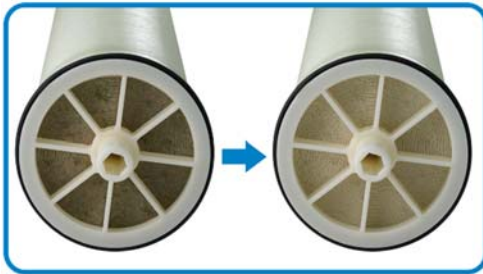


Membrane Cleaning and Support Chemicals

Applied Membranes, Inc. has formulated its own proprietary membrane cleaning chemicals. These products are a result of over 20 years of hands-on experience of our engineers and chemists. We offer technical expertise and assistance in troubleshooting and cleaning of RO membranes to give you an optimum system performance.



Example of Fouled vs. Cleaned Membrane

AMI[®] MEMBRANE CLEANERS

- ◆ AMI membrane cleaners are sold in powder form in 25lb containers. (Some are available in 5lb. containers as well.)
- ◆ Mixing and cleaning instructions, product specifications, and MSDS sheets are included with each container.

Model Number	To Remove	pH	For Membrane Type	Container Size
AM-11-25	Mineral Scale, Hardness, Iron, Barium Sulfate, Etc.	Acid	Thin Film (TF)	25 lb
AM-11-5				5 lb
AM-22-25	Biofilms, Organics	Alkaline	Thin Film (TF)	25 lb
AM-22-5				5 lb
AM-23-25*	Silica, Biofilms, Organics	Alkaline	Thin Film (TF)	25 lb
AM-33-25	Biofilm, Organics	Alkaline	CA/CTA	25 lb
AM-44-25	Hardness, Iron, Metal Scales	Acid	CA/CTA	25 lb
AM-55-25	Colloids(Silt), Biofilm, Organics	Alkaline	TF, CTA, MF, UF	25 lb
AM-99-25	Silica, Silicates	Acid	Thin Film (TF)	25 lb
AM-124-25	Iron Deposits	Acid	TF, CA/CTA	25 lb

MEMBRANE PRESERVATIVE AND SUPPORT CHEMICALS

Model Number	Description	Container Size
AM-88-25	Membrane Preservative for TF, CA, MF &UF Type Membranes	25 lb
AM-88-5		5 lb
AM-225	Glycerin Lubricant and Preservative	1 Gallon
PS-77*	RO System and Membrane Disinfectant	1 Quart

* Items marked with an asterisk are classified as DOT hazardous materials and cannot be shipped by UPS or by air. Can be shipped by ground common carrier or ocean shipment only.

Membrane Cleaning and Preservative Cartridges

BENEFITS OF MEMBRANE CLEANING CARTRIDGES:

- Clean Membranes Without Removing them from Your System
- Reduce Downtime
- Maintain Your System Performance at a Higher Level
- Prolong Membrane Life by Regular Use of Cleaning Cartridge
- Designed to Fit Standard and Big Blue Filter Housings in 10" & 20" Lengths
- For use on Thin Film Membranes in Systems up to 20,000 GPD

HOW DO THEY WORK?

Simply exchange the pre-filter cartridge in your system with a cleaning cartridge and run the system to flush the chemical into the membranes. Allow the solution to sit in the system overnight, then flush the chemicals to drain the next morning. We recommend a monthly cleaning to obtain optimum results.



MEMBRANE CLEANING CARTRIDGES ORDERING INFORMATION

Model Number	Contains Cleaning Chemical	To Remove	For Filter Housing Size	# of 4×40 Membranes Cleaned per Ctg.
C-C2510-A11	AM-11 (Acid)	Mineral Scale, Hardness, Iron, Barium Sulfate, Etc.	10" Standard	1
C-C2520-A11	AM-11 (Acid)		20" Standard	1 to 2
C-C4210-A11	AM-11 (Acid)		10" Big Blue	2 to 3
C-C4220-A11	AM-11 (Acid)		20" Big Blue	4 to 6
C-C2510-A22	AM-22 (Alkaline)	Biofilms, Organics	10" Standard	1
C-C2520-A22	AM-22 (Alkaline)		20" Standard	1 to 2
C-C4210-A22	AM-22 (Alkaline)		10" Big Blue	2 to 3
C-C4220-A22	AM-22 (Alkaline)		20" Big Blue	4 to 6
C-C2510-A23*	AM-23 (Alkaline)	Silica, Biofilms, Organics	10" Standard	1
C-C2520-A23*	AM-23 (Alkaline)		20" Standard	1 to 2

MEMBRANE PRESERVING CARTRIDGES

Cartridges are loaded with a pre-measured amount of our proprietary membrane preservative AM-88 to preserve system and membranes in-place for extended periods of system shut-down.

Model Number	Contains	For Filter Housing Size	# of 4×40 Membranes Preserved per Ctg.
C-C2510-A88	Membrane Preservative (AM-88)	10" Standard	1 to 2
C-C2520-A88	Membrane Preservative (AM-88)	20" Standard	2 to 4
C-C4210-A88	Membrane Preservative (AM-88)	10" Big Blue	2 to 4
C-C4220-A88	Membrane Preservative (AM-88)	20" Big Blue	4 to 8

Membrane Antiscalant Water Conditioners

AMI AS-102 Antiscalant is designed for use with commercial and industrial membrane water treatment systems.

ORDERING INFORMATION

Part Number	Volume	Weight
AS-102-45	5 Gallons (19 Liters) Bucket	45 lb (20 kg)
AS-102-500	55 Gallons (208 Liters) Drum	500 lb (227 kg)



ADVANTAGES

- A broad spectrum antiscalant designed to inhibit inorganic scale formation in membrane separation processes
- Inhibits calcium carbonate scale up to Calcium Carbonate Nucleation Index (CCNI) of 2.2
- Effectively inhibits formation of calcium sulfate, calcium fluoride, barium sulfate, strontium sulfate and silica
- Stabilizes metal ions to prevent metal oxides precipitation and disperses existing metal oxides/hydroxides, silt and clay particles
- Approved for use by all major membrane manufacturers
- Environmentally compatible, especially where discharge of waste into the environment is a concern

QUALITY STANDARDS

Certified by NSF to NSF/ANSI Standard 60 for Drinking Water Treatment Chemicals – Health Effects. Manufactured in an ISO 9001:2015 ISO certified facility in USA.



TYPICAL PROPERTIES

- Appearance: Clear colorless to yellow liquid
- Odor: Characteristic
- Solubility in Water: Complete
- pH (as-is) @ 25°C: 3-4
- Specific Gravity: 1.10 ±0.05

SAFETY AND HANDLING

Store in a cool, dry place. In accordance with good safety practice, handle with care and avoid contact with eyes and prolonged or repeated contact with the skin. AS-102 is not considered a DOT Hazardous Material. For more information, see the Safety Data Sheet provided with the product.

CHEMICAL FEEDING & CONTROL

Normally fed continuously prior to the final cartridge filter. It should be injected by chemical dosing pump from a dilution tank or directly from the drum to the feedwater line. The amount of AS-102 required to inhibit scale formation depends on the quality of the feed water and operational parameters of the membrane system. Refer to your membrane system operating manual, or consult with an Applied Membranes, Inc. water treatment technician for the specific control range and approximate dosage rate for your system.

ANTISCALANT & ANTIFOULANT PRODUCT SUPPORT

Flocon Antiscalant water additives, used as pretreatment for Reverse Osmosis systems, are highly effective in preventing membrane scaling. Applied Membranes carries a large inventory of Flocon Antiscalant at competitive prices with technical support. Our design engineers can help you determine the proper dosing for our application. Most products in stock for immediate shipment.



FLOCON 135 ANTISCALANT FOR RO SYSTEMS

Flocon 135 is an aqueous solution of a specialized phosphinocarboxylic acid, highly effective in controlling the deposition of inorganic scale forming salts on membrane surfaces.

- Excellent control of carbonate and sulphate scales for cost effective operation
- Compatible with all major membranes
- International potable water approvals
- Dispersant
- Iron tolerant

Ordering Information

Model Number	Container Size
AS-135-55	55 lb (25 Liters, 6.6 Gallons)
AS-135-500	475 lb (197.5L, 52 Gallons)

FLOCON 260 PREMIUM ANTISCALANT AND ANTIFOULANT

Flocon 260 is an aqueous solution of a specialized polycarboxylic acid, highly effective in controlling the deposition of inorganic scale forming salts and particulate fouling on membrane surfaces.

- Excellent control of carbonate scales, sulphate and fluoride for cost effective operation
- Effectively control both soluble and insoluble iron
- Effective against silica fouling
- Dispersant
- Compatible with all major membranes
- International potable water approvals

Ordering Information*

Model Number	Container Size
AS-260-500	475 lb (197.5L, 52 Gallons)

**Note: Flocon 260 is classified as DOT hazardous material and is not available for shipment by UPS or air. Available for common carrier or ocean shipment only.*

FLOCON 190 ANTISCALANT FOR REVERSE OSMOSIS SYSTEMS

Flocon 190 is a solution of an organic phosphonate. Flocon 190 is highly effective in controlling the deposition of inorganic scale forming salts on membrane surfaces.

- Excellent control of carbonate and sulphate scales for cost effective operation
- Will not adversely interact with polymeric coagulant aids
- Compatible with all major membranes
- International potable water approvals

Ordering Information

Model Number	Container Size
AS-190-500	475 lb (197.5L, 52 Gallons)

FLOCON PLUS N ANTISCALANT FOR SEAWATER REVERSE OSMOSIS SYSTEMS

Flocon Plus N antiscalant is a high performance liquid product, highly effective in controlling the deposition of inorganic scale forming salts on seawater membrane units (SWRO).

- Excellent control of carbonate and sulphate scales for cost effective operation
- Compatible with all major membranes
- International potable water approvals
- Dispersant

Ordering Information

Model Number	Container Size
AS-PLUSN-500	475 lb (197.5L, 52 Gallons)

Antiscalant & Antifoulant Product Support

Flocon Antiscalant Product Selection Guide

All Flocon products listed carry Potable Approval (NSF) and Membrane Manufacturer Approval.

Product	Description	Feed Water	Product Effective Against*													
			CaCO ₃ LSI	CaCO ₃ SDI	CaSO ₄	BaSO ₄	SrSO ₄	CaF ₂	Ca(PO ₄) ₃	Silica	Iron	Heavy Metals	Organics	Polymeric Coagulants	Silt/Clay	
Flocon 260	Premium Product, anti-foulant for unit operating at high recovery.	Brackish Water Sea Water Waste Water	E	E	E	E	E	E	E	E	E	E	E	E	G	E
Flocon 135	Scale inhibitor for unit operating at high recovery	Brackish Water Sea Water	E	E	E	E	G	G			E	G				E
Flocon Plus N	Inorganic scale inhibitor for SWRO	Sea Water	E	E	G	G	G	G			G	G				G
Flocon 190	Non Polymeric inorganic scale inhibitor	Sea Water, Waste Water	E	E	G	G	G	G			G	G			G	

E = Excellent

G = Good

* Flocon Products are not effective against Mg(OH)₂ or Boron

USING FLOCON

Dosing Information

The amount of Flocon required to inhibit scale formation depends on the degree of supersaturation of the insoluble salts at the point of highest concentration in the system. The degree of supersaturation in turn depends on the concentration of the ionic species in the feedwater, the overall salinity of the feed, the temperature of the feedwater, the percentage of the feedwater recovered as permeate and the type of membrane used for the application.

Flocon Solution Concentration*%	Amount of Solution to be Injected per 1,000 Gallons of Feed Water, In Gallons	
	3 ppm	5 ppm
100	0.003	0.005
50	0.006	0.010
20	0.015	0.025
10	0.030	0.050

* Use soft water or RO permeate to mix with Flocon.

Dose Method

Flocon should be added to a membrane system prior to the final cartridge filter. If media filtration or activated carbon is used, Flocon should be applied after these treatment stages.

Flocon should be delivered by dosing pump from a dilution tank, direct from the drum or from a bulk storage facility, into the feedwater at a rate that is determined by the size of the membrane system, the recommended dose rate and the delivery range of the dosing pump. It is recommended that the dosing pump be adjusted by the stroke length, while maintaining stroke frequency at a high level as possible to achieve even distribution of the Flocon in the membrane system feedwater.

CAUTION - Biological Activity:

Flocon contains a preservative that is effective up to a dilution of 1 part Flocon to 15 parts of system permeate water. General periodic cleaning of the dosing system is recommended as part of the planned maintenance program.