



Antiscalant Selection and Operating Guidelines

Aquafeed Antiscalants (MC-1000, MC-1007, MC-1009, and MC-1011) are aqueous anionic polyelectrolyte solutions for use in reverse osmosis (RO) applications. Aquafeed Antiscalants inhibit the formation and growth of alkaline earth carbonate and sulfate scales, disperse suspended solids and colloids, stabilize metal ions, and inhibit the polymerization of silica and formation silicate complexes. The recommended Aquafeed Antiscalant for an RO system depends upon brine water chemistry, regulatory requirements, and membrane compatibility. The information below provides a means for selecting the most appropriate Aquafeed Antiscalant for an RO system. Additional information for MC-1000, MC-1007, MC-1009, and MC-1011 is presented in technical data sheets for these products.

1) Analyze: Analyze the RO brine water chemistry and determine the potential foulants. Given the potential foulants, select the most appropriate Aquafeed Antiscalant using the information below:

Potential Foulant	MC-1000	MC-1007	MC-1009	MC-1011
Calcium Carbonate	XXX	XXX	XX	X
Calcium Sulfate	XXX	XX	XX	O
Barium Sulfate	XXX	XX	XX	O
Strontium Sulfate	XXX	XX	XX	O
Silica/Silicate	O	XX	XXX	X
Metal (e.g., Al, Fe, Mn) Ions	O	XXX	XX	XXX
Suspended Solids and Colloids	X	XX	XX	XXX

Key: XXX = Excellent, XX = Good, X = Fair, O = Not recommended

- The recommended operating limits as a function of concentrate (brine) water chemistry for FCT Water's Aquafeed Antiscalants include:

Concentrate Parameter	MC-1000	MC-1007	MC-1009	MC-1011
LSI	+2.3	+2.6	+2.0	+1.5
Calcium Sulfate	250%	230%	230%	140%
Silica (ppm)	<150	<230	300+	<150
Iron (ppm)	<1.0	<5.0	<3.0	<5.0

FCT Water Treatment

1309 North 17th Avenue · Greeley, CO 80631
Main (970) 346.8002 · Fax (970) 346.8331 · National (800) 686.6504
www.fctwater.com



Antiscalant Selection and Operating Guidelines Continued...

2) Evaluate: Evaluate the regulatory requirements relating to the use of Aquafeed Antiscalants for an RO system. All four of the products above have NSF approval for use in potable water RO applications.

3) Compatibility: Determine the suitability of Aquafeed Antiscalants with specific membranes. The chart below provides a listing of FCT Water's Aquafeed Antiscalants and their compatibility with several membranes.

Manufacturer	Type/Model	MC-1000	MC-1007	MC-1009	MC-1011
Desal	CA	X	X	X	X
	1,2,3,5	X	X	X	X
DuPont	B-9	XX	XX	XX	XX
	B-10	XX	XX	XX	XX
FilmTec	FT30	XX	X	X	X
	FT70	XX	X	X	X
Fluid Systems	ROGA (CA)	XX	XX	X	X
	TFC	XX	XX	X	X
	TFCs	XX	XX	X	X
Hydranautics	PVD	XX	X	X	X
	CPA	XX	XX	X	X
	CAB (CA)	XX	X	X	X
	ESPA	X	X	X	X
	SWC	XX	X	X	X
Osmonics	CA	X	X	X	X
	PA	X	X	X	X
Toray	SU	X	X	X	X
Toyoba	Hollosep HA, HR, HM (CA)	X	X	X	X
	Hollosep HS	X	X	X	X
TriSep	A-15	XX	X	X	X
	ACM	X	X	X	X
	SB (CA)	X	X	X	X
	TS 80	X	X	X	X

Key to Compatibility of Products with Membranes:

XX = Membrane manufacturer has determined product is compatible when following FCT Water's "Directions for Use."

X = FCT Water has determined product is suitable when following FCT Water's "Directions for Use." However, the user should contact the membrane manufacturer.

The effectiveness of FCT Water's Aquafeed Antiscalants in preventing the fouling of RO membranes is dependent upon many factors. For further information or assistance please contact your FCT Water TEC-RO distributor, sales agent, or FCT Water at the web site noted on the preceding page.

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