**Parameters used in the time-dependent PRO model and the batch-mode MEC model.**

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| --- | --- | --- |
| **Parameters** | **Description** | **Value** |
| **PRO** | *A* | permeability coefficient | 1.20×10-7 m3 m-2 s-1 bar-1 |
|  | *B* | salt permeability coefficient | 1.39×10-7 m3 m-2 s-1 |
|  | *S* | support layer structural parameter | 0.0005 m |
|  | *D* | diffusion coefficient of NaCl in the membrane substrate | 1.48×10-9 m2 s-1 |
|  | *k*  | mass transfer coefficient  | 1.48×10-5 m3 m-2 s-1 |
|  | *i* | number of dissolved species  | 2 |
|  | *R* | ideal gas constant | 8.3145 J mol-1 K-1 |
|  | *a*  | membrane area | 0.014 m2 |
| **MEC** | *xe,max*  | maximum concentrations of exoelectrogens  | 438.9 mg-x L-1 |
|  | *xm,max*  | maximum concentrations of methanogens | 10 mg-x L-1 |
|  | *qe,max*  | maximum substrate consumption rates by exoelectrogens | 3 mg-S mg-x-1 day-1 |
|  | *qm,max*  | maximum substrate consumption rates by methanogens | 10 mg-S mg-x-1 day-1 |
|  | *Ke* | half saturation concentrations for exoelectrogens | 35 mg-S L-1 |
|  | *Km* | half saturation concentrations for methanogens | 80 mg-S L-1 |
|  | *KM* | half saturation concentrations for redox mediators | 0.01 mg-M mg-x-1 |
|  | *µe,max*  | maximum growth rates by the exoelectrogens  | 0.197 day-1 |
|  | *µm,max*  | maximum growth rates by the methanogens  | 0.1 day-1 |
|  | *Mtotal*  | total mediator fraction per exoelectrogen | 0.05 mg-M mg-x-1 |
|  | *YM*  | mediator yield | 22 mg-M mg-S-1 |
|  | *γ*  | mediator molar mass | 663400 mg-M mole-M-1 |
|  | *F* | Faraday constant | 96485 C mol-1 |
|  | *β* | buffer efficiency of the anolyte | 9.2730711×10-7 |
|  | *CE*  | coulombic efficiency  | 0.5731 |
|  | *YH2* | cathodic efficiency | 0.4748 |
|  | *Rmin*  | the lowest observed internal resistance | 90 Ω |
|  | *Rmax*  | the highest observed internal resistance | 2000 Ω |
|  | *KR*  | a constant that determines the curve steepness | 0.0818 L mg-x-1 |
|  | *ε* | a constant that affects the current | 0.0001 mg-M mg-x-1 |