| Parameter | Description | Value |
|---|---|---|
| Condensed phase | | |
| $D_{p,S}$ | Surface-weighted middle diameter of initial dry particles | 125 nm (initial) |
| $\rho_p$ | Density of SOA | 1.3 g $cm^{-3}$ |
| $MW_p$ | Molecular weight of SOA | 175 g $mol^{-1}$ |
| GF | Hygroscopic growth factor | 1.1 (high RH) or 1.0 (low RH) |
| $\gamma$ | Uptake coefficient of OH and $HO_2$ | 0–1 |
| $p_{frag}$ | A combined probability for fragmentation | 0–1 |
| $k_{RO_2+RO_2}$ | Reaction rate coefficient of $RO_2\bullet + RO_2\bullet$ | $1 \times 10^{-21}$–$1 \times 10^{-15}$ $cm^3$ $molecule^{-1}$ $s^{-1}$ |
| $d_{SL}$ | Depth of surface layer | 0.76 nm |
| $D_{org}$ | Bulk diffusivity of SOA compound | $1 \times 10^{-16}$–$1 \times 10^{-11}$ $cm^2$ $s^{-1}$ |
| Gas-phase | | |
| $[OH]_g$ | OH concentration along the flow tube | 0–$1.84 \times 10^{11}$ molecule $cm^{-3}$-air |
| $[HO_2]_g$ | $HO_2$ concentration along the flow tube | Same as [OH] |
| $\bar{c}_{OH}$ | Mean speed of OH radicals | 610 m $s^{-1}$ |
| $\bar{c}_{HO_2}$ | Mean speed of $HO_2$ radicals | 440 m $s^{-1}$ |
| $D_{g,OH}$ | Diffusion coefficient of OH radicals | 0.21 $cm^2$ $s^{-1}$ |
| $D_{g,HO_2}$ | Diffusion coefficient of $HO_2$ radicals | 0.25 $cm^2$ $s^{-1}$ |