

# Whatman MashPrep Syringe Filters

## Product Information Sheet

### 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.

#### Safety

For use and handling of the products in a safe way, either refer to the Safety section in these instructions or to the Safety Data Sheets where applicable.

### Description

Whatman™ MashPrep™ Syringe Filters are designed to filter corn mash sample for HPLC or other analytical techniques. Corn mash sample are obtained during the dry or wet milling ethanol production process.

Whatman MashPrep Syringe Filters contain a borosilicate glass microfiber prefiltration stack including specialized graded density filter media. This combination of prefilters allows sample filtration with reduced hand force. Compared to an unprotected membrane, the volume of sample filtered can be 3 to 7 times greater.

### Background

Corn mash sample of dry or wet milling ethanol production process are taken at the fermentation stage for HPLC or other analytical analysis.

It is important to filter the sample to prevent any solids to block the guard columns or other analytical components of the instrumentation. Unfiltered samples can cause potential deterioration of accuracy or damage to instrumentation and components, hence instrument downtime.

Disposable filtration devices provide great labor saving efficiency while ensuring consistent filtration when compared to hand assembled filter housings.

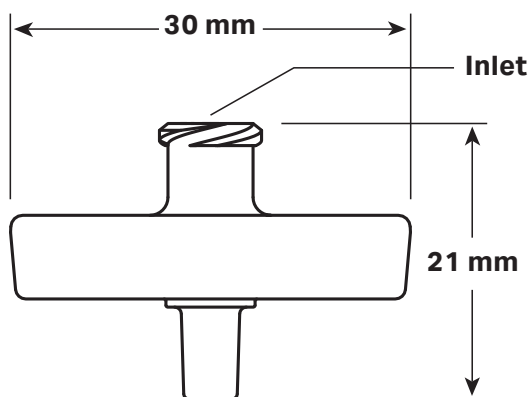
### Preparation of corn mash samples

Follow these steps to prepare corn mash samples for the analysis.

Step	Action
1	Remove bulk solids using high flow rate filter paper. Whatman Grade 4 Qualitative Filter Papers are recommended.
2	Pass the filtrate through Whatman MashPrep Syringe Filters to remove smaller particulates/trace solids/remainings.

The filtrate is ready for HPLC or other analytical analysis.

### Technical data



<b>Connectors:</b>	Inlet - Female Luer Lock (FLL) Outlet - Male Slip Luer (MSL)
<b>Weight:</b>	Approximately 3 grams
<b>Filtration Area:</b>	Approximately 4.6 cm <sup>2</sup>
<b>Maximum Pressure:</b>	5.2 bar (75 psi)
<b>Housing:</b>	Polypropylene (PP)
<b>Prefiltration Media:</b>	100% borosilicate glass
<b>Filter Media:</b>	Nylon (NYL)
<b>Hold-Up Volume:</b>	Full housing 1.4 mL with air purge 250 µL (approx)
<b>Flow Direction:</b>	Flow should enter from the inlet

### Nylon (NYL) Membrane

Nylon membrane is hydrophilic and can be used for aqueous and aqueous-organic samples. The membrane offers chemical resistance to most common HPLC solvents. However, it has limited resistance to acids, bases, halogenated hydrocarbons, aldehydes and strong oxidizing agents. The most common application is HPLC sample filtration.

### Typical applications

Filtration of aqueous and/or organic samples (hydrophilic filter media).

### Operating instructions

#### Safety

When considering the specific factors of your application, refer to Technical data for correct use. Do not exceed the pressure, temperature, or chemical compatibility recommendations.

High pressures can be obtained when using syringes. The smaller the syringe, the higher the pressure that can be generated. As general guideline, the following pressures can be obtained by hand with the syringes indicated:

Syringe size	20 mL	10 mL	5 mL	3 mL	1 mL
Pressure obtained by hand	80 psi	140 psi	180 psi	200 psi	250 psi

Determine the pressure generated by hand with a specific size syringe and take appropriate safety precautions not to exceed the recommended rating for the device used.



### CAUTION

If the Maximum Pressure is exceeded, bursting of the device may occur resulting in loss of sample or personal injury.

### Efficiency

To maximize filtration throughput, use the largest pore size filter that will provide the required purity. To extend filter life, use low flow rates or pressures.

### Air locks

Air locks can seriously limit flow rates. To eliminate, point the outlet of the filter device upward during the initiation of liquid flow.

### To filter a solution with a syringe

Follow these steps to filtrate a solution using a syringe.

Step	Action
1	Fill the syringe with the solution to be filtered.
2	Secure the filled syringe to the FLL inlet of the syringe filter with a twisting motion.
3	With the outlet pointed upward, gradually apply thumb pressure to the syringe plunger to initiate flow.
4	Continue thumb pressure until all the air in the device is displaced with liquid.
5	Once liquid starts to exit the syringe filter from the outlet, stop applying pressure, point device downward and away from user.
6	Orientate syringe filter over a suitable collection container or other apparatus and apply pressure again to filter sample.

### Integrity test

#### Bubble point test

Follow these steps to perform a bubble point test if required for your application.

Step	Action
1	Flush the filter device with 1.0 mL or more of the test fluid.
2	After the filter is completely wet, with the outlet pointed upward, apply air under controlled pressure to the inlet until air breaks through the filter and bubbles can be seen at the outlet.
3	The pressure at which air passes through the wetted filter is the bubble point.

Refer to the table for typical bubble point values.

### Bubble point data

Bubble point determined with isopropanol.

Description	Pore Size (µm)	Minimum Bubble Point (psi)
Nylon	0.2	46
Nylon	0.45	29

### Chemical compatibility of membrane

Solvent	Nylon
Acetic Acid, 5%	R
Acetic Acid, Glacial	L
Acetone	R
Acetonitrile	R
Ammonia, 6N	R
Amyl Acetate	R
Amyl Alcohol	R
Benzene <sup>1</sup>	L
Benzyl Alcohol <sup>1</sup>	L
Boric Acid	L
Butyl Alcohol	R
Butyl Chloride <sup>1</sup>	NR
Carbon Tetrachloride <sup>1</sup>	L
Chloroform <sup>1</sup>	NR
Chlorobenzene <sup>1</sup>	-
Citric Acid	R
Cresol <sup>1</sup>	NR
Cyclohexanone	R
Cyclohexane <sup>1</sup>	NR
Diethyl Acetamide	R
Dimethyl Formamide	R
Dioxane	R
DMSO	R
Ethanol	R
Ethers <sup>1</sup>	R
Ethyl Acetate	R
Ethylene Glycol	R
Formaldehyde <sup>1</sup>	R
Formic Acid	NR
Freon TF <sup>1</sup>	R
Hexane	R
Hydrochloric Acid, Conc <sup>1</sup>	NR
Hydrofluoric Acid <sup>1</sup>	NR
Isobutyl Alcohol	R
Isopropyl Alcohol	R
Methanol	R
Methyl Ethyl Ketone	R
Methylene Chloride <sup>1</sup>	NR
Nitric Acid, Conc <sup>1</sup>	NR
Nitric Acid, 6N <sup>1</sup>	NR
Nitrobenzene <sup>1</sup>	L
Pentane <sup>1</sup>	R

Solvent	Nylon
Perchloro Ethylene <sup>1</sup>	R
Phenol 0.5%	R
Pyridine	L
Sodium Hydroxide, 6N	L
Sulfuric Acid, Conc <sup>1</sup>	NR
Tetrahydrofuran <sup>1</sup>	R
Toluene <sup>1</sup>	L
Trichloroethane <sup>1</sup>	L
Trichloroethylene <sup>1</sup>	NR
Water	R
Xylene <sup>1</sup>	L

<sup>1</sup> Short term resistance of housing

**Legend:** R = Resistant; LR = Limited Resistant; NR = Non Resistant.

The above data is to be used as a guide only. Testing prior to application is recommended.

## Product table

Product Number	Product Name	Pore Size (µm)	Media	Qty./ Pkg.
5501-2502	Whatman MashPrep	0.2	Nylon	5000
5501-2504	Whatman MashPrep	0.45	Nylon	5000

## Certificate of Conformity

Lot specific Certificate of Conformity for the Whatman MashPrep Syringe Filters is available for download at -

<https://www.cytivalifesciences.com/en/us/support/quality/certificates>

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