



6-1. Introduction

Fouling of RO membrane is more or less a normal phenomenon of most RO systems since the pre-treatment of the feed water prior to the RO membrane is basically designed to reduce fouling substances as much as possible and technically could not remove all of them. Fortunately, with correct cleaning frequency, most foulants can be removed from the membrane. The cleaning frequency could be minimized as long as the pre-treatment is well maintained without upset conditions such as an uncontrolled change in feed water composition and uncontrolled biological contamination. Sometimes mistakes in the system operation such as too high recovery and failure of chemical dosing systems could end up with fouling the membrane.

The fouling of membrane surfaces results in lower permeate flow rate and/or lower salt rejection. Increased pressure drop between the feed and concentrate side can also occur from the fouling.

Cleaning the fouled membranes can be accomplished by suitable cleaning agents at alkaline (up to pH 12) and acidic (pH 2) conditions because Woongjin Chemical's CSM RO membranes are stable at the pH conditions and at an elevated temperature (45 °C).

Many foulants, particularly clay-type soils, can compact with time as the foulant layer increases in depth. As the foulants compact, it will become more difficult to remove them during cleaning. Thus the time of cleaning must not be delayed too long.