

# Target Syringe Filters

Snap-It

Bonded Caps

Target DP

Color Band

## Target Syringe Filters

National Scientific Target Syringe Filters assure product performance and reproducibility through a vigorous quality testing program that challenges each type of filter to provide interference-free results. New sample distribution rings promote uniform application of the sample across the membrane area. This feature maximizes the available filtration area, and reduces back pressure when filtering samples high in particulates.

NS Certified

Target Syringes

Crimp Seals



Target DP

LoVial

SepCap

- New 30mm and 17mm filter format allows up to 50% more sample throughput compared to competitive products
- Even sample distribution by the newly designed sample distribution rings
- Enhanced female Luer-Lok® assures safe and secure connections
- Lot tested for bubble point, burst pressure, membrane retention and flowrate
- Membranes available include Nylon, PTFE, PVDF, Regenerated Cellulose, PES, Glass MicroFiber, Cellulose Acetate and Polypropylene

Polyspring Inserts

NS Certified

Microsert

Robo Vial

Micro-V



NS Certified

Target DP

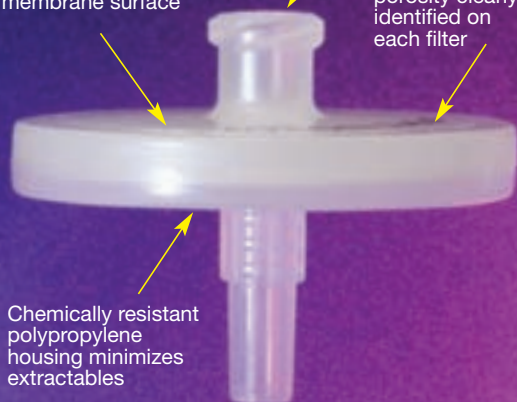
Comprehensive quality systems ensure interference-free results

Enhanced female Luer-Lok® design assures safe and secure connections

Sample Distribution rings distribute sample for maximum speed and uniform filtration across membrane surface

Membrane type and porosity clearly identified on each filter

Chemically resistant polypropylene housing minimizes extractables



# Target

## HPLC Syringe Filters

*Target Syringe Filters* have been improved for even greater performance and sample throughput. National Scientific's Continuous Improvement Program has resulted in our new re-designed Target Filters that now provide industry-leading levels in sample loading and filter efficiency.

Target's new 30mm and 17mm filter formats provide superior throughput and sample loading over standard, competitive 25mm and 13mm filters. Now you can process up to 50% more sample before reaching maximum sample loading for our new 30mm filters.

The new sample distribution rings promote uniform application of the sample across the membrane area. This feature maximizes the available filtration area, speed and reduces backpressure when filtering highly particulate samples. Our new, automated manufacturing process ensures uniformity and reliability more than ever before. Our new methods eliminate variable results through controlled manufacturing consistency from batch to batch, filter to filter.

### Performance Filtration Assurance

Improved Target Filters assure product performance and reproducibility through a vigorous quality testing program that challenges each type of filter to provide interference-free results. Every production lot is quality monitored:

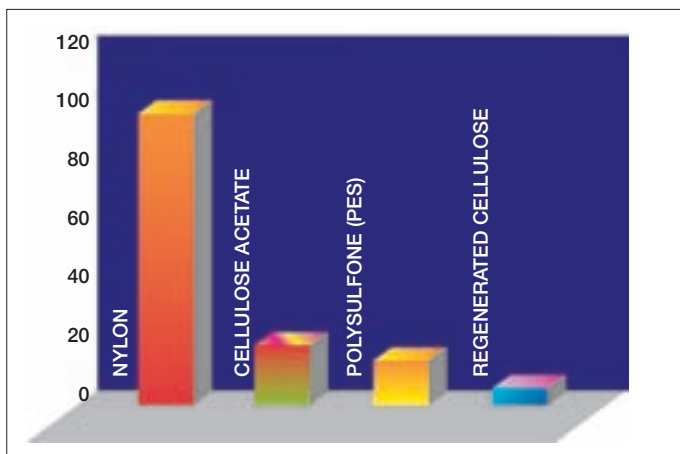
- **All critical filter performance specifications confirmed;** bubble point, burst pressure, membrane retention, flowrate.
- **HPLC performance and reproducibility;** actual NIST-traceable standard run confirmed for baseline, peak area/shape, retention time.
- **Actual filter efficiencies for sample;** standard sample spectrophotometrically tested for efficiency and performance.
- **Retention samples maintained for six months;** your actual filter lot used to answer application or performance inquiries.



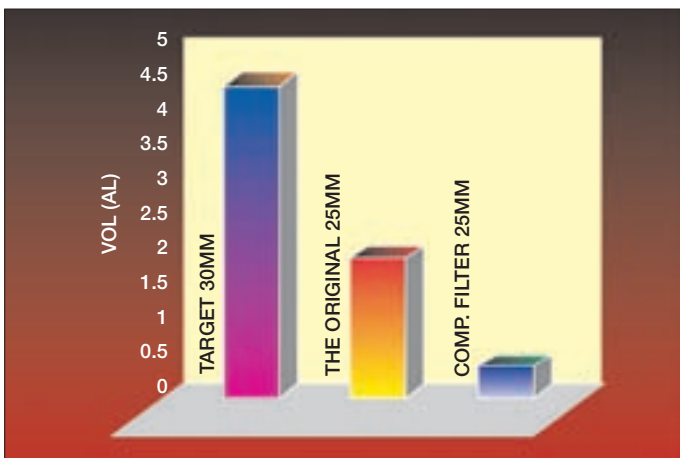
### Protein Binding of Biological Samples

Target's Regenerated Cellulose syringe filters possess superior characteristics for the filtration of biological samples or high binding analytes. Our Regenerated Cellulose filters have low membrane zeta potentials to provide ultra-low biological based binding coefficients, to maximize sample yield after filtration. No binders, surfactants or wetting agents are used, eliminating a source of contamination. Hydrophilic Regenerated Cellulose also exhibits excellent chemical resistance and high flowrates when compared to Polysulfone and Cellulose Acetate filters normally used in biological assay filtration.

BINDING CHARACTERISTICS of VARIOUS MEMBRANES  
(Binding in  $\mu\text{g}/\text{cm}^2$  of G-Globulin)



## Throughput Volume Comparison 30mm Target Syringe Filters

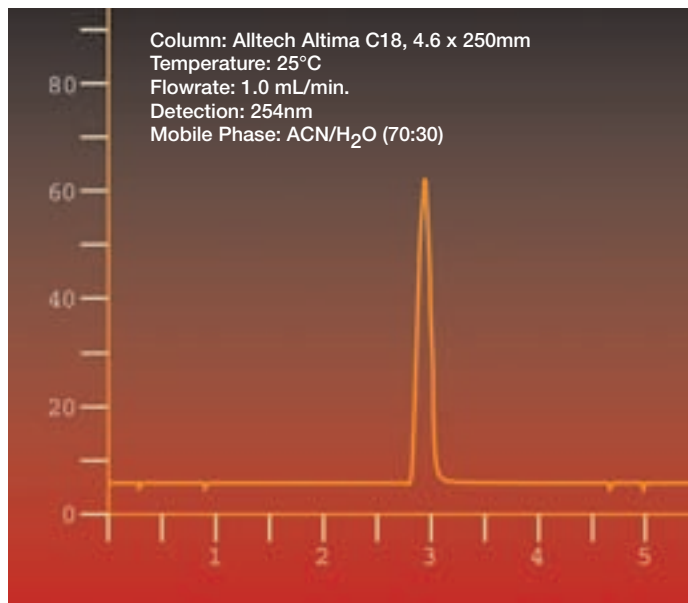


Our new filter permits more sample to be processed before filter overload. This is a considerable improvement in throughput volume compared to our first generation Target filters or competitive products.

### Filter Type Volume

Improved Target Nylon, 0.45µm, 30mm, with prefilter	4.71 ± 0.9mL
Older version Target Nylon, 0.45µm, 25mm, prefilter	2.50 ± 0.2mL
Competitive 25mm Nylon, 0.45µm filter	0.49 ± 0.1mL

## Validated HPLC Performance-Caffeine (4µg/mL)



Target's quality assurance program utilizes a NIST traceable standard to ensure chromatographic performance. Our enhanced testing goes far beyond industry testing for quiet baselines. Each lot of Target filters is tested for peak area, retention time, and peak shape of our traceable standard. Now you can be assured of industry-leading and confirmed chromatographic performance and reproducibility lot to lot and filter to filter.



# Target® HPLC Syringe Filters

## Target® HPLC Syringe Filters

- Assured quality—each lot independently tested for physical properties and UV detectable extractables
- Secure, enhanced female Luer-Lok™ inlet; male Luer slip outlet
- Solvent resistant, low extractable polypropylene housing
- Select membranes available with 1.0µm glass prefilter for high solids samples



## Nylon Syringe Filters



F2500-1

## Target® Nylon Syringe Filters

- Membrane: HPLC Certified Nylon
- Prefilter: binder-free glass microfiber
- Connections: enhanced female Luer-Lok™ inlet, male slip outlet
- Max. operating temperature: 100°C
- Max. operating pressure: 4mm - 75psi, 17mm - 115psi, 30mm - 90psi
- Retention volumes: 4mm - <15µL, 17mm - <29µL, 30mm - <137µL

NSC PART NO.	DIAMETER	PORE SIZE	PREFILTER INCLUDED	PACK OF	CASE OF
F2504-1	4mm	0.45µm	No	100	500
F2504-2	4mm	0.2µm	No	100	----
F2513-1	17mm	0.45µm	No	100	500
F2513-2	17mm	0.2µm	No	100	----
F2500-1	30mm	0.45µm	No	100	500
F2500-2	30mm	0.2µm	No	100	500
F2500-12	30mm	1.5µm	No	100	500
F2500-50	30mm	5.0µm	No	100	500
F2502-1	30mm	0.45µm	Yes	100	----
F2502-2	30mm	0.2µm	Yes	100	----

## PTFE Syringe Filters

## Target® PTFE Syringe Filters

- Membrane: HPLC certified PTFE, w/polypropylene support
- Housing: medical grade, solvent-resistant, virgin polypropylene
- Prefilter: binder-free glass microfiber
- Connections: enhanced female Luer-Lok™ inlet, male Luer slip outlet
- Max. operating temperature: 100°C
- Max. operating pressure: 4mm - 75psi, 17mm - 115psi, 30mm - 90psi
- Retention volumes: 4mm - <15µL, 17mm - <29µL, 30mm - <137µL

NSC PART NO.	DIAMETER	PORE SIZE	PREFILTER INCLUDED	PACK OF	CASE OF
F2504-3	4mm	0.45µm	No	100	----
F2504-4	4mm	0.2µm	No	100	----
F2513-3	17mm	0.45µm	No	100	500
F2513-4	17mm	0.2µm	No	100	500
F2500-3	30mm	0.45µm	No	100	500
F2500-4	30mm	0.2µm	No	100	500
F2500-13	30mm	1.0µm	No	100	----
F2502-3	30mm	0.45µm	Yes	100	----

**PVDF Syringe Filters****Target® PVDF Syringe Filters**

- Membrane: HPLC Certified PVDF
- Housing: medical grade, virgin polypropylene
- Prefilter: binder-free glass microfiber prefilter
- Connections: enhanced female Luer-Lok™ inlet, male Luer slip outlet
- Max. operating temperature: 110°C
- Max. operating pressure: 4mm - 75psi, 17mm - 115psi, 30mm - 9psi
- Retention volumes: 4mm - <15µL, 17mm - <29µL, 30mm - <137µL

NSC PART NO.	DIAMETER	PORE SIZE	PREFILTER INCLUDED	PACK OF	CASE OF
F2504-5	4mm	0.45µm	No	100	500
F2504-6	4mm	0.2µm	No	100	500
F2513-5	17mm	0.45µm	No	100	500
F2513-6	17mm	0.2µm	No	100	500
F2500-5	30mm	0.45µm	No	100	500
F2500-6	30mm	0.2µm	No	100	500

**Regenerated Cellulose Syringe Filters****Target® Regenerated Cellulose Syringe Filters**

- Membrane: HPLC Certified Regenerated Cellulose
- Housing: medical grade, virgin polypropylene
- Protein binding: <5µg/cm<sup>2</sup>
- Connections: enhanced female Luer-Lok™ inlet, male slip outlet
- Max. operating temperature: 110°C
- Max. operating pressure: 4mm - 75psi, 17mm - 115psi, 30mm - 90psi
- Retention volumes: 4mm - <15µL, 17mm - <29µL, 30mm - <137µL

NSC PART NO.	DIAMETER	PORE SIZE	PREFILTER INCLUDED	PACK OF	CASE OF
F2504-7	4mm	0.45µm	No	100	500
F2504-8	4mm	0.2µm	No	100	500
F2513-7	17mm	0.45µm	No	100	500
F2513-8	17mm	0.2µm	No	100	500
F2500-7	30mm	0.45µm	No	100	500
F2500-8	30mm	0.2µm	Yes	100	500

**PES (Polyethersulfone) Syringe Filters****Target® PES (Polyethersulfone) Syringe Filters**

- Membrane: ICP Certified PES (Polyethersulfone)
- Housing: medical grade, virgin polypropylene
- Connections: enhanced female Luer-Lok™ inlet, male Luer slip outlet
- Max. operating temperature: 100°C
- Max. operating pressure: 4mm - 75psi, 17mm - 115psi, 30mm - 90psi
- Retention volumes: 4mm - <15µL, 17mm - <29µL, 30mm - <137µL

NSC PART NO.	DIAMETER	PORE SIZE	PREFILTER INCLUDED	PACK OF	CASE OF
F2513-14	17mm	0.45µm	No	100	500
F2513-17	17mm	0.2µm	No	100	500
F2500-14	30mm	0.45µm	No	100	500
F2500-17	30mm	0.2µm	No	100	500



# Target® HPLC Syringe Filters

## GMF (Glass MicroFiber) Syringe Filters

### Target® GMF (Glass MicroFiber) Syringe Filters

- Membrane: Binder-free Glass Microfiber
- Housing: medical grade, virgin polypropylene
- Connections: enhanced female Luer-Lok™ inlet, male Luer slip outlet
- Max. operating temperature: 110°C
- Max. operating pressure: 30mm - 90psi
- Retention volumes: 30mm - <137µL

NSC PART NO.	DIAMETER	PORE SIZE	PREFILTER INCLUDED	PACK OF	CASE OF
F2500-18	30mm	0.7µm	No	100	500
F2500-19	30mm	1.2µm	No	100	500
F2500-20	30mm	3.1µm	No	100	500



## Polypropylene Syringe Filters

### Target® Polypropylene Syringe Filters

- Membrane: Hydrophilic Polypropylene
- Housing: medical grade, virgin polypropylene
- Connections: enhanced female Luer-Lok™ inlet, male slip outlet
- Max. operating temperature: 110°C
- Max. operating pressure: 17mm - 115psi, 30mm - 90psi
- Retention volumes: 17mm - <29µL, 30mm - <137µL

NSC PART NO.	DIAMETER	PORE SIZE	PREFILTER INCLUDED	PACK OF	CASE OF
F2504-9	4mm	0.45µm	No	100	500
F2504-10	4mm	0.2µm	No	100	500
F2513-9	17mm	0.45µm	No	100	500
F2513-10	17mm	0.2µm	No	100	500
F2500-9	30mm	0.45µm	No	100	500
F2500-10	30mm	0.2µm	No	100	500
F2502-9	30mm	0.45µm	Yes	100	500

## Cellulose Acetate Syringe Filters

### Target® Cellulose Acetate Syringe Filters

- Membrane: HPLC Certified Cellulose Acetate
- Housing: medical grade, virgin polypropylene
- Protein binding: <24µg/cm²
- Connections: enhanced female Luer-Lok™ inlet, male Luer slip outlet
- Max. operating temperature: 110°C
- Max. operating pressure: 4mm - 75psi, 17mm - 115psi, 30mm - 90psi
- Retention volumes: 4mm - <15µL, 17mm - <29µL, 30mm - <137µL

NSC PART NO.	DIAMETER	PORE SIZE	PREFILTER INCLUDED	PACK OF	CASE OF
F2504-15	4mm	0.45µm	No	100	500
F2504-16	4mm	0.2µm	No	100	500
F2513-15	17mm	0.45µm	No	100	500
F2513-16	17mm	0.2µm	No	100	500
F2500-15	30mm	0.45µm	No	100	500
F2500-16	30mm	0.2µm	No	100	500

## Target® Syringe Filter Membrane Selection Guide

### Choose a filter or membrane based on:

1. Chemical compatibility of the membrane and housing with your sample matrix
2. Size and amount of particulates in the sample
3. Potential interactions (binding) between the membrane and sample components
4. Special considerations such as requirement for pre-filter or inorganic ion certification

### Target Syringe Filter Housings

- Target Syringe filter housings are manufactured from solvent-resistant, low-extractable polypropylene resins specifically selected for wide compatibility with common HPLC sample matrices.
- Solutions at temperatures up to 100°C can be filtered using Target syringe filters.
- Target syringe filters can be sterilized by autoclave at 125°C for 15 minutes.
- The inlet connection is an enhanced female Luer-Lok™ fitting designed for extra security when attached to a Luer-Lok syringe.
- The outlet fitting is a standard size male Luer-slip fitting for ease of filtrate collection.
- Target polypropylene syringe filter housings meet the requirements of 21 CFR 177.1520.

### This table offers general guidelines for membrane characteristics and compatible applications.

Membrane Type	Membrane Characteristics	Applications
Cellulose Acetate	Low protein binding, ideal for aqueous-based samples; high protein recovery from filtrate; lower protein binding compared to PVDF	Tissue Culture media filtration, sensitive biological samples
Glass MicroFiber	Larger porosity; able to remove large particulates without clogging	Dissolution testing, general filtration
Nylon	Most frequently selected membrane; broad compatibility with aqueous and organic samples; naturally hydrophilic membrane; extremely low in extractables; excellent flowrate with most sample matrices; not compatible with strong acids or bases	General laboratory filtration; filtration for most HPLC samples. <b>NOTE:</b> Nylon binds protein, do not use when high protein recovery is desired
Polyethersulfone	High flowrates with good throughput volume; low protein binding; compatible with high temperature liquids; mechanically strong membrane low in inorganic extractable ions	PES is certified for Ion Chromatography; Tissue Culture filtration; filtration of proteins and nucleic acids
Polypropylene	Hydrophilic membrane has wide chemical compatibility with organic solvents; low nonspecific protein binding	Filtration of biological samples; filtration of aggressive organic solutions
PTFE	Hydrophobic membrane is resistant to nearly all solvents, acids, and bases; membrane is mechanically strong and will withstand exposure to high temperature liquids; low in extractables; PTFE blocks water vapor; can be used to filter aqueous solutions after prewetting with an alcohol	Filtration of aggressive organic, highly basic or hot solutions, ideal for transducer protectors
PVDF	Hydrophilic membrane with good solvent resistance; low UV absorbing extractables and low nonspecific binding	General biological filtration; filtration of samples where high protein recovery is desired
Regenerated Cellulose	Hydrophilic membrane with good solvent resistance, extremely low nonspecific binding; compatible with nearly all common HPLC solvents; tolerates aqueous samples in pH range of 3 to 12	Membrane of choice for low nonspecific binding applications; Tissue Culture media filtration and general biological sample filtration