

ABSTRACT

Title of Invention

Method of Membrane Separation

Abstract

Clogging of membrane by slime adhesion is efficiently prevented and stable treatment can be carried out for a long period of time at a low cost by a small amount of chemicals without the membrane deterioration and trihalomethane formation even if applied to the water having a large number of viable cell counts and having water quality of harsh. The method comprises supplying water to be treated to a membrane separation apparatus 4, adding intermittently to the water to be treated a combined chlorine agent comprising sulfamic compound, and repeating a non-addition feeding period in which water to be treated is supplied for 6 - 120 hours without addition of combined chlorine agent, and an intermittent addition feeding period in which water to be treated is supplied for 0.5 - 40 hours under addition of a combined chlorine agent at biofilm exfoliating concentration in an early stage of biofilm formation during the non-addition feeding period, wherein viable cell count (log CFU/mL) of water to be treated is 3 or more, and the concentration of the combined chlorine agent in the water in the intermittent addition feeding period is 0.5 - 20 mg/L as total chlorine, and additive amount of the combined chlorine agent added in the intermittent addition feeding period is the amount in which R represented by the following Formula [4] is 3 or more.

$$R = (\text{Intermittent addition feeding period (h)} \times [1000 \times \text{Intermittent addition concentration (mg-Cl/L)}]^{2.5} / (\text{Non-addition feeding period (h)}^{3.0} \times 10^{\log \text{CFU/mL}})) \quad [4]$$

Selective figure

Fig.1