

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 %		$\ln([OH]_{T1} / [OH]_{T2})$ 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 $0.8 \text{ s}^{-1} \text{ ppb}^{-1}$