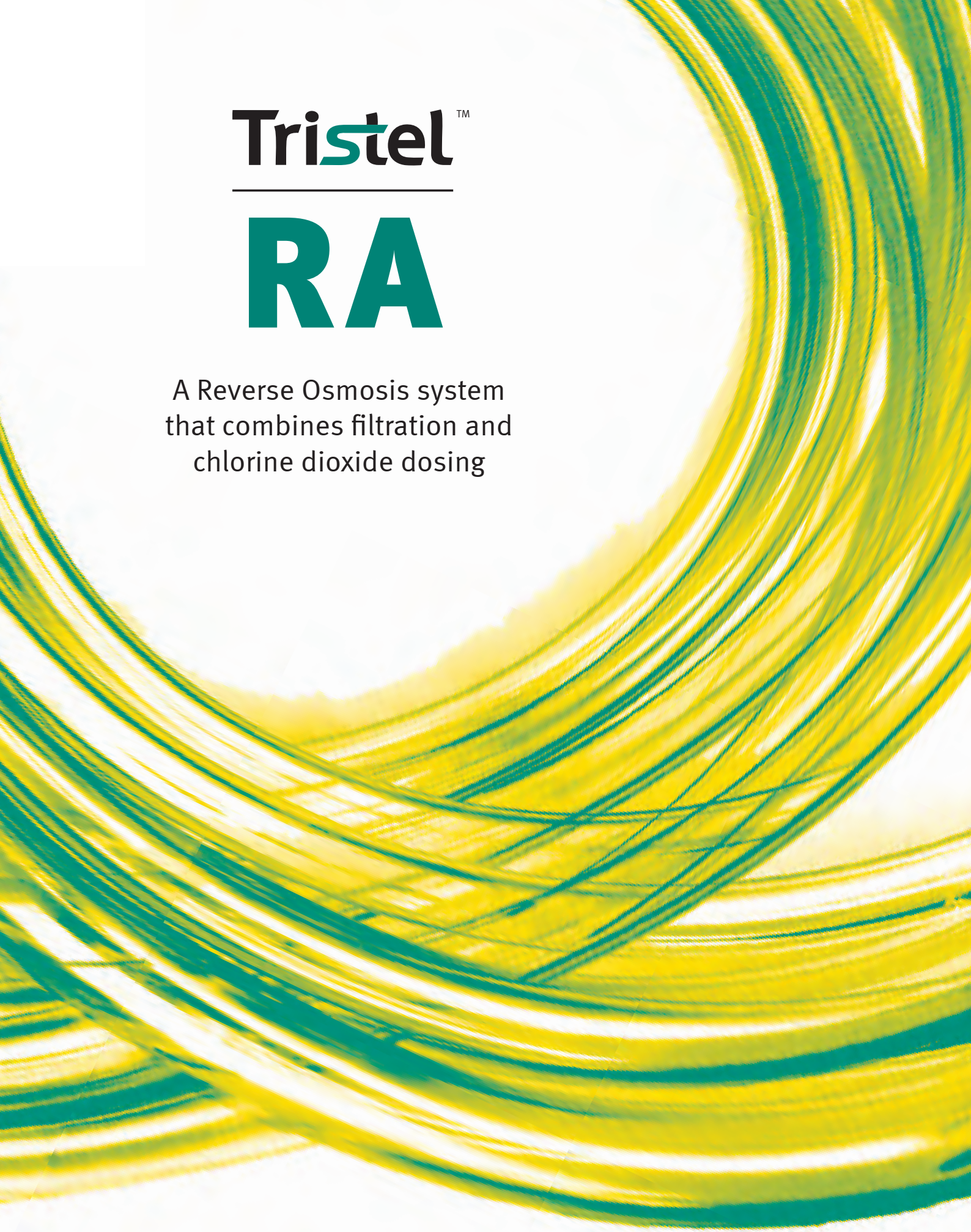
Tristel™

RA

A Reverse Osmosis system that combines filtration and chlorine dioxide dosing



Tristel RA (Rinse Assure) is a Reverse Osmosis (RO) system that combines filtration and chlorine dioxide (ClO_2) dosing. It is specifically designed to be connected to an Endoscope Washer Disinfector (EWD).

Tristel RA is a 3-in-1 system:

It filters particles down to 0.2µm through a three-stage filtration process.

It treats incoming water through an RO membrane.

It doses this water with low levels of Tristel's proprietary ClO_2 chemistry.

Tristel RA doses low concentrations of Tristel's proprietary chlorine dioxide (ClO_2) chemistry into the incoming water supply used during an EWD's decontamination cycle. Dosage levels can be altered depending on the expected bioburden and in relation to the amount of water flowing through the system. Tristel RA prevents bacterial proliferation and biofilm formation and protects the washer's filter and rinse water from contamination.

ASSURED

Can be used with EWDs manufactured by:

- Cantel
- Getinge
- Medivator
- Olympus
- Soluscope
- Wassenburg

BENEFITS

- Can be at a five metre distance from EWD
- Remote Logging
- Performance History
- Track and Trace

MOBILE

- Easily transported to accommodate anywhere

Tristel RA provides microorganism-free water, enables successful prevention of cross contamination within plumbing and filtrations systems.

Nelson Laboratories (Nelson Labs) is a leading United States laboratory used by medical device companies, including EWD companies, for disinfectant testing[1]. The effectiveness of Tristel RA was evaluated by Nelson Labs under Good Laboratory Practice (GLP) test conditions.

Tristel RA was challenged with a high bioburden (>10^6 CFU/mL) of biofilm forming species *Mycobacterium terrae* and *Pseudomonas aeruginosa*. Organisms were injected directly into the tank of Tristel RA representing a worst-case contamination scenario. The Tristel RA cycle was run, and a >6 $\log_{10}$ reduction of both *M. terrae* and *P. aerugionsa* was achieved[2].

1. Nelson Labs, 2019 https://www.nelsonlabs.com/our-company/ Accessed: 04/03/2019
2. Pace (2017), 'Tristel Rinse Assure Disinfection Study GLP Report', Nelson Laboratories

Tristel™ RA

RA IS THE NEW RO

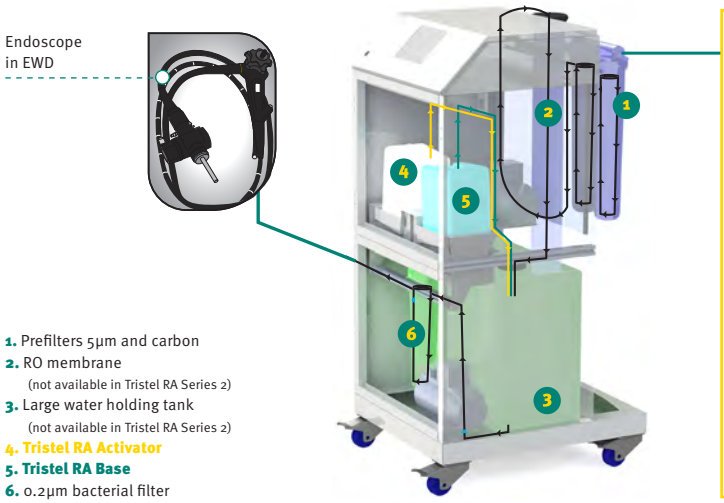
EFFECTIVE

TRISTEL RA IS MORE EFFECTIVE, MORE ECONOMICAL AND MORE RELIABLE THAN RO, BECAUSE:

- **RA** PREVENTS BIOFILM. RO DOESN'T.
- **RA** PROVIDES BACTERIA-FREE WATER. RO DOESN'T.
- **RA** REMOVES >6 LOG OF MYCOBACTERIA AND *PSEUDOMONAS* CONTAMINATION FROM INCOMING WATER SUPPLY. RO DOESN'T.
- **RA** PROACTIVELY PROTECTS AGAINST DEAD VOLUMES BETWEEN RA AND EWDs. RO DOESN'T.
- **RA** DOSES CHLORINE DIOXIDE. RO DOESN'T.
- **RA** ACTIVELY PREVENTS MICROBIAL PROLIFERATION. RO DOESN'T.
- **RA** SAVES TIME, SPACE AND MONEY. RO DOESN'T.

Water delivered by Tristel RA is compliant with the relevant parts of the following industry standards and guidelines:

- EUROPE: EN 15883
- UK: HTM 01-06
- USA: AAMI TIR:34:2014
- AUSTRALIA: AS/NZS 4187



1. Prefilters 5µm and carbon
2. RO membrane
(not available in Tristel RA Series 2)
3. Large water holding tank
(not available in Tristel RA Series 2)
4. **Tristel RA Activator**
5. **Tristel RA Base**
6. 0.2µm bacterial filter

CHLORINE DIOXIDE

Tristel RA doses low levels of Tristel's proprietary chlorine dioxide chemistry into the incoming water supply used during an EWD's decontamination cycle. This biocide is generated by mixing Tristel Base Solution (citric acid) and Tristel Activator Solution (sodium chlorite) at point of use. Chlorine dioxide is compatible with all materials within an EWD at the concentration dosed by Tristel RA.

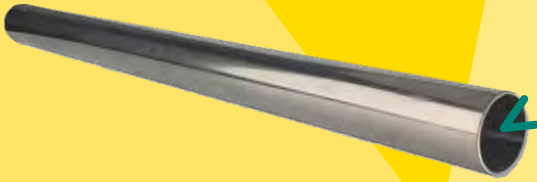
Chlorine dioxide as dosed by Tristel RA does not damage endoscopes and does not affect the chemical composition and efficacy of detergents (including enzymatic) and disinfectants (including peracetic acid) commonly used in EWDs.

Scientifically derived data demonstrates that Tristel RA-dosed chlorine dioxide does not pose any significant toxicological risk from any residue left on reprocessed endoscopes.

RA PREVENTS BIOFILM

Contaminated water is likely when using filters or RO alone, leading to the formation of biofilm. Filters and RO do not encompass Tristel RA's ongoing disinfection properties through the dosing of chlorine dioxide.

Chlorine dioxide dosed from Tristel RA prevents biofilm formation within device channels, plumbing and filtration systems.



Source: Pacific Northwest National Laboratory

SIMPLE OPERATION

Tristel RA requires minimal user input and is simple to operate. A password-secured touch screen enables you to log data, review bottle fill levels, set dosing parameters and handle any alarms. The screen can be mounted onto Tristel RA or placed in a central unit for remote operations.

Tristel RA can work with multiple EWDs, from endoscopy units to small private clinics. Tristel RA can be installed into a new unit or alongside a failing RO system or EWDs to overcome water sampling issues.

PRODUCT OPTIONS

- Tristel RA Series 2: Filtration and chlorine dioxide dosing
- Tristel RA Series 3: Filtration with RO (50 litre tank) and chlorine dioxide dosing
- Tristel RA Series 3+: Filtration with RO (85 litre tank) and chlorine dioxide dosing
- Tristel RA Series 4D: Filtration with RO (210 litre tank) and chlorine dioxide dosing Duplex configuration
- Tristel RA Series 5: Filtration with RO (500 litre tank) and chlorine dioxide dosing Optional duplex configuration

PROVEN EFFECTIVE

Tristel RA was trialled in the Endoscopy Department of a hospital in Wales, United Kingdom. Prior to installation, three laboratories took full water samples to assess current quality of water supplied to four EWDs. Results showed high Total Viable Counts (TVC) after two days, some as high as 236. TVCs increased to more than 900 after five days.

Tristel RA was installed to dose two of four EWDs in the department. Two remaining EWDs continued to operate as usual to act as control bays. Once the installation of Tristel RA was complete, several high dose cycles were run to purge the EWDs. Daily samples were taken by the hospital and sent to three laboratories for testing.

Five days after installation, test results for water treated by Tristel RA showed zero TVCs.

Numerous hospitals with out-of-action EWDs have come back online with the installation of Tristel RA.

Tristel™

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For Tristel patent information please visit: http://www.our-patents.info/tristel

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Tristel™

WE HAVE CHEMISTRY.