



6-5. Cleaning Chemicals

Choosing right cleaning chemicals is important since harsh and frequent cleaning will shorten the membrane life, and sometimes a wrong choice of cleaning chemicals can worsen the fouling situation. The cleaning will be more effective if it is tailored to the specific fouling problem. Therefore, the type of foulants should be determined prior to cleaning, there are helpful ways to determine the type of foulants as shown below:

- Analyze the plant performance data
- Analyze the feed water to find potential fouling substances
- Check the results of previous cleanings which may indicate specific fouling substances
- Analyze the foulants collected with a membrane filter used for SDI measurement
- Analyze the deposits on the cartridge filter

Table 5. Cleaning chemicals for CSM membrane

Foulant	Cleaning Chemical	Comments
Inorganic salts (CaCO ₃ , CaSO ₄ , BaSO ₄)	0.2% Hydrochloric Acid.	Best
	0.5% Phosphoric Acid.	O.K.
	2.0% Citric Acid.	O.K.
Metal Oxides (Iron)	0.5% Phosphoric Acid.	Good
	1.0% Sodium Hydrosulfite.	Good
Inorganic Colloids (silt)	0.1% Sodium Hydroxide (NaOH), 30 °C	Good
	0.025 Sodium Dodecylsulfate/0.1% NaOH, 30 °C	Good
Biofilms	0.1% Sodium Hydroxide, 30 °C.	Best
	1.0% Sodium Ethylene Diamine Tetra	Best when biofilm contains
	Acetic Acid (Na ₄ EDTA) and 0.1% NaOH, 30 °C	inorganic scaling
Organics	0.025% Sodium Dodecylsulfate/0.1% NaOH, 30 °C.	Good
	0.1% Sodium Triphosphate/1% Na ₄ EDTA	Good
Silica	0.1% Sodium Hydroxide, 30 °C.	O.K.
	1.0% Sodium Ethylene Diamine Tetra-acetic Acid	O.K.
	(Na ₄ EDTA) and 0.1% NaOH, 30 °C	