

| Section no. | Source of uncertainty | Relevant for srCIMS determination | Relevant for k_w determination | Relevant for ambient measurements |
|-------------|---|---|--|--|
| 3.1 | Changes in ambient pressure and temperature | | | Uncertainty around mean $\pm 0.17 \text{ s}^{-1}$ Maximum systematic deviation $\pm 0.4 \text{ s}^{-1}$ |
| 3.2.1 | Measurement of OH by CIMS | [OH] _{T1} median variability 1.5 % [OH] _{T2} median variability 2.7 % | | $\ln([\text{OH}]_{\text{T1}} / [\text{OH}]_{\text{T2}})$ typical uncertainty 7.1 % |
| 3.2.2 | OH reactant concentration in calibration gas mixture | Uncertainty in 1 % CO gas mixture = 2 % in OH reactivity Uncertainty in 0.2 % propane gas mixture = 5 % in OH reactivity | | |
| 3.2.3 | OH reactant contamination in calibration gas mixture | Not detectable here, see text. | | |
| 3.2.4 | OH reactant contamination in carrier gas (here synthetic air) | | $0.02 \pm 0.02 \text{ s}^{-1}$ Contamination level can vary, see text. | |
| 3.2.5 | NO contamination in all gas mixtures | For 0–40 s^{-1} , srCIMS overestimation 5 % For 20–40 s^{-1} , srCIMS overestimation 9 % For 0–20 s^{-1} , srCIMS overestimation 1 % | | NO up to 380 ppt in sample flow from SO ₂ gas mixture |
| 3.2.6 | OH kinetic rate constants | Uncertainty in srCIMS for CO 11 % Uncertainty in srCIMS for propane 5 % | | |
| 3.3 | Calibration using external glass flow tube | Jülich mean $9.1 \pm 0.4 \text{ s}^{-1}$ MOHp mean $9.7 \pm 0.5 \text{ s}^{-1}$ | Jülich mean $8.6 \pm 0.5 \text{ s}^{-1}$ MOHp mean $9.4 \pm 0.8 \text{ s}^{-1}$ | |
| 3.4 | Upper measurement limit | 40 s^{-1} | | 40 s^{-1} |
| 3.5 | Ambient NO leading to instrument internal HO _x recycling | NO up to 15 ppb, non-linear function, see text. | | NO up to 4 ppb, underestimation $0.8 \text{ s}^{-1} \text{ ppb}^{-1}$ |