

Reaction	Reaction rate constant	Reference
MCM*:		
R1: OH + MVK → HMVKAO ₂	$0.24 \times 2.6 \times 10^{-12} \exp(610\text{K T}^{-1}) \text{ cm}^3 \text{ s}^{-1}$	Praske et al. (2015)
R2: OH + MVK → HMVKBO ₂	$0.76 \times 2.6 \times 10^{-12} \exp(610\text{K T}^{-1}) \text{ cm}^3 \text{ s}^{-1}$	Praske et al. (2015)
HOCH ₂ CHO + OH → products	$8 \times 10^{-12} \text{ cm}^3 \text{ s}^{-1}$	Karunanandan et al. (2007)
MVK + O ₃ → OH + products	$0.16 \times 8.5 \times 10^{-16} \exp(-1520\text{K T}^{-1})$	Aschmann et al. (1996), Paulson et al. (1998)
M1 (includes MCM*):		
R3: HMVKBO ₂ + HO ₂ → HMVKBOOH	$0.34 \times 0.625 \text{ KRO2HO2}^a$	Praske et al. (2015)
R4: HMVKBO ₂ + HO ₂ → HMVKBO + OH	$0.48 \times 0.625 \text{ KRO2HO2}^a$	Praske et al. (2015)
R5: HMVKBO ₂ + HO ₂ → BIACETOH + OH + HO ₂	$0.18 \times 0.625 \text{ KRO2HO2}^a$	Praske et al. (2015)
M2 (includes M1 and MCM*):		
R7: HMVKAO ₂ → HO ₂ + BIACETOOH	0.003 s^{-1b}	This work
R8: HMVKBO ₂ (+X) ^c → HO ₂ + HOCH ₂ CHO +HCHO + CO	$(0.006 \pm 0.004) \text{ s}^{-1}$	This work
HOCH ₂ CO ₃ + NO ₂ → PHAN	0	This work