

# Roth's Filtration Chemicals

(Phosphonate based chemistry)  
RO/NF/EDR Antiscalant / Antifoulant



**“An Innovative technology to protect  
your system”**





# ABOUT

Roth's Filtration Chemicals are multifunctional antiscalant for Reverse Osmosis (RO), nanofiltration (NF) and Electro-dialysis Reversal (EDR) systems.

It is highly effective in preventing calcium carbonate and silica scale on membrane surfaces.

Besides its excellent calcium carbonate & Silica scale inhibition it is effectively controlling calcium sulphate, calcium phosphate, strontium sulphate, barium sulphate, calcium fluoride and metal oxides scale.



# ADVANTAGES

- Complete range of antiscalant, cleaners & defoamers for all water/wastewater treatment membrane & thermal applications (RO, NF, UF, MEE, MED, MSF)
- **Highly effective fouling/scale control in broad spectrum of water/wastewater quality at low dosages during operation or preservation**
- Will reduce & usually remove acid addition
- Will usually increase product output, reduce offline cleaning, decrease unscheduled system upsets & downtime
- Compatible with all major membrane types (TORAY, DOW, LG & Hydranautics) & NSF certified composition
- **Advanced scale prediction software to provide antiscalant dosage projection**
- High grade, consistent quality cleaners suitable for membrane application, harsh on foulants/scalant but gentle on membrane
- **Detailed technical support capabilities, backed up by sophisticate lab in Arese, Italy**
- More than 2 decade experience in filtration chemicals

# RO Antiscalants

*Innovative water solution from Roth Specialities*

***RO Antiscalants : Rothclean-340 / Rothclean-350 & Rothclean-750 (Silica)***

Foulants	Index	ROTH's Antiscalants saturation limit
Calcium Carbonate	*L.S.I.	+2.8
Calcium Sulfate	#IP <sub>b</sub> /K <sub>Sp</sub>	5.5
Barium Sulfate	#IP <sub>b</sub> /K <sub>Sp</sub>	150
Calcium Fluoride	#IP <sub>b</sub> /K <sub>Sp</sub>	120
Calcium phosphate	#IP <sub>b</sub> /K <sub>Sp</sub>	4.5
Silica	~S.C.R.	2.5 (~412 ppm)

\*Langelier saturation Index, #Ion product in brine/solubility product of salt, ~SCR=Silica concentration ratio at 165 ppm SiO<sub>2</sub>, 7.5 pH, 25°C

# Antiscalant Doses Projection Software

### AntiScalant Project Report

**PROJECT DATA**

<b>Project Number</b>	2020-ROTH-0058	<b>Analytical Unit</b>	ppm
<b>Analyst</b>	Kaail	<b>Water Source</b>	Well Water
<b>Location</b>	XXXXXXXXXX	<b>Membrane</b>	Thin Film High Rejection(99.00)
<b>System Flow Rate</b>	50m <sup>3</sup> /hr	<b>Drinking Water Approval</b>	True
<b>Temperature</b>	25.0degC	<b>Sulfuric Acid Replacement</b>	False
<b>pH</b>	7.4	<b>Boron Removal</b>	False
<b>Date</b>	10/8/2020 12:38:54 PM		
<b>System Recovery</b>	70 %		
<b>Stage</b>	1to40		
<b>Notes</b>	Via Roth		

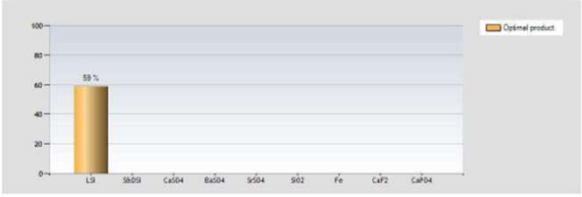
pH Change -  
Acid Type -  
System Recovery Change -

**WATER ANALYSIS**

CATIONS				ANIONS			
	ppm	meq/l	ppm CaCO3		ppm	meq/l	ppm CaCO3
Calcium	105.50	5.28	263.75	Bicarbonate	285.20	4.68	233.86
Ferrous Iron	0.08	0.00	0.14	Carbon Dioxide	16.30	0.74	37.15
Magnesium	63.30	3.15	259.54	Chloride	252.60	7.12	356.17
Sodium	60.00	2.61	130.80	Fluoride	0.17	0.01	0.45
				Nitrate	16.40	0.26	13.28
				Sulfate	54.80	1.14	56.99
	228.88	13.08	654.22		609.70	13.23	661.63

**SATURATION INDEXES AND THE PERFORMANCE OF THE OPTIMAL PRODUCT**  
The optimal recommended product | ROTHCLEAN-350MA-01

	Value	Treatment	Optimal Product
LSI	1.69	✓	59 %
SI-DSI	1.56	✓	-
CaSO4	0.08	✓	-
BaSO4	0.00	✓	-
SrSO4	0.00	✓	-
SiO2	0.00	✓	-
Fe	0.00	✓	-
CaF2	0.09	✓	-
CaPO4	0.00	✓	-



59 %

**ROTH TREATMENT**

Treat feed water with: ROTHCLEAN-350 MA-01 at 2.2 ppm dosage. The daily requirement of RC-350 : 2.62 kg/day. The current feedwater pH: 7.40.

# Membrane Cleaning Chemicals

- Roth's cleaners are general purpose membrane cleaner.
- It is effective against Inorganic scale and most organic foulants typically found in Reverse Osmosis (RO), nanofiltration (NF) systems.
- An effective cleaner for a wide range of inorganic salts and organic based foulants.
- Effective against aluminium based, Iron deposit, clay and colloidal silica foulants.
- Liquid product easy to use.
- Can be used with polyamide and cellulose acetate membranes.

ROTH's RO/NF Cleaner Range								
	CaCO3	CaSO4	CaPO4	Silica	Metal Oxides	Organics & Slime	Microbes	Clays
<b>ROTH Alkaline</b>		Effective		Effective				Effective
<b>ROTH Acidic</b>	Effective		Effective		Effective			
<b>ROTH Biocide</b>						Effective	Effective	Effective



# APPLICATION

- The dosage level of Antiscalant is dependent on the quality of the feedwater and the saturation indices of the various scales forming species present in the concentrated brine.
- Recommended injection point is into the feedwater, downstream of any filtration equipment and cartridge filters.
- It is miscible with water in all proportions. It may be applied as neat product, or as a solution in permeate water.
- A minimum dosing solution strength of 10% is recommended. It should be dosed continuously and proportionally to the feed water flow.

Our Sales Engineer will advise you with regard to the specific dosage requirements for your system.



# Thank You

## Rothclean is a unique water chemistry at an affordable price

### Roth Specialities India Pvt. Ltd.

(ISO 9001:2015 , ISO 14001 : 2015 & GMP Certified Co.)

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