RXSOL

CHEMO PHARMA INTERNATIONAL

Technical Data Sheet (TDS)

RXSOL-33-3321-250
RO Antiscalant ALKA 191T

PRODUCT DESCRIPTION AND APPLICATION

ORG - 191 t (Membrane Antiscalant) combines the product reliability of **ORG - 191 t (Membrane Antiscalant)** with advanced monitoring and control. **ORG - 191 t (Membrane Antiscalant)** is a highly effective scale inhibitor whose active components were developed to treat reverse osmosis (RO) systems. **ORG - 191 t (Membrane Antiscalant)** has shown for over 20 years excellent performance against the following scalants: calcium carbonate, calcium sulfate, barium sulfate, strontium sulfate, calcium fluoride, silica and iron.

Scaling and iron fouling of the RO membranes will reduce system performance and lead to premature membrane replacement. Precipitation of scale and deposits build up on the RO membrane, which leads to poor permeate quality, low permeate production, unscheduled downtime, increased water consumption and increased energy costs.

For RO units with a feedwater flowrate of 545m3/day (100 GPM) or less, the recommended product would be **ORG - 191 t (Membrane Antiscalant)**

ORG - 191 t (Membrane Antiscalant) is used when the silica level in the brine is less than 185 mg/l at a brine pH of 7.5 and temperature 25oC (77oF). For higher silica levels, the recommended product is **ORG - 191 t (Membrane Antiscalant)**.

PHYSICAL & CHEMICAL PROPERTIES

These properties are typical. Refer to the Material Safety Data Sheet (MSDS) SECTION 9, for the most current data.

Color:	Clear, Yellow
Form:	Liquid
Odor:	Slight ammonia smell
Density:	11.33 lb/gal
Specific Gravity @ 25oC (77oF):	1.36
pH (Neat):	10.5
Freeze-Thaw Recovery:	Complete
Viscosity @ 25oC (77oF):	20 cp
Flash Point (PMCC):	None
Solubility in Water:	Complete
Freeze Point:	32oF (0oC)

Volatile Organic Compounds (VOC):	0%

ACTIVE CONSTITUENTS

Proprietary Sequestering Agent

MATERIALS OF COMPATIBILITY

Compatible	Not Compatible
Stainless Steel 304	Brass
CPVC Piping	Neoprene*
Polyethylene	Hypalon*
Polypropylene	Buna-N*
Plasite 4300	Polyurethane
Plasite 7122	EPDM* Viton

All membrane elements based on Polyamide chemistries including

Thin Film Composite (TFC) membranes when used as directed

* O-rings are acceptable for static applications. If fitting is opened, O-ring must be replaced.

DOSAGE AND FEEDING

ORG - 191 t (Membrane Antiscalant) be fed continuously to minimize precipitation of scale and fouling of RO and nanofiltration membranes. The feedpoint location should be as close to the RO membrane as practical but one that ensures good mixing with the feedwater prior to entering the RO system. Typically, this is before the cartridge filters.

All new installations of ORG - 191 t (Membrane Antiscalant) should begin with a 2 week monitoring phase during which current operating conditions should be maintained (i.e. setting pumps manually based on stroke length and frequency). After this evaluation period, TRASAR-based control of the system should be instituted using the recommended pump.

It is preferred to feed **ORG - 191 t (Membrane Antiscalant)** neat via a closed feed system to prevent contamination from foreign material (a closed feed system being defined as a system in which fluid is moved from a closed storage vessel into a treated media without exposure to the atmosphere, except through normal venting or pressure relief devices).

ORG - 191 t (Membrane Antiscalant) can be diluted using RO permeate (only) following these guidelines:

1. Use RO permeate for dilution.
1. Prepare a fresh antiscalant solution every 3-5 days.
1. Inspect the antiscalant day tank before adding the new solution. If needed, the antiscalant tank should be cleaned prior to filling.
1. Dilution rates up to a factor 10 are typically applied. Dilution factors higher than 10 will require more attention with respect to the condition of the antiscalant tank (cleaning) and preparation of a new solution (every 1-3 days).

1. NaOH can be added to the dilution to increase the pH to 10-11. This is especially recommended for warm environments to prevent bio-growth.

ORG - 191 t (Membrane Antiscalant) dosage is dependent on feedwater chemistry, membrane type, and system operating parameters (e.g., recovery, temperature and pressure). These parameters determine the potential foulant that is likely to foul the membrane elements.

To determine the optimum product dosage for your system, it is recommended that you use the RO **Optimizer** chemical projection computer program. This program will select the appropriate scale inhibitor treatment program and calculate the recommended dosage based on the RO design and operation as well as feedwater or brine chemistry. This program will do all calculations for you easily and automatically.

CONSEQUENCES OF OVERFEED
Overfeed of **ORG - 191 t (Membrane Antiscalant)** will result in higher chemical cost.

CONSEQUENCES OF UNDERFEED
Underfeed of **ORG - 191 t (Membrane Antiscalant)** will result in poor scale inhibition. This will lead to fouled RO membranes, and reduced system performance and/or premature membrane replacement. In RO units, scaling is typically seen in the tail-end elements that have the highest reject concentration (4:1 for a 75% recovery system).

ENVIRONMENTAL AND TOXICITY DATA

Refer to SECTION 11 and 12 of the Material Safety Data Sheet (MSDS) for all available mammalian and aquatic toxicity information.

	ppm/ppm product
Biological Oxygen Demand (5-day BOD5)	Not Available
Chemical Oxygen Demand (COD)	Not Available
Total Organic Carbon (TOC)	Not Available

SAFETY AND HANDLING

Before using **ORG - 191 t (Membrane Antiscalant)** please refer to SECTION 8 of the Material Safety Data Sheet (MSDS) for proper personal protective equipment (PPE) and SECTION 3 for health effects.

STORAGE

ORG - 191 t (Membrane Antiscalant) has a suggested in-plant storage limit of one year. The suggested maximum storage temperature is 100oF (38oC). Refer to the Material Safety Data Sheet (MSDS), SECTION 7, for the most current data.

REMARKS

please see the Material Safety Data Sheet for USES and SAFETY

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