

Whatman SOLVENT IFD

Disposable Filter Device

Introduction

Important

Read these instructions carefully before using the products.

Intended use

The products are intended for research use only, and shall not be used in any clinical or *in vitro* procedures for diagnostic purposes.

Description

The SOLVENT IFD disposable filter device was designed to provide purer filtration of organically based HPLC mobile phases. The SOLVENT IFD (Solvent In-Line Filter/Degasser) is designed and built with a polypropylene housing and filter medium. A housing security ring seals the circumference. Solvent resistant ferrule nut assemblies are included with each package. This provides the finest in disposable in-line filtration devices.

The SOLVENT IFD works on the "bubble point" principle. A "bubble point" is the pressure at which gasses will pass through a wet membrane. If pressure is maintained below the bubble point, the gas will not pass through the filter. The SOLVENT IFD traps the gas and keeps it from passing through the filter media.

The SOLVENT IFD is designed to work with mobile phases containing at least 30% of the organic component. Cytiva recommends the AQUEOUS IFD product number 6726-5002A for aqueous solutions.

- In-line Filtration and Degassing of Organically Based HPLC Mobile Phases
- All Polypropylene Filter Device
- Ferrule Nuts Included
- Rugged Construction
- Air Vent on Inlet with Luer Lock Cap
- Lightweight – won't cause collapsed tubing
- Integrity Testable BP
- Biosafe materials USP Class VI

SOLVENT IFD – 50mm Filters

Product code	Product Name	Pore Size (µm)	Media	Qty./ Pkg.
6725-5002A	SOLVENT IFD	0.2	Polypropylene	10

OPERATING INSTRUCTIONS

Safety:

Considering the special factors of your application consult [TECHNICAL DATA: SOLVENT IFD Disposable Filter Devices, on page 2](#) to determine the correctness of use. Do not exceed the pressure, temperature or chemical compatibility recommendations.



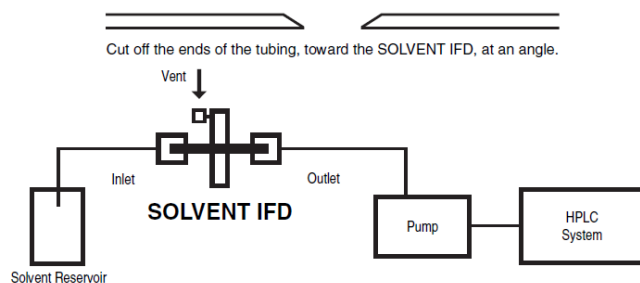
CAUTION

High pressures are easily obtained when using syringes. Do not exceed the recommended pressures. Hold the filter to the syringe when pressure is applied to prevent disengaging the filter from the syringe. This could occur if excessive pressure is applied.

Filter Media Considerations:

This unique 0.2µm polypropylene filter media provides an excellent means of filtering organically based HPLC Mobile phases. It is resistant to commonly used organic solvents. For specific chemicals see [CHEMICAL COMPATIBILITY SUMMARY1, on page 3](#). "Wetted" media will not allow gas to easily pass through the media. The pressure required for gas to pass through wetted media (bubble point) is dependent on the media's pore size. Air entrained on the upstream side of wetted media blocks the flow path and reduces or stops flow.

Filter Installation and Priming



Step	Action
1	Establish continuous, bubble free flow from solvent reservoir to pump by aspirating with a syringe through the pump bleed valve.

Step	Action
2	Cut, at an angle, an appropriate length of 1/8" tubing to reach comfortably from the solvent reservoir to the inlet of the SOLVENT IFD. Slide a ferrule nut over the cut tubing. Connect tubing to the inlet of the SOLVENT IFD (angled end toward the SOLVENT IFD) by tightening the nut firmly. Note: <i>There are protective stops on both sides of the SOLVENT IFD to prevent the tubing from damaging the filter media.</i>
3	Plug the inlet tubing, or seal the end by attaching and clamping off a short length of flexible tubing.
4	Fill a 10 ml syringe with the mobile phase, remove vent cap and secure the syringe to the vent.
5	With outlet pointed up SLOWLY push the syringe plunger completely wetting out the filter media and filling the SOLVENT IFD housing.
6	Connect SOLVENT IFD outlet to 1/8" O.D. pump inlet tubing (cut at an angle) with a ferrule nut, as in step 2.
7	Unplug or unclamp SOLVENT IFD inlet tubing and place it in the solvent reservoir.
8	Making sure the vent is on the upper side of the SOLVENT IFD, fill the tubing leading to the solvent reservoir by pushing slowly on the syringe plunger.
9	Slowly pull on the syringe plunger to withdraw a few ml of solvent into the syringe. Note: <i>This should remove any remaining entrapped air from the inlet side of the SOLVENT IFD housing.</i>
10	Maintaining the SOLVENT IFD at the same level as the solvent in the reservoir, remove the syringe and replace the vent cap on the vent.
11	Pump mobile phase through system, bypassing the column, for 15 minutes to purge any remaining entrapped air in the tubing between the SOLVENT IFD and the pump.

Trouble Shooting:

- To check the SOLVENT IFD connections for air tightness:** plug the tubing at the solvent reservoir. Remove vent cap and secure an empty syringe to the vent. Pull back on the plunger. If there are any air leaks, air bubbles will be observed.
- Air present in the inlet side of the SOLVENT IFD during operation:** The air may be evacuated by holding the SOLVENT IFD level with the solvent in the solvent reservoir, removing the vent cap, securing an empty syringe to the vent and pulling back on the syringe plunger. Then remove the syringe and replace the vent cap. Normally a small bubble of air will remain in the vent. This will not interfere with solvent flow.
- Trouble with priming:** Follow steps 7 through 10 exactly. Check for solvent leaks and/or air leaks (bubbles), step 1 of Trouble Shooting.
- No flow immediately after installation:**
 - The SOLVENT IFD is designed to work with $\geq 30\%$ solvent mixtures, For aqueous solutions use Cytiva AQUEOUS IFD product number 6726-5002A.

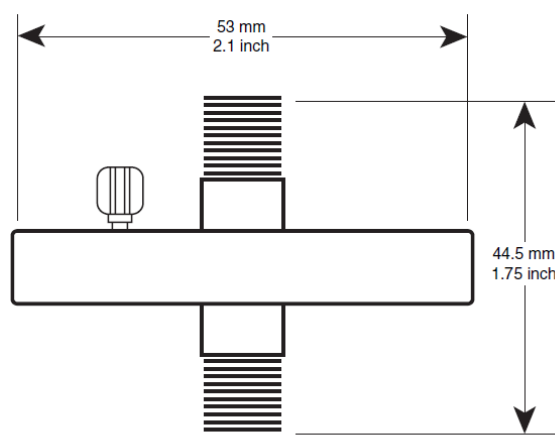
- Check for air blocking the inlet side of the SOLVENT IFD by repeating steps 7 through 10.
 - To determine if the solvent is flowing from the solvent reservoir to the inlet side of the SOLVENT IFD; secure a syringe filled with solvent to the vent and push the syringe plunger. Solvent should flow back from the SOLVENT IFD to the solvent reservoir with a small amount of pressure on the syringe plunger.
 - To determine if the solvent is flowing through the SOLVENT IFD to the pump; plug the tubing to the solvent reservoir, secure a syringe filled with solvent to the vent and push the syringe plunger. Solvent should flow easily through the SOLVENT IFD and the tubing to the pump.
- Slow or no flow after use:** Check for air blockage and clear any entrapped air by following steps 7 through 10. If problem persists, the SOLVENT IFD is probably clogged with particulates and should be replaced.
 - Air appears to be passing through the SOLVENT IFD:** Check for air leaks by following Trouble Shooting step 1. If no air leaks are observed on the outlet side, replace the SOLVENT IFD, the media may have ruptured.

Operating considerations: Proper operation of the system requires flow rates of ≤ 2.5 ml/min. The filter unit should be changed:

- weekly
- after filtering 4 liters of solvent or,
- when changing from one solvent to another

Integrity Testing: Bubble Point (BP) Test: Flush filter with 10 ml or more of an appropriate solution. After the media is completely wet, with outlet pointed upward, apply air under controlled pressure to the inlet until air breaks through the media and bubbles from the outlet. The pressure where air begins to pass through the media is the BP.

TECHNICAL DATA: SOLVENT IFD Disposable Filter Devices



Connections • 5/16-24 Threads
Ferrule Nuts for 1/8" O.D. Tubing
are included with each Package

Product code.	Pore Size Microns	INTEGRITY TEST DATA ¹		ISOPROPANOL Bubble Point	ISOPROPANOL FLOW RATE ¹ ml/min at 1 bar (14.5 psi)
		ISOPROPANOL Bubble Point			
		Bar	Psi		
6725-5002A	0.2	0.76	11.0		8.5

¹ Typical Values

The SOLVENT IFD is designed to work with mobile phases containing at least 30% of the organic component. Cytiva recommends the AQUEOUS IFD product number 6726-5002A for aqueous solutions.

Dimensions:	53 mm (2.1 in.) x 44.5 (1.75 in.)
Weight:	11.5 grams (20 gms with ferrule nuts)
Filtration Area:	16 cm ²
Maximum Pressure	
Housing Burst:	4.1 bar (60 psi)
Operating	2.1 bar (30 psi)
Housing:	Polypropylene
Vent:	On Inlet with Luer Lock Cap
Volume "Hold Up":	Full housing 1.0 ml with Air Purge ≤ 0.1 ml
Filter Media:	Polypropylene
Flow Direction:	Flow should enter from the inlet
Operating Flow Rate:	≤ 2.5 ml/min
Connectors:	5/16-24 Threads + 1/8" O.D. Ferrule Nuts
Biosafe:	All Materials Pass USP Class VI

CHEMICAL COMPATIBILITY SUMMARY¹

Acetic Acid, Glacial	Ethyl Acetate
Acetone	Ethyl Ether
Acetonitrile	Freon TF
Ammonium Hydroxide	Hydrochloric Acid
Amyl Alcohol	Isopropanol
Aniline	Methanol
Benzyl Alcohol	Methylene Chloride (*)

Butanol	Methyl Ethyl Ketone
Chloroform (*)	Methyl Isobutyl Ketone
DMF	Propanol
DMS	Sodium Hydroxide
Dioxane	THF(*)
Ethanol	Water

¹This chemical compatibility chart is intended as a general guide only. Any compound followed by an (*) indicates a lesser degree of resistance according to manufacturer's studies. The following guide has been compiled from results of in-house studies, material supplier studies and currently available technical literature. Because of solvent condition variabilities, which may exist from lab to lab, component compatibility cannot be guaranteed. In order to verify chemical compatibility, studies on individual chemicals of interest should be undertaken.

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