



## Operation guidelines for Cometas Aqua Solution membranes

### Preface

This document is written to achieve the best mode operation of water treatment systems utilizing Cometas Aqua Solution membranes.

A word about membrane pore size: The choice of membrane pore size depends on the choice of the following two operating strategies:

1. Pore plugging is not accepted – maximum pore size should be smaller than smallest particle in the media.
2. Pore plugging is accepted due to efficient backwash scheme – maximum pore size selected according to satisfying flow performance and frequency of backwash.

The following principles are recommendations to secure steady and economical filtration. The principles can be divided into three operation parameters:

1. Trans membrane pressure
2. Backwash frequency
3. Backwash modes

### 1) Trans membrane pressure (TMP)

It is recommended to operate at low TMP values (0.1 bar - 0.2 bar). This way the lowest cost per filtered volume, minimized compression of the suspended solids in the open channels and improved backwash efficiency are achieved.

You may gradually increase TMP as long as the requirements with regards to backwash efficiency are met. Backwash efficiency can be defined as the restoring of initial TMP and flux, and it is recommended to achieve 100% restoring of the flux.

### 2) Backwash frequency

It is recommended to operate the filtration system conservatively with regards to the backwash frequency – conservatively meaning high frequency of backwash. It is feasible to gradually decrease the backwash frequency as long as the requirements with regards to backwash efficiency are met. Backwash efficiency can be defined as the restoring of initial TMP and flux, and it is recommended to achieve 100% restoring of the flux.

The initial frequency of backwash is application dependent. Timing for backwash could for example be defined as the condition where TMP has increased by 20 % of the initial value.

### 3) Backwash modes

Backwash can be made in several different ways. Depending on the application, the following list can act as inspiration to a backwash scheme:

1. Backwash with permeate/tap water
2. Backwash with air
3. Backwash with a combination of air and permeate
4. Chemically enhanced cleaning