

Safety in use

Bioclear is pH neutral and is not classified as hazardous for use. (MSDS data sheet available).

Material compatibility

Bioclear is non-tainting and has been tested on silicone tubing, pvc tubing, copper, brass and aluminium.

Bioclear achieves microbiological testing in accordance with EN13727 for efficacy against:

- Staphylococcus aureus
- Pseudomonas aeruginosa
- Enterococcus hirae
- Escherichia coli

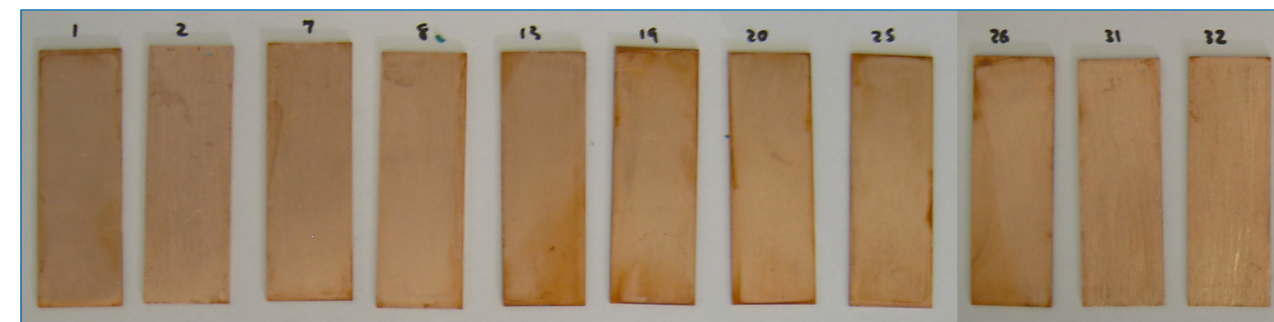
Bioclear is manufactured using biodegradable surfactants.

In a test to simulate contact in a DUWL between metal components and liquids that may be present in the system, copper strips were used to demonstrate the effects of water, sodium hypochlorite and Bioclear.

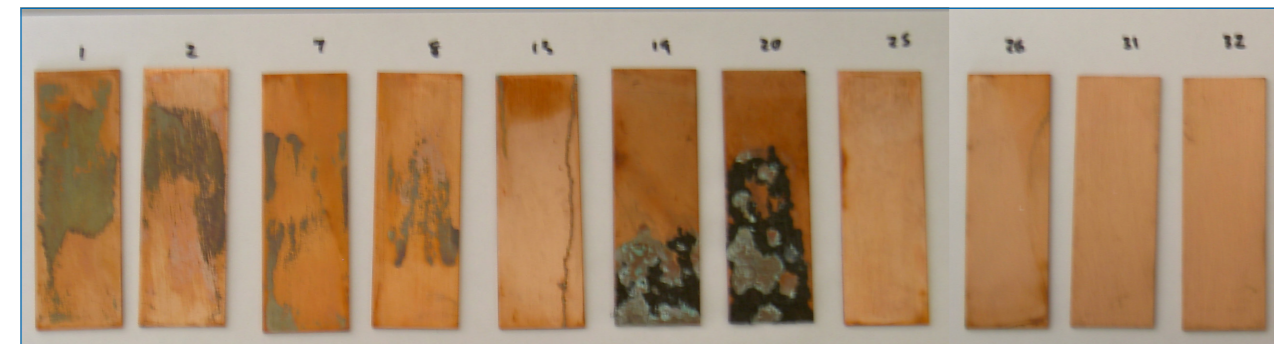
Water was selected as the negative control as it will normally be present in DUWL systems at all times. Sodium hypochlorite was selected as the positive control as it is known to be chemically aggressive to metals and is suggested by the Department of Health as a possible chemical for use as a biofilm remover.

The following photographic records were made and clearly show that Bioclear does the least visual damage to the copper.

Before test



After test



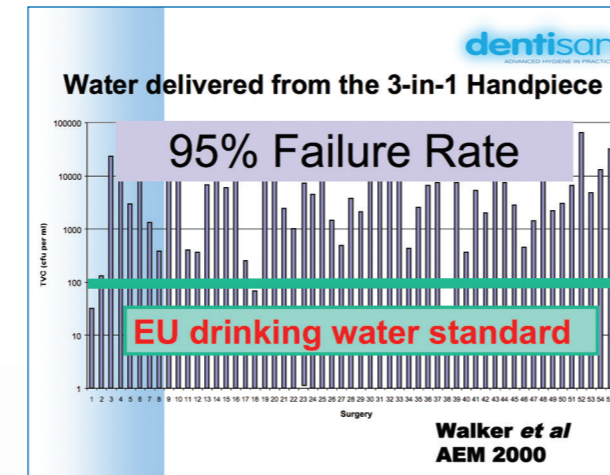
Negative control
Mains water

Positive control
Hypochlorite at 2%

Bioclear

Dental unit water lines - How clean are yours?

The graph below clearly shows the challenge of managing DUWLs within HTM 01-05 guidelines. In the study by Walker et al 2000, 95% of samples had contamination levels above the current standard for EU drinking water.



BIOCLEAR®

Order from:

London: **08700 10 20 43**

Glasgow: **0141 952 9911**

Cardiff: **029 2044 2888**

Belfast: **028 9037 0702**

www.henryschein.co.uk

Use biocides safely. Always read the label and product information before use.

dentisan®
INNOVATION, EDUCATION, COMPLIANCE

Dentisan®
Quadrallene Ltd.
Bateman Street,
Derby, DE23 8JL
Tel: 01332 268526
Fax: 01332 295941
info@dentisan.co.uk
www.dentisan.co.uk

CE
0088

LORD STAFFORD AWARDS
AWARD WINNER 2010

BIOCLEAR®

Biofilm remover for dental unit water lines

LORD STAFFORD AWARDS
AWARD WINNER 2010

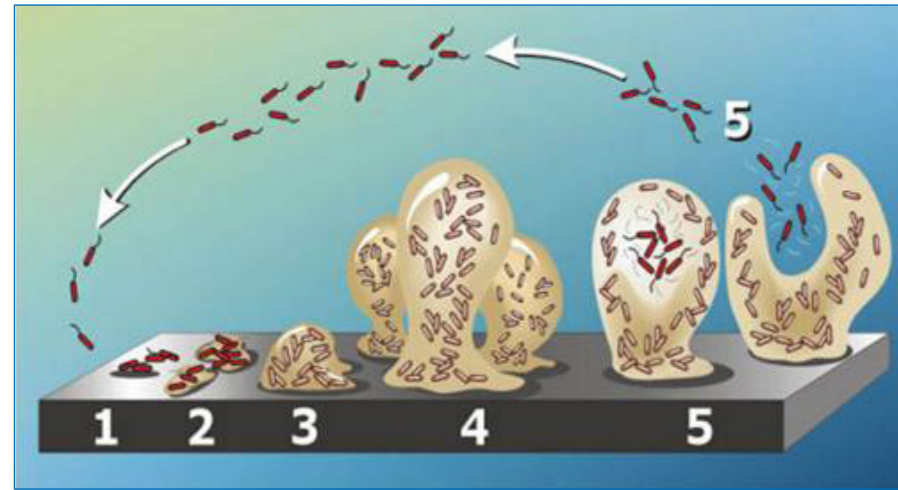
dentisan®
INNOVATION, EDUCATION, COMPLIANCE

HTM
01-05
COMPLIANT

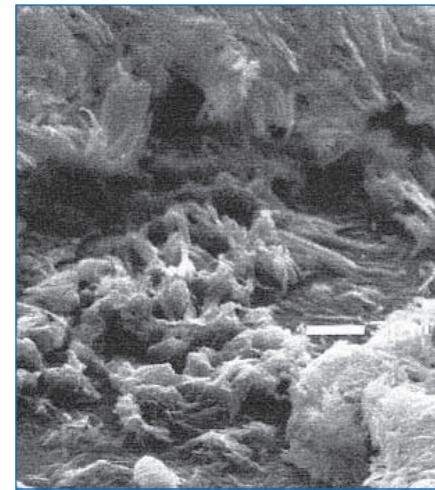


What is biofilm?

Biofilm forms when individual bacteria in a water line adhere to the tube surface. When many bacteria adhere, a mechanism called quorum sensing changes the way that the adhered bacteria behave. The adhered bacteria secrete a protective polysaccharide slime, forming a continuous film. Biofilms are tenacious and difficult to remove with conventional cleaners or biocides.



Biofilm development cycle.
Stage 1: Bacteria adheres to surface
Stage 2 - 4: Biofilm develops
Stage 5: Bacteria released from mature biofilm system



Bacteria in biofilm on dental unit water line wall

Why is biofilm bad news for your dental practice?

The presence of biofilm in dental unit water lines can cause water quality to fall below the minimum standards of < 200 cfu/ml required by HTM 01-05. DUWLs provide an ideal environment for the growth of bacterial biofilms.

- Water has a low flow rate which favours bacterial adhesion.
- Water flows intermittently causing minimal disruption to the growing biofilm.
- Fresh liquid encourages the growth of new biofilm, for example: when a handpiece is used or the system is flushed.
- Your surgery provides the ideal temperature range for bacterial growth.
- Biofilm can lead to a reduction in water flow and even tube blockage leading to unit downtime and repair costs.
- Biofilm can potentially harbour pathogens which may originate from the input water or by retraction from handpieces.
- High bacterial loads in output water have the potential to cause infection in patients or dental professionals, either by direct contact or through the inhalation of aerosolised mist.
- The practice of putting water into a patient's mouth that does not meet the standards required for drinking water is bad practice.

Your answer to biofilm removal

BIOCLEAR®

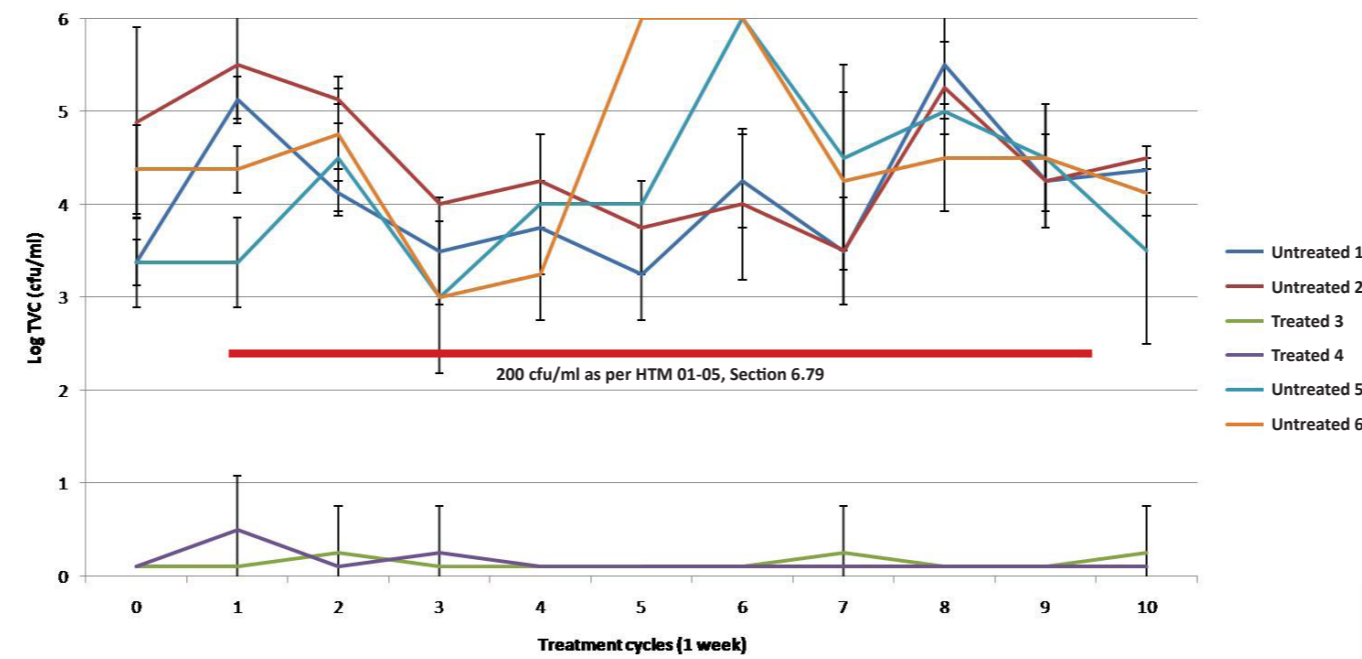
Biofilm remover for dental unit water lines

Proven

Bioclear has been developed by Dentisan in association with The University of Nottingham School of Biosciences. Bioclear has proven efficacy against the bacteria that make up biofilm and inhibits re-growth of the film, enabling a system to maintain water quality of < 200 cfu/ml, in line with HTM 01-05 section 6.79, subject to input water quality.

Bioluminescence evidence collated by The University of Nottingham School of Biosciences together with extensive laboratory evidence, clearly demonstrates that Bioclear effectively removes DUWL biofilm and with regular use maintains water quality at < 200 cfu/ml, therefore achieving compliance with HTM 01-05.

Laboratory Testing on Wild Strain Biofilm

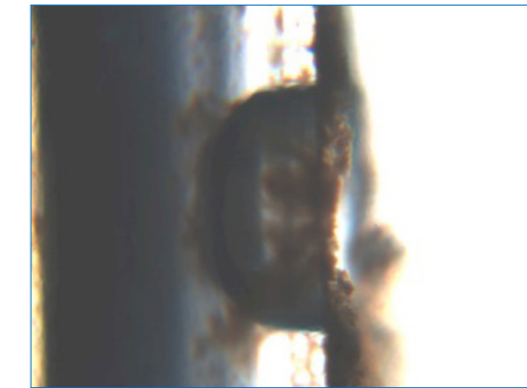


The graph above shows the reduction in levels of biofilm in the two water lines treated with Bioclear over a period of weeks, in comparison to the four untreated water lines.

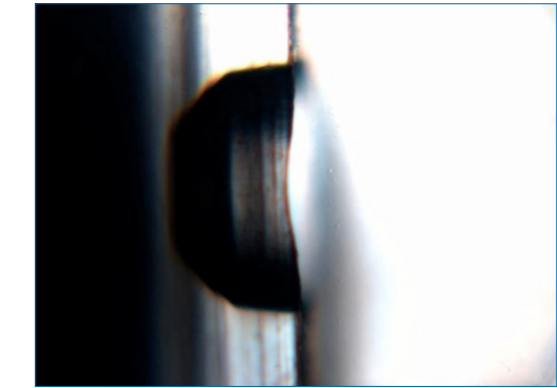


Microscopic imaging was carried out at The University of Nottingham School of Biosciences showing parts of a flow cell system in which biofilm had been allowed to develop for 10 weeks. The biofilm was based on bacteria isolated from dental unit water samples. The images demonstrate removal of the biofilm.

Before treatment



After treatment



Imaging before and after 12 hour contact to cell inlet

Easy to use one-step system

Bioclear is supplied as a box of 12 x 200ml bottles. One bottle is one week's treatment per chair. Simply pour the liquid into the chair's water bottle and draw through so that it fills the water lines. Leave for a minimum of 12 hours.

Once the treatment is complete the lines should be flushed through with fresh water until the water runs clear. To ensure the Bioclear has been completely removed, the kit also contains 50 test strips to indicate that the chair is ready to re-use.

The Bioclear kit comes complete with instructions for use and a laminated notice that should be placed on the chair whilst undergoing treatment with Bioclear.

You can perform ongoing monitoring of the quality of input and output water using Dentisan's Microbiological Dip Slides which are available either as part of the Bioclear Starter Pack or as a separate item.

- NEUTRAL pH •
- ODOURLESS •
- NO MIXING •
- NO MEASURING •
- SOLVENT FREE •
- NON-TAINING •



Use once a week to control and prevent biofilm