



Products & Services Offering

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Antiscalants:

Each NF/RO system is unique, and requires a tailored chemical approach based on the incoming feed water quality. PWT's dendrimer-based antiscalant technology offers a phosphate free alternative reducing the negative impact on the environment. PWT's phosphate-free technologies are available in concentrated form, reducing shipping and storage requirements by 90%. Our full line of proprietary antiscalants offers a comprehensive solution to maximize the efficiency, economy, and longevity of your system.

Antiscalant Selection Guide:

★★★ = excellent control
★★ = average control
★ = moderate control

Product	Spectra Guard™ 100	Spectra Guard™ 250 ¹	Spectra Guard™ 350	Spectra Guard™ 360	Titan ASD™ 200
CaCO ₃	★★★	★★★	★★★	★★★	★★★
CaSO ₄	★★★	★★★	★★★	★★★	★★
BaSO ₄	★★★	★★★	★★★	★★★	★★
Fe/Mn	★	★★★	★	★★★	★
CaHPO ₄	★	★	★★	★★★	★
SiO ₂	★★★	★	★★★	★★★	★★
Phosphate Free	✓				✓
NSF 60	✓	✓	✓	✓	✓

¹Preferred product in the presence of cationic polymers.

Membrane Autopsy services: PWT's Membrane Forensics department offers non-biased expert evaluation and inspection of Microfiltration, Ultrafiltration, Nanofiltration and Reverse Osmosis membranes. Membrane autopsies include the physical dissection of a membrane module or element, in-depth analytical testing, result interpretation, and reporting. Careful examination of an element provides invaluable information on items such as foulant composition, mechanical integrity, and strategies for foulant removal.

Why Perform a Membrane Autopsy?

- ✓ Identify the exact foulants present on the membrane
- ✓ Determine the ideal cleaning regimen
- ✓ Improve overall system performance

Membrane Cleaning services: Professional Water

Technologies™ Membrane Forensics department offers various options for optimizing cleaning procedures of membrane systems. Improved cleaning regimens can reduce system down time, chemical costs, labor demands, and discharge management all while improving overall system performance. PWT has developed a comprehensive offering to satisfy all situations.

Field services:

- System performance audit
- System optimization and monitoring
- Pilot Studies
- System operation and maintenance assistance
- Operator training
- Troubleshooting

Membrane Cleaners: Fouling is often an unavoidable side effect of membrane filtration and membrane separations, and effective foulant removal during cleanings is crucial to maximize system performance and membrane life. Whether it is organic, biological, metal oxide, and/or inorganic scale, PWT's full line of proprietary membrane-safe cleaners help keep your system operating efficiently.

Cleaner Selection Guide :

Product	Target pH	Product Application			
		Colloids /Organics / Biological	Silica	Inorganic Salts	Metal Hydroxides
LAVASOL – LIQUID CLEANERS (Typically diluted as 2% by volume)					
Lavasol 1	3.3			✓	✓
Lavasol 2	10.2	✓			
Lavasol 5	3.0		✓ ✓	✓	
Lavasol 6	2.0			✓ ✓	✓
Lavasol 7	12.5	✓ ✓			
Lavasol 8*	12.3	✓ ✓			
Lavasol 9	11.9	✓ ✓			
OPTICLEAN – POWDER CLEANERS (Typically diluted as 1% by weight)					
OptiClean A	3.2			✓	✓
OptiClean B	11.3	✓ ✓			
OptiClean D	3.9			✓	✓ ✓
OptiClean F	12.3	✓ ✓			
OptiClean H	2.0			✓ ✓	✓
OptiClean J	10.9	✓ ✓			
OptiClean S	3.0		✓ ✓	✓	

*Contains free chlorine and should only be used on chlorine tolerant membranes.

Antifoulants: PWT developed a proprietary line of antifoulant chemistries to minimize the adhesion of organic and biological foulants to the membrane, helping increase membrane life. Ask about our [BioGuard™](#) and [OrganoGuard™](#).

Membrane Preservatives: During extended shutdowns, preserving a membrane system properly is crucial to not only maintain membrane integrity, but also ensure quick and easy system start-up. Protect your system with PWT's specialty membrane preservatives [Preservol™](#) and [RO Store](#).

Coagulants / Filter Aids: Coagulation/flocculation chemistry has been used in conventional treatment for hundreds of years, but recently is being used with increasing frequency to improve the efficiency of MF/UF systems. PWT's [FiltRx™](#) line of coagulants and flocculants can help improve system operation, and our unique [ClearlogX®](#) control technology minimizes the potential for under- or over-dosing.

Biocides: PWT's range of membrane-safe, non-oxidizing biocides and fungicides rapidly control the growth of fungi, yeast, bacteria, and algae. Providing broad spectrum control, [BioGuard™ Shock](#) and [BioGuard™ ISO](#) can be applied intermittently as a clean in place (CIP), or continuously for enhanced biological control.

ProDose XPRT™ – Scaling Prediction Software

ProDose XPRT™ uses the most accurate scaling prediction calculations available to accurately determine effective antiscalant dosage, and cleaning chemical usage. The user can enter multiple cases to study various operating conditions, directly enter concentrate analysis, and select the best PWT product and dosage for the application.

ProDose XPRT™ is available upon request only. Please contact your PWT representative for more information.

The screenshot displays the PWT ProDose software interface. At the top, there is a header with the PWT logo and a navigation bar with tabs for UNITS, TEMPERATURE, FERMEATE FLOW, RECOVERY, ANTISCALANT, DOSAGE, SOURCE, PROJECT NAME, and CASE. Below this, a summary bar shows values: US, Fahrenheit, 81.00, 75.0 %, SpectraGuard Liquid, 2.95 PPM, Well Water, Project 1, and 1.

The main interface is divided into several sections:

- PROJECT INFORMATION:** A sidebar menu with options for PROJECT INFORMATION, WATER QUALITY, SYSTEM INFORMATION, CHEMICAL SELECTION, CALCULATIONS, and REPORT.
- OVERVIEW:** A form with fields for CLIENT NAME (City of San Diego), PROJECT NAME (Project 1), LOCATION, PREPARED BY, DATE (5/1/2016), and WATER TYPE (Well Water).
- MEASUREMENTS:** A section for setting PRESET UNITS (CGS, Metric, U.S.), TEMPERATURE (Deg F), FLOW RATES (Gal/min), and MASS UNITS (lb). An Enter button is present.
- COMMENTS (OPTIONAL):** A large text area for user comments.
- TOTAL CASES (1 AVAILABLE):** A table with a 'Max 9' indicator and a '+' button. The table has columns for 'Cases' and 'Modified Date'. One case is listed with ID '1' and date '5/27/2016'. Below the table is a 'Selected Case Description' field.

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