



Water Chemistry and Pretreatment

Fouling Prevention

Guidelines for Feedwater Quality

Table 1 summarizes the limits of quality parameters of the feedwater. It is recommended to respect these limits for successful operation of the membrane system. Otherwise, more frequent cleaning and/or sanitization may become necessary. The concentrations correspond to the entry to the membrane for a continuous feed stream, including any influences to the feedwater from dosing chemicals or piping materials in the pretreatment line.

Table 1: Guidelines for feedwater quality

Component	Unit	Max. level	Comments & conditions
SDI	1	5	See System Design (Form No. 45-D01580-en)
MFI _{0.45}	1	4	Target: < 1
Turbidity	NTU	1	See Colloidal and Particulate Fouling Prevention (Form No. 45-D01559-en)
Oil and grease	mg/L	0.1	See Prevention of Fouling by Organics (Form No. 45-D01573-en)
TOC	mg/L	3	Synthetic organic compounds (SOC) have generally more adverse effects on RO/NF membranes compared with natural organic matters (NOM). See Prevention of Fouling by Organics (Form No. 45-D01573-en)
COD	mg/L	10	
AOC	µg/l Ac-C	10	Target: < 5
BFR	pg/cm ² ATP	5	Target: < 1
Free chlorine	mg/L	0.1	Under certain conditions, the presence of chlorine and other oxidizing agents will cause premature membrane failure. Since oxidation is not covered under warranty, FilmTec™ recommends removing residual free chlorine by pretreatment prior to membrane exposure. - See Chlorination / Dechlorination (Form No. 45-D01569-en)
Ferrous iron	mg/L	4	pH < 6, oxygen < 0.5 ppm
Ferric iron	mg/L	0.05	
Manganese	mg/L	0.05	
Aluminum	mg/L	0.05	

Excerpt from [FilmTec™ Reverse Osmosis Membranes Technical Manual](#) (Form No. 45-D01504-en), Chapter 2, "Water Chemistry and Pretreatment."

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