**Table 1.** Simulation parameter ranges.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Temperature  (℃) | Pipe diameter  (mm) | | Pipe length  (mm) | Inlet concentration (mol/m3) | Inlet flow velocity (m/s) |
|
| 110~150 | | 50 | 800~3000 | 0.02~0.04 | 3~5 |
| 80 |