

Thermo Scientific Multidrop Combi nL



The liquid path of the Multidrop® Combi nL is optimized for low-volume dispensing, which leads to the need for regular maintenance every time the instrument is used. For example, the valve orifice is only 0.1 mm and can leak or get clogged if not properly maintained.

Before you start

Prefilter the reagents to remove particles.

The filter included in the liquid path is only meant for filtering occasional particles.

While dispensing

Make sure that you prime the liquid path generously before you start the actual dispensing, preferably with a dead volume of + 1 ml. That guarantees best performances from the very beginning.

If there are persistent air bubbles in the system or the valves start dripping, keep the *Tip Wash* button pressed for several seconds.

The liquid comes in pulses from one channel at a time. This maintains the maximal flow through the dispensing valve and clears the liquid way.

After dispensing

The instrument needs to be pressurized for all dispensing actions, including cleaning procedures.

Every time

Empty the reagent line either by using the *Empty* button (backflush) or change an empty reagent reservoir and use the *Prime* button to empty the tubings.

Add distilled water to the bottle and prime through the liquid path. Use a 10–15 ml volume.

Tip! Put water in the 50 ml tube and place that into the bottle – it saves the effort of cleaning the bottle.

Almost every time

Use a mild detergent (e.g. TWEEN®-20 or Triton™ X-100) or a cleaning solution (e.g. 1% Micro-90® cleaning solution by Cole-Parmer) to clean the liquid path. Use a 10–15 ml volume and prime through the liquid path.

Rinse the liquid path twice with distilled water. Use two separate tubes of water since there are remains of detergent on the outer surface of the tubing that mixes with the first rinsing water.

Tip! Put cleaning solution and water in the 50 ml tube and place that into the bottle – it saves the effort of cleaning the bottle.

If you prefer

Rinse the liquid path with 70% ethanol or isopropanol.

Note! Make sure that the liquid path is already cleaned before this step to avoid precipitating the protein remnants.

Problems – particles in the system, valve leaking or clogged

First try the fast way – keep the *Tip Wash* button pressed for several seconds. The liquid comes in pulses from one channel at a time and pushes the smallest particles out using the maximal flow through.

With the thorough cleaning procedure you wash the whole liquid path with the backflush feature. The purpose of this is to push all the dirt away from the valves.

- Empty the reagent line. Use either an empty reagent vessel or put a 50 ml tube inside the reagent vessel for waste.
- Remove the filter from the liquid line by pulling it out from the tube.¹
- Place a disposable reagent basin or a 96-well plate filled with 20–50 ml of filtered liquid under the dispensing valves so that the liquid is in contact with the valves.
- Press the *Empty* button to rinse the valves and tubings.
- Carry out the rinse procedure using the following reagents:
 1. Distilled water 10 ml
 2. Detergent or cleaning solution 20–50 ml
 3. Distilled water 10–15 ml
 4. Distilled water 10–15 ml
- Clean the filter and replace it into the end of the liquid line.

Clean the filter regularly

Clean the filter regularly – at least once a week is recommended. It is possible to use an ultrasonic cleaner for this purpose.

Or the filter can also be replaced with a new one.

Instrument not in use for several days or weeks

Rinse the liquid path with 70% ethanol or isopropanol to avoid microbial growth from developing.

Note! Make sure that the liquid path is already cleaned before this step to avoid precipitating the protein remnants.



¹Removing the reagent filter



Reagent filter



Cleaning the tubings using a reagent basin

For more details, refer to the *Thermo Scientific Multidrop Combi nL User Manual* (Cat. no. N07171).