Liquid Ultra™

Kill biofilm bacteria[1] in dental unit waterlines with Liquid Ultra™ Solution

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The biofilm problem

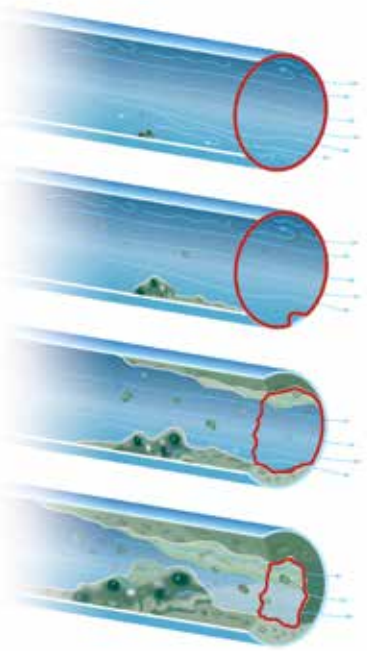
The narrow diameter and extensive length of dental unit waterline tubing provides the ideal surface area for the growth and survival of biofilm bacteria.

In the early stages of contamination, the first microorganisms to colonize the surface of DUWL tubing adhere by using a weak bond that is relatively easy to break with conventional treatment.

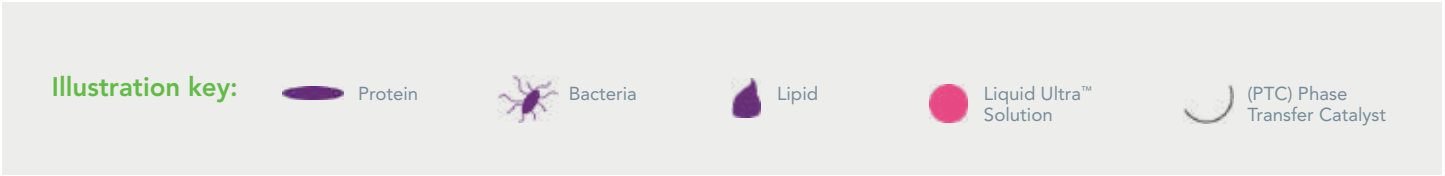
However, if these first layers of bacteria aren't treated, they begin to build a sticky matrix that creates biofilm, or a protective "slime layer." This sticky, slimy substance protects the biofilm community, allowing for further multiplication of microorganisims.

As layer upon layer of biofilm continues to build up on the walls, it decreases the size of the lumen, promoting water stagnation and increased CFU count that includes more complex microorganisms.

When left untreated, or improperly maintained, the water flowing through these contaminated DUWL's and out through the air/water syringe, ultrasonic scaler or high-speed handpieces can carry bioaerosols contaminated with microorganisms that have broken off from the biofilm in the waterline — carrying potential risk of exposure and cross-contamination to your patients and staff; possibly impacting your practice's reputation.



How Liquid Ultra™ Solution works to kill biofilm bacteria:



1. Attacks and bombards biofilm.

2. Penetrates the outer layer and dissolves into the matrix.

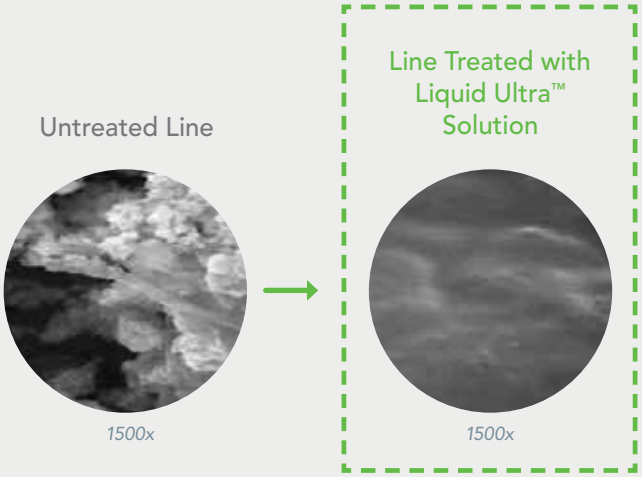
3. Destruction and elimination of biofilm by a unique combination of oxidation, hydrolysis and solubilization.

Liquid Ultra™ Solution is the only EPA registered dental unit waterline treatment granted all of the following claims[1]:

- ✓ **Kills biofilm bacteria**
- ✓ **Removes existing biofilm from dental unit waterlines**
- ✓ **Prevents and suppresses formation of biofilm in DUWLs**

For bottle fed systems

SEM (Scanning Electron Micrograph) of biofilm before and after treatment[2]:



Product Ordering Information:

Ref. #	Description	Quantity
DS503L	Liquid Ultra™ Solution Each set contains: 1 bottle of solutions 1 and 2 (3 fl oz/bottle)	1 Box of 10 Sets

[1] *Liquid Ultra Solution EPA REG. NO. 74245-7*

[2] *Molinari, John A. and Peri Nelson. "Cleaning and Antimicrobial Efficacy of Evacuation Line Solutions." The Dental Advisor 72 (July 2015).*

Multiple treatment options to fit every practice

Choose the protocol below that best fits your practice's needs:*

As a weekly treatment:

1. Follow the Liquid Ultra™ Solution initial treatment Instructions for Use (IFU - see next page) and treat DUWLs for three consecutive nights.†
2. Once the three-night Liquid Ultra Solution start-up treatment has been completed: **Treat DUWLs one night per week.** (Pick any night when the practice will be open the next day to ensure product is completely flushed out and does not remain the lines for more than 24 hours.)†

Note:

If two or more weekly treatments are skipped, repeat initial treatment (see next page).

In conjunction with a tablet protocol:

(As a shocking solution, use as recommended)

1. Follow the Liquid Ultra Solution initial treatment IFU (see next page) and treat DUWLs for three consecutive nights.†

   Frequency of Liquid Ultra Solution treatment will be based on the shocking recommendations from your waterline treatment IFU.

   While conducting the three-night Liquid Ultra Solution initial start-up treatment, continue to follow tablet protocol each day.
2. Once the three-night Liquid Ultra Solution initial treatment has been completed: **Continue with tablet use per manufacturer IFU.**

Note:

Each time you shock your lines with Liquid Ultra Solution in the future, you must follow the three-night initial treatment noted on the next page.

If your tablet IFU recommends weekly shocking, refer to the weekly treatment section.

As a best practice solution:

To rapidly treat DUWLs prior to initiating a new treatment protocol or quickly treat DUWLs with CFU counts higher than anticipated (>500 CFU/mL)

1. Follow the Liquid Ultra Solution initial treatment IFU (see next page) and treat DUWLs for three consecutive nights.†
2. Once the three-night Liquid Ultra Solution start-up treatment has been completed:
   - Initiate new treatment protocol, or continue with your current DUWL treatment, per the manufacturer IFU.
   - Initiate an effective DUWL treatment protocol to keep CFU levels ≤500 CFU/mL.

Note:

Consult the IFU associated with your daily waterline treatment and follow initial treatment instructions on the next page if you plan to shock your lines with Liquid Ultra Solution in the future, or if your new DUWL treatment recommends weekly shocking, refer to the weekly treatment section above.

**When comparing shocking frequency protocols between DUWL treatment manufacturer and dental unit manufacturer, always follow the shorter time frame to be be in compliance.*

†Refer to the Liquid Ultra Solution Instructions for Use for Precautionary Statements, Directions for Use and Troubleshooting available at Crosstex.com

All Liquid Ultra™ Solution use requires a consecutive three-night initial treatment protocol†

Follow the steps below before initiating any ongoing use of Liquid Ultra™ Solution.

Night one:

1. Combine

Add one bottle Liquid Ultra™ Solution 1 and one bottle Liquid Ultra Solution 2 into an empty external dental unit water bottle and stir. Do not use PET bottles.‡ Once mixed together, solution must be used within 24 hours.

Bottle 1 *Bottle 2* *Combine*

2. Run

Run Liquid Ultra Solution mixture through the system into a sink$^{\Delta}$ or container until the pink solution appears at the end of each air/water syringe and handpiece lines. Depending on the number of lines in the unit, there may be residual solution in the bottle. Always remove the handpiece (it may be advisable to remove coupler depending on the type of coupler. Contact manufacturer for specific recommendations.)

3. Wait

Allow the Liquid Ultra Solution mixture to remain in the lines overnight. Place the ends of water lines into a sink$^{\Delta}$ or container in case any pink mixture drips overnight.

Note:

Do not allow the Liquid Ultra™ Solution mixture to remain in the lines for more than 24 hours.

The following morning:

4. Flush

Flush any remaining Liquid Ultra Solution mixture from the bottle, through either the air/water syringe or handpiece lines, into a sink$^{\Delta}$ or container until the external water bottle is empty.

5. Remove

Remove and rinse the external water bottle with water and then fill with water.

6. Flush

Flush each line (air/water syringe and handpiece lines) into a sink$^{\Delta}$ or container until the water runs clear and the bottle is empty.

Nights two and three: Repeat Steps 1-6

Following the flush in step 6, resume routine patient and DUWL treatment for the day, or until you are ready to shock again (either remaining nights two and three, or weekly if Liquid Ultra Solution is your only DUWL treatment method).

⚠ DentaPure™ Cartridge users:

Do not shock or run anything other than water through an installed DentaPure™ Cartridge. If your office protocol requires a periodic shock, contact Crosstex.

This product is to be used in conjunction with regular testing of dental unit water. Testing frequency must comply with user's practice protocol. The manufacturer of the dental unit should be consulted before use of this product regarding compatibility of Liquid Ultra™ Solution with the dental unit.™

† *Refer to the Liquid Ultra Solution Instructions for Use for Precautionary Statements, Directions for Use and Troubleshooting available at Crosstex.com*

‡ *Do not use thin-walled polyethylene Terephthalate (PET) Bottles. We recommend either a high density polyethylene bottle with a minimum thickness of 0.08 inches or a high/low density polyethylene blend with a minimum thickness of 0.14 inches.*

$^{\Delta}$*Liquid Ultra Solution is not an evacuation line cleaner and should be flushed into a sink not connected to an evacuation line.*

Dedicated to innovative, high-quality solutions, services, and education that ensure maximum compliance and improve outcomes for healthcare professionals and patients.

MADE IN USA

[1] *Liquid Ultra Solution EPA REG. NO. 74245-7*

[2] *Molinari, John A. and Peri Nelson. "Cleaning and Antimicrobial Efficacy of Evacuation Line Solutions." The Dental Advisor 72 (July 2015).*

Cover image courtesy of Midmark Dental.

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