



YMC Pilot^{PLUS}

The New Standard
For Pilot Scale Applications

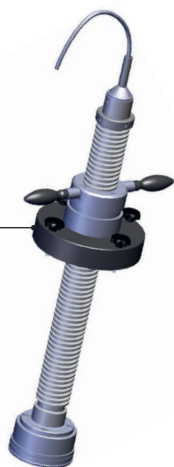


Biocompatible

Easy Handling

Fast Packing

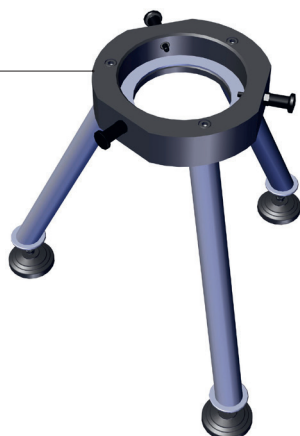
Adjustable Endpiece



Column Body

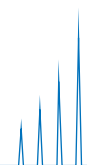


Column Stand



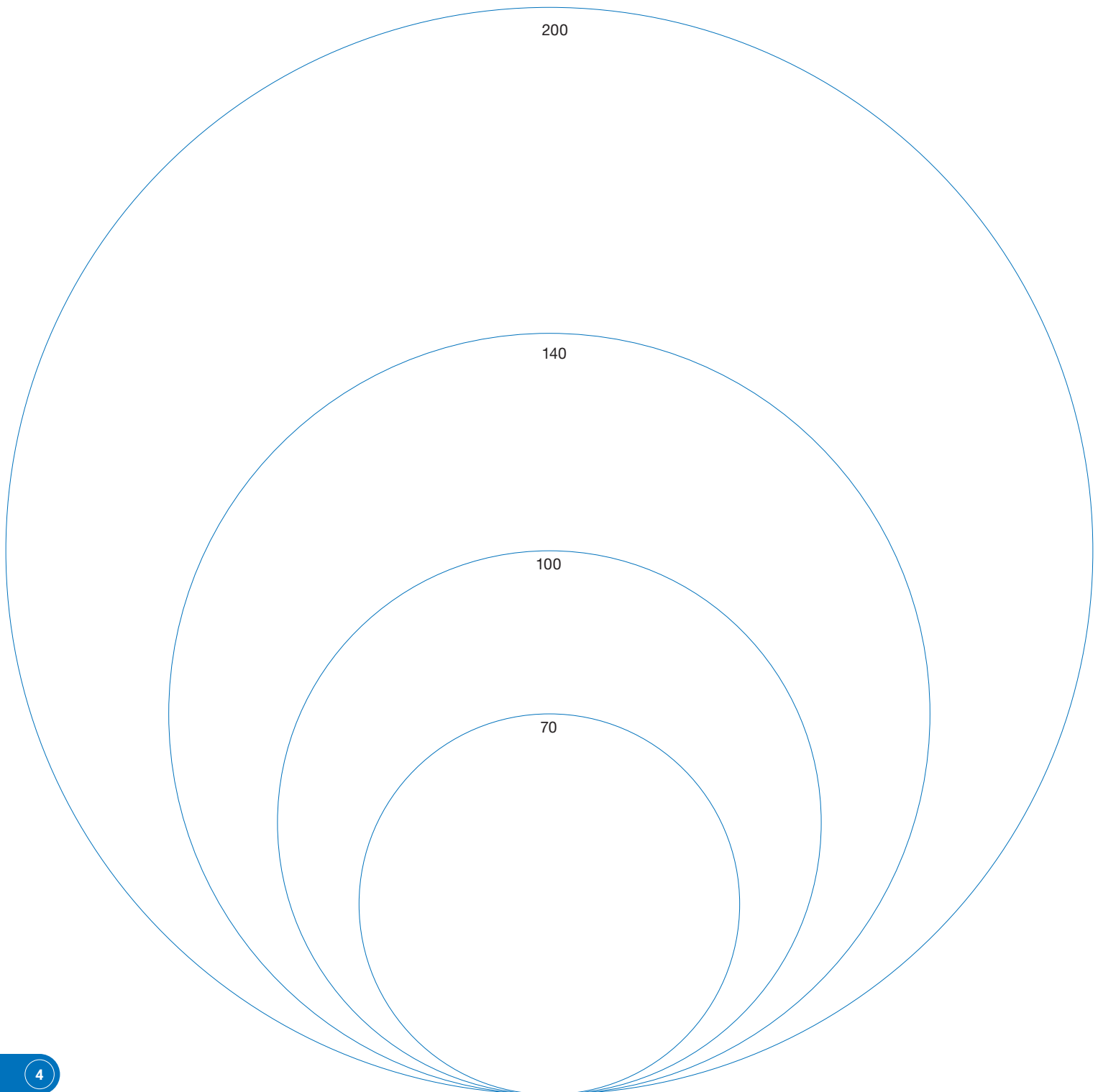
Contents

| | |
|---|--------------|
| Product Range..... | 4 |
| YMC Pilot^{PLUS} – The New Standard | 5 |
| YMC Pilot^{PLUS} – Your Benefits | 6 |
| Safe and Easy Handling | 7–8 |
| Fast Slurry Transfer..... | 7 |
| The Innovative Drain Function for Bubble-Free Piston Insertion..... | 8 |
| Easy Piston Adjustment | 9 |
| Unique Sealing Principle | 10 |
| Removable Column Body | 11–12 |
| Reliable Column Locking..... | 11 |
| Technical Information | 13–14 |
| Technical Information: 70 mm ID..... | 13 |
| Technical Information: 100 mm ID..... | 13 |
| Technical Information: 140 mm ID..... | 14 |
| Technical Information: 200 mm ID..... | 14 |
| Ordering Guide Column | 15 |
| Ordering Guide Column Stand | 16 |
| Chemical Resistance | 17 |
| Also of Interest | 18 |
| Questionnaire | 19 |



Product Range

| | |
|-------------------------------|-------------------|
| Inner Diameter [mm] | 70, 100, 140, 200 |
| Length Glass Body [mm] | 500, 850 |
| Temperature Range [°C] | 4–40 |

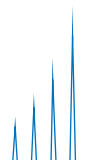


YMC Pilot^{PLUS} – The New Standard

YMC Pilot^{PLUS} is the new standard for your pilot scale applications. It is completely biocompatible and characterised by safe and easy handling. Packing, operating and unpacking the column is a smooth procedure due to a number of significant advantages.



- The unique sealing principle provides permanent sealing and extremely small dead areas.
- The innovative drain function makes piston assembly fast and clean.
- Due to the removable column body, unpacking and cleaning of the column is easily performed.



YMC Pilot^{PLUS} – Your Benefits



Safe and Easy Handling

- Piston insertion without air bubbles
- Safe and simple unpacking
- Fast slurry transfer



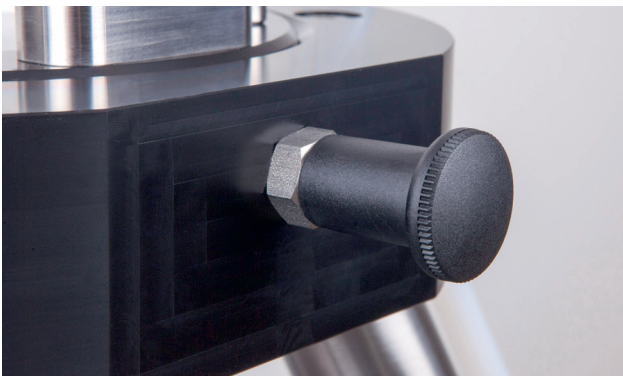
Easy Piston Adjustment

- Inclined glass body surface
- Easily sliding gasket
- Optimised flow distribution



Unique Sealing Principle

- Extremely small dead areas
- Tool-free frit removal
- Combined sealing and frit fixation



Removable Column Body

- Locking bolts for fast removal
- Handles for simplified transportation
- Easy unpacking in upside-down position

Safe and Easy Handling

Pilot columns are most frequently packed by means of slurry packing methods. In this case, where the gel is suspended in the eluent, it is very important to initiate the packing process as quickly as possible. Therefore, the following steps need to be performed without delays.

1. **The gel needs to be transferred quickly into the column body without introduction of air.**
2. **The piston needs to be inserted without delay, as the packing pressure needs to be applied as soon as possible.**

But column packing procedures face hurdles. During the slurry filling introduction of excessive air bubbles needs to be avoided. Therefore, filling has to be done carefully and slowly, but with minimum delay. Most pilot columns do not include a handy device for slurry transfer making filling time consuming and bead sedimentation difficult to avoid.

Fast Slurry Transfer

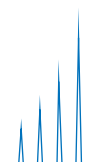
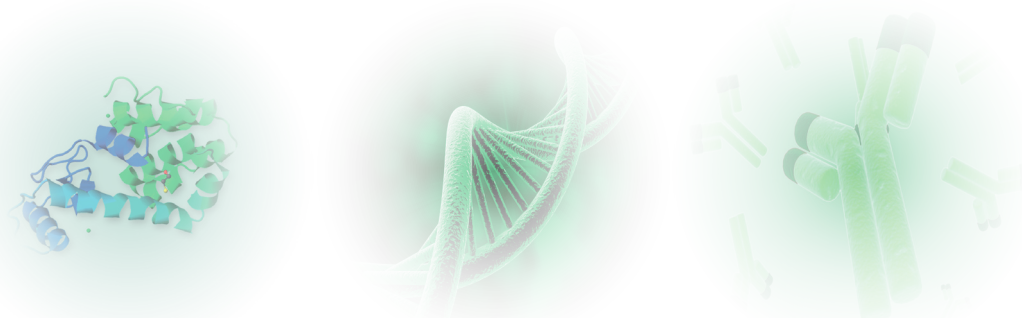
Rapid, bubble-free slurry transfer with the handy infilling assistance tool!

The infilling assistance is available in all column IDs for perfect fit.



With no metal present, YMC Pilot^{PLUS} is the perfect match for BioLC applications.

Biomolecules such as peptides, proteins, antibodies and oligonucleotides have complex 3D structures, which can be distorted by metal ions.



The Innovative Drain Function for Bubble-Free Piston Insertion

Most pilot columns require insertion of the piston vertical to the column, which causes trapped air between the frit and solvent surface. This air needs to be removed before the packing process can continue resulting in uncontrolled sedimentation progresses. A thick gel layer at the column base and a lower density in the upper column body appear. This leads to a non-homogenous columnbed which results in a lower performance.

Consequently, the overall process costs increase due to inferior chromatographic results; or even worse in consecutive packing steps with respective loss of precious time.

Through an inclined surface at the glass body and the drain function, the piston can easily be inserted into the eluent. Excessive solvent easily flows off through the drain function.



Bubble-free piston insertion due to the smart drain function – smooth packing process, guaranteeing a well packed column for great chromatographic performance!

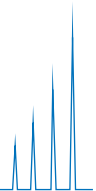
Easy Piston Adjustment



When the piston is inserted, the gasket seals permanently. This way, dead volumes are reduced to a minimum! Due to the unique construction, the gasket slides easily up and down the column.



Instructions on the piston clearly indicate how to adjust the piston.





Unique Sealing Principle

The unique sealing principle combines sealing and frit fixation. This makes the frit and gasket removal very easy and tool-free! This is important as these two spare parts need to be inspected every time the column is packed.

Due to the special frit construction, the flow path is optimised and the sample is distributed evenly on the column bed. That provides improved chromatographic results.



The piston fixation is done with star screws – no tools are required!

Removable Column Body

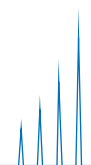
The key for fast unpacking is the removable YMC Pilot^{PLUS} column body. It can be swiftly unlocked using the three locking bolts.

Turned into upside-down position, the unpacking step is clean and quickly performed.



Reliable Column Locking

The removable column body is tightened and un-tightened using the three handy locking bolts.





Every column is equipped with 4 handles for:

- safe transportation
- easy lifting of column body out of the column stand
- simple unpacking in upside-down position
- safe movement with a wheeled version column stand



The column stand is available in two versions:

1. Levelled version for in-process operation
2. Wheeled version for transportation and storage

Technical Information: 70 mm ID

| | Length Glass Body | |
|----------------------------------|----------------------|----------------------|
| | 500 mm | 850 mm |
| Bed Length [mm] | 100–450 ¹ | 250–800 ¹ |
| Column Volume [L] | 0.4–1.7 | 1.0–3.0 |
| Pressure Limit [bar] | 16 | 16 |
| Temperature Range [°C] | 4–40 | 4–40 |
| Total Weight [kg] | 19 | 23 |
| Weight Adjustable End Piece [kg] | 3.2 | 3.7 |
| Footprint [mm] | 620 | 620 |
| Maximum Column Height [mm] | 1,700 | 2,250 |



¹depending on packing material and packing method

Technical Information: 100 mm ID


| | Length Glass Body | |
|----------------------------------|----------------------|----------------------|
| | 500 mm | 850 mm |
| Bed Length [mm] | 100–450 ¹ | 250–800 ¹ |
| Column Volume [L] | 0.8–3.5 | 2.0–6.2 |
| Pressure Limit [bar] | 10 | 10 |
| Temperature Range [°C] | 4–40 | 4–40 |
| Total Weight [kg] | 20 | 24 |
| Weight Adjustable End Piece [kg] | 3.5 | 4.0 |
| Footprint [mm] | 620 | 620 |
| Maximum Column Height [mm] | 1,700 | 2,250 |



¹depending on packing material and packing method

Technical Information: 140 mm ID


| | Length Glass Body | |
|----------------------------------|----------------------|----------------------|
| | 500 mm | 850 mm |
| Bed Length [mm] | 100–450 ¹ | 250–800 ¹ |
| Column Volume [L] | 1.5–6.9 | 3.8–12.3 |
| Pressure Limit [bar] | 7 | 7 |
| Temperature Range [°C] | 4–40 | 4–40 |
| Total Weight [kg] | 37 | 45 |
| Weight Adjustable End Piece [kg] | 7.3 | 7.8 |
| Footprint [mm] | 750 | 750 |
| Maximum Column Height [mm] | 1,750 | 2,300 |



¹depending on packing material and packing method

Technical Information: 200 mm ID

| | Length Glass Body | |
|----------------------------------|----------------------|----------------------|
| | 500 mm | 850 mm |
| Bed Length [mm] | 100–450 ¹ | 250–800 ¹ |
| Column Volume [L] | 3.1–14.1 | 7.8–25.1 |
| Pressure Limit [bar] | 5 | 5 |
| Temperature Range [°C] | 4–40 | 4–40 |
| Total Weight [kg] | 38 | 47 |
| Weight Adjustable End Piece [kg] | 8.0 | 8.6 |
| Footprint [mm] | 750 | 750 |
| Maximum Column Height [mm] | 1,750 | 2,300 |

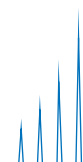


¹depending on packing material and packing method

Ordering Guide Column

Column (Column body and adjustable end piece)

| Product Code | Description |
|-----------------------|---|
| PPL70/500PE10 | Inner diameter: 70 mm Column Body Length: 500 mm Frits: Polyethylene 10 µm |
| PPL70/850PE10 | Inner diameter: 70 mm Column Body Length: 850 mm Frits: Polyethylene 10 µm |
| PPL100/500PE10 | Inner diameter: 100 mm Column Body Length: 500 mm Frits: Polyethylene 10 µm |
| PPL100/850PE10 | Inner diameter: 100 mm Column Body Length: 850 mm Frits: Polyethylene 10 µm |
| PPL140/500PE10 | Inner diameter: 140 mm Column Body Length: 500 mm Frits: Polyethylene 10 µm |
| PPL140/850PE10 | Inner diameter: 140 mm Column Body Length: 850 mm Frits: Polyethylene 10 µm |
| PPL200/500PE10 | Inner diameter: 200 mm Column Body Length: 500 mm Frits: Polyethylene 10 µm |
| PPL200/850PE10 | Inner diameter: 200 mm Column Body Length: 850 mm Frits: Polyethylene 10 µm |

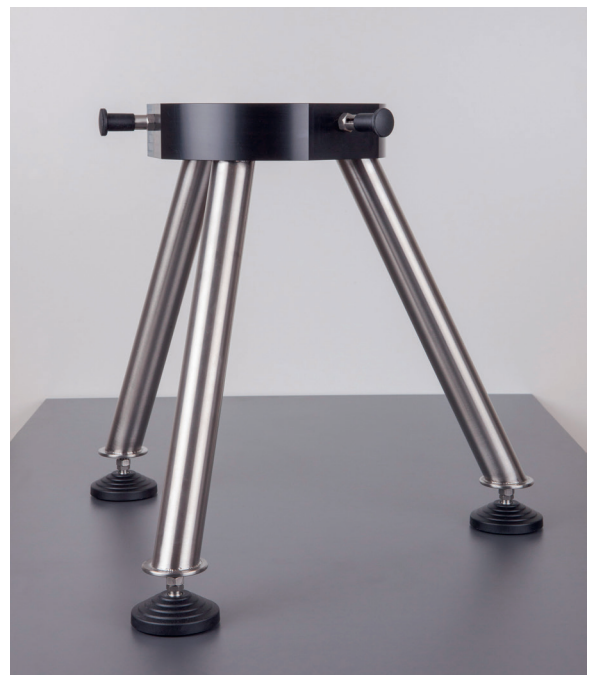
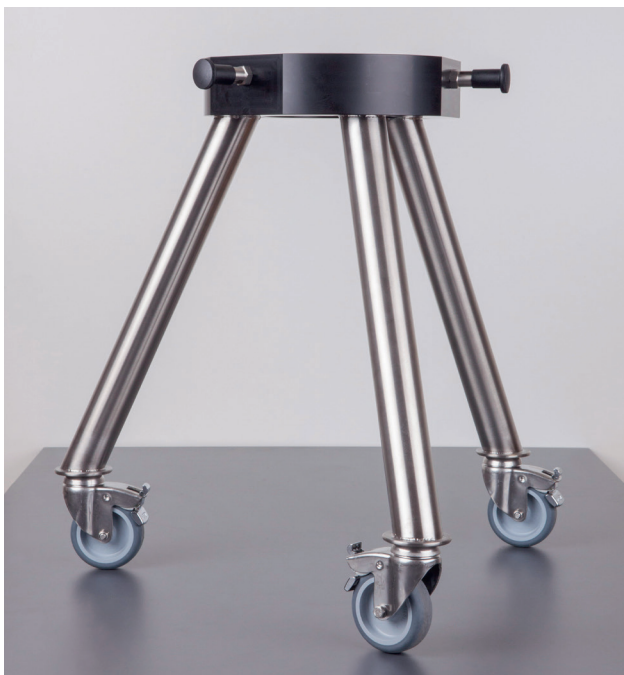


Ordering Guide Column Stand

| Product Code | Description |
|-------------------|---|
| PPL70-100/StandL | YMC Pilot ^{PLUS} Column Stand levelled version 70–100 mm ID |
| PPL70-100/StandW | YMC Pilot ^{PLUS} Column Stand wheeled version 70–100 mm ID |
| PPL140-200/StandL | YMC Pilot ^{PLUS} Column Stand levelled version 140–200 mm ID |
| PPL140-200/StandW | YMC Pilot ^{PLUS} Column Stand wheeled version 140–200 mm ID |

Regulatory Support

All wetted parts are in compliance with FDA regulations. Certification and full documentation (BSE/TSE, USP Class VI) are available for validation purposes.



Chemical Resistance

| Solvent | Wetted Parts: Borosilicate glass 3.3, FEP, PE, PTFE, PEEK, 75 Fluoroprene XP41 |
|---------------------------------------|--|
| Acetone | Not resistant |
| Acetonitrile | Limited resistant |
| Ammonium dihydrogen phosphate | Resistant |
| Cyclohexane | Limited resistant |
| Dichloromethane | Not resistant |
| 0.1 M EDTA (3%) | Resistant |
| 1 M Acetic acid (6%) | Resistant |
| Ethanol | Resistant |
| Ethyl acetate | Not resistant |
| <i>n</i> -hexane | Limited resistant |
| Isopropanol | Resistant |
| Methanol | Resistant |
| 2 M NaOH (8%) | Resistant |
| 1 M HCl (4%) | Resistant |
| 8 M Urea (36%) | Resistant |
| 1 M NaCl | Resistant |
| 0.5 M Na ₂ SO ₄ | Resistant |

Not resistant

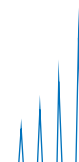
Limited resistant

Resistant

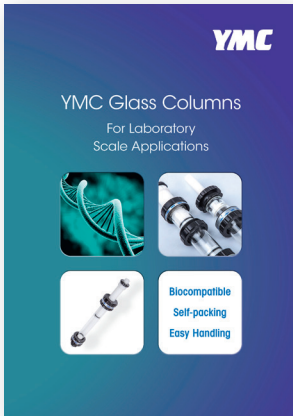
If your solvent is not listed, please contact us for chemical resistance check.

Note: The resistance is based on the resistance of each wetted part. If one part is limited or not resistant, the whole column is marked with this characteristic as this part is critical.

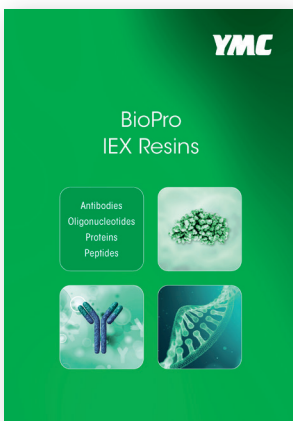
For all columns, where the combination of the wetted parts varies from the above listed ones, the chemical resistance can vary, too. Therefore, please contact us for assistance regarding the chemical resistance.



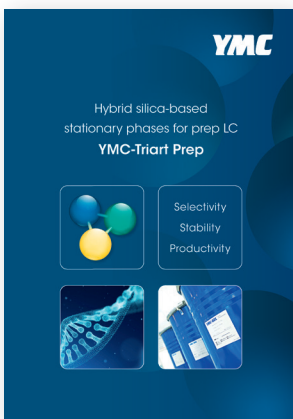
Please inquire for the corresponding catalogues



YMC Glass Columns For Laboratory Scale Applications
 ECO and ECO^{PLUS} glass columns for laboratory scale applications from 5 mm to 80 mm inner diameter.



YMC's BioPro IEX are polymeric ion exchange resins for the purification of biologicals. They represent one part of the three part YMC-Prep portfolio: silica, hybrid silica and polymer media.



YMC-Triart Prep is a hybrid silica phase, stable between pH 2.0–10.0. It is available with various modifications for RP purifications.

For help in selecting your laboratory or pilot scale glass column, please complete this questionnaire and return it to your rep or to info@ymc-america.com.

Questionnaire for YMC Glass Columns

1. Inner diameter (mm): _____
2. Minimum bed length (mm): _____
3. Maximum bed length (mm): _____
4. Bed volume (mL): _____
5. Maximum pressure (bar): _____
6. Temperature range: _____
7. Biocompatibility: Yes No
8. Packing material: _____
9. Particle size of packing material: _____
10. Solvents: _____
11. Are you interested in column packing services? Yes No
12. Quotation for packing adapter required: Yes No
13. Regulatory requirements: _____
13. Additional notes: _____

Your local contact:

YMC America, Inc.
8 Charlestown Street
Devens, MA 01434
Phone +1 978 487 1100
Email: info@ymcamerica.com
www.ymcamerica.com

YMC

YMC CO., LTD.

www.ymc.co.jp

YMC Europe GmbH

www.ymc.eu

YMC America, Inc.

www.ymcamerica.com

YMC Switzerland LLC

www.ymc-schweiz.ch

YMC India Pvt. Ltd.

www.ymcindia.com

YMC Shanghai Rep. Office

www.ymcchina.com

YMC Korea Co., Ltd.

www.ymckorea.com

YMC Taiwan Co., Ltd.

www.ymctaiwan.com

YMC Singapore Tradelinks Pte. Ltd.

www.ymc.sg