coefficient ($k_{\text{param}}$) to measurements ($k_{\text{meas}}$) as a function of the molecular density ($M$) for 6 different temperatures.
Figure S3. Comparison of the present parametrisation with low-pressure measurements by Howard and Evenson (1974) (open and closed blue squares) and Anderson (Anderson, 1980) (open red circles).
Figure S4. Comparison of the present parametrization with values of $k_5$ reported by Anastasi and Smith (1976), who report 36% overall uncertainty in $k_5$ ($2\sigma$)
Figure S5. Comparison of the present parametrization with values of $k_3$ reported by Wine et al. (1979) where the error bars (2σ) represent total overall uncertainty.
Figure S6. Comparison of the present parametrization with values of $k_5$ reported by Brown et al. (1999) where the error bars (2σ) represent total overall uncertainty.
Figure S7. Comparison of the present parametrization with values of $k_5$ reported by D'Ottone et al. (2001) where the error bars (2σ) represent total overall uncertainty.
Figure S8. Comparison of the present parametrization with values of $k_5$ reported by Mollner et al. (2010). The reported 2 $\sigma$ (statistical) uncertainty is < 2% is within the symbol size.
Figure S9. Comparison of the present parametrization with values of $k_5$ reported by Donahue et al. (1997) where the error bars ($2\sigma$) represent total overall uncertainty.
Figure S10. Comparison of the present parametrization with values of $k_5$ reported by Dransfield et al. (1999).
References

Anastasi, C. and Smith, I. W. M.: Rate measurements of reactions of OH by resonance absorption. Part 5.-Rate constants for OH + NO₂ (+M) -> HNO₃ (+M) over a wide range of temperature and pressure, Journal of the Chemical Society, Faraday Transactions 2: Molecular and Chemical Physics, 72, 1459-1468, 1976.


