

# Liquid Waveguide Cleaning Kit



WORLD  
PRECISION  
INSTRUMENTS

## INSTRUCTION MANUAL

### Warranty

WPI (World Precision Instruments,) warrants to the original purchaser that this equipment, including its components and parts, shall be free from defects in material and workmanship for a period of one year from the date of receipt. WPI's obligation under this warranty shall be limited to repair or replacement, at WPI's option, of the equipment or defective components or parts upon receipt thereof f.o.b. WPI, Sarasota, Florida U.S.A. Return of a repaired instrument shall be f.o.b. Sarasota.

The above warranty is contingent upon normal usage and does not cover products which have been modified without WPI's approval or which have been subjected to unusual physical or electrical stress or on which the original identification marks have been removed or altered. The above warranty will not apply if adjustment, repair or parts replacement is required because of accident, neglect, misuse, failure of electric power, air conditioning, humidity control, or causes other than normal and ordinary usage.

To the extent that any of its equipment is furnished by a manufacturer other than WPI, the foregoing warranty shall be applicable only to the extent of the warranty furnished by such other manufacturer. This warranty will not apply to appearance terms, such as knobs, handles, dials or the like.

WPI makes no warranty of any kind, express or implied or statutory, including without limitation any warranties of merchantability and/or fitness for a particular purpose. WPI shall not be liable for any damages, whether direct, indirect, special or consequential arising from a failure of this product to operate in the manner desired by the user. WPI shall not be liable for any damage to data or property that may be caused directly or indirectly by use of this product.

### Claims and Returns

• Inspect all shipments upon receipt. Missing cartons or obvious damage to cartons should be noted on the delivery receipt before signing. Concealed loss or damage should be reported at once to the carrier and an inspection requested. All claims for shortage or damage must be made within 10 days after receipt of shipment. Claims for lost shipments must be made within 30 days of invoice or other notification of shipment.

Please save damaged or pilfered cartons until claim settles. In some instances, photographic documentation may be required. Some items are time sensitive; WPI assumes no extended warranty or any liability for use beyond the date specified on the container.

• WPI cannot be held responsible for items damaged in shipment en route to us. Please enclose merchandise in its original shipping container to avoid damage from handling. We recommend that you insure merchandise when shipping. The customer is responsible for paying shipping expenses including adequate insurance on all items returned.

• Do not return any goods to WPI without obtaining prior approval and instructions (RMA#) from our returns department. Goods returned unauthorized or by collect freight may be refused. The RMA# must be clearly displayed on the outside of the box, or the package will not be accepted. Please contact the RMA department for a request form.

• Goods returned for repair must be reasonably clean and free of hazardous materials.

• A handling fee is charged for goods returned for exchange or credit. This fee may add up to 25% of the sale price depending on the condition of the item. Goods ordered in error are also subject to the handling fee.

• Equipment which was built as a special order cannot be returned.

• Always refer to the RMA# when contacting WPI to obtain a status of your returned item.

• For any other issues regarding a claim or return, please contact the RMA department

**Warning: This equipment is not designed or intended for use on humans.**

# Liquid Waveguide Cleaning Kit

Part # 501609

Serial No. \_\_\_\_\_

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# Liquid Waveguide Cleaning Kit

## INTRODUCTION

The solutions in this cleaning kit are formulated to remove contamination from WPI's liquid waveguide capillary cells (LWCC) and WPI's UltraPath multiple pathlength sample cell. The stringent cleaning practices outlined in this manual will ensure trouble free use of WPI's waveguides. Each kit contains sufficient solution for approximately 120 cleaning cycles; using 1 mL per cycle of each solution.

## KIT CONTAINS

- 125 mL of Solution 1 “Cleaning Solution”
- 125 mL of Solution 2 “Methanol Solution”
- 125 mL of Solution 3 “HCl Solution”
- (2) 30 mL bottles of Concentrated Cleaning Solution
- (1) 125 mL Sample Bottle
- (1) 125 mL Reference Bottle
- Convenient Carrying Case

## CAUTIONS

- Follow good laboratory practices when using these chemicals.
- Wear NIOSH compliant safety glasses, protective clothing and gloves as necessary.
- Use chemicals for intended purposes ONLY!
- Keep all containers tightly closed and in an upright position when not in use.
- Store in a cool dry place – 25°C is recommended.

## INSTRUCTIONS

For Liquid Waveguide Capillary Cells (LWCC) follow these steps:

1. Connect exit tubing (i.e., silicon or equivalent) from the OUTFLOW of the LWCC to a waste container.
2. Rinse the cell thoroughly using Ultra Pure water. Obtain a new reference intensity and take a baseline absorbance reading.
3. Fill a 1 cc syringe with “Cleaning Solution 1” and inject it into the LWCC’s INFLOW via the Luer fitting adapters provided with your LWCC

4. Fill a 1 cc glass type syringe with “Methanol Solution 2” and inject it into the INFLOW of the LWCC.
5. Fill a 1 cc syringe with “HCl Solution 3” and inject it into the INFLOW of the LWCC.
6. Flush out cleaning solutions with distilled, Ultra Pure, reverse osmosis or equivalent quality water and take an absorbance reading.
7. Repeat these cleaning cycles until a stable absorbance signal can be obtained.

The sample injector assembly kit (WPI Part #58006) can be used to conveniently fill all LWCC models, unlike syringe type injection methods described above. Further, using the sample injector, the injection volume of the cleaning solutions per cycle can be reduced to the internal volume of the LWCC (e.g., 0.26-mL for a 100 cm LWCC).

For Ultrathin follow these steps:

1. Rinse the cell thoroughly using Ultra Pure water. Obtain a new reference intensity and take a baseline absorbance reading.
2. Inject 3 injector volumes, separated by air bubbles, of:  
Solution 1 “Cleaning Solution” followed by:  
Solution 2 “Methanol Solution” followed by:  
Solution 3 “HCl Solution”.
3. Then re-fill cell with 1-2 volumes of de-ionized water , take a reference measurement and compare it with the initial absorbance baseline signal.
4. Repeat Step 2 until scans show little or no change.

NOTE: Use scans for pathlength = 200-cm cell as criteria for determining a clean system.

## NOTES

1. All solutions in cleaning kit are HPLC grade solvents.
2. Sample solutions should NEVER be left inside waveguide between uses.
3. Before extensive periods of storage (greater than 24 hours), flush with a solution of 20% methanol / 80% water, then remove. This prevents most of the inevitable formation of organics from developing inside the waveguide sample cells.

## ACCESSORIES

Description	WPI Part Number
1 cc B-D Plastic Luer Lock Syringe (box of 100)	501363
2 cc Glass Luer Lock Syringe (box of 6)	SYRNG002
Sample Injector Kit for Liquid Waveguides (LWCC)	58006
Waveguide Cleaning Kit	501609
Brij 35 Concentrate	100106
Silicone Tubing, 1 m length, 1.6 mm I.D., 1.6 mm wall thickness	500320

## Where to go for more help

If you have questions about any aspect of cleaning your liquid waveguide, you are welcome to contact WPI. WPI's e-mail address for spectroscopy products is spectroscopy@wpiinc.com.

MSDS Sheets are available upon request.