



ZETA PLUS® DELIPID SERIES



Delipid is a depth filter which acts as a selective adsorptive media for lipid removal.

Delipid is made of inorganic filter aids, cationic resin and cellulose.

Applications

- Blood-derived products
- Protein and enzyme solutions
- Cell culture growth media
- Biomass extracts
- Protection of chromatographic systems.

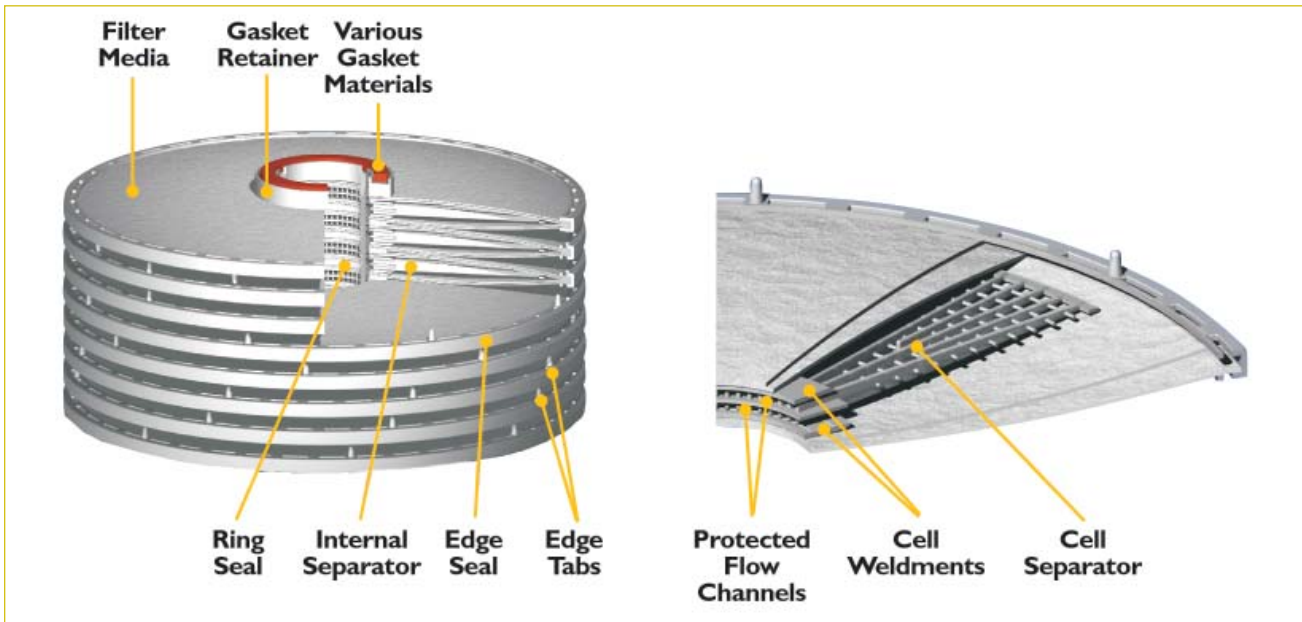
PYROGENICITY

The pyrogen level has been evaluated by LAL “gel clot” after dynamic flow rinse.

| DELIPID PYROGENICITY | |
|----------------------|-----------------|
| DEL1 | DEL1 LP |
| < 0.5 EU / ml | ≤ 0.125 EU / ml |

| Features | Benefits |
|--|--|
| <ul style="list-style-type: none"> • Depth filter media with hydrophobe and lipid specific adsorbents. | <ul style="list-style-type: none"> • Provides effective protection and extended life for chromatography columns and reusable membranes. |
| <ul style="list-style-type: none"> • Variety of cartridge sizes, disposable capsules and filter sheets. | <ul style="list-style-type: none"> • Highly scaleable • Flexible options for all flow and batch volume requirements. |
| <ul style="list-style-type: none"> • Totally enclosed, sanitary-design system and cartridge housings. | <ul style="list-style-type: none"> • Easily cleanable, no external contamination, offers rapid assembly and take-down. |
| <ul style="list-style-type: none"> • Tested and optimized for pharmaceutical and biological service. | <ul style="list-style-type: none"> • Safe for critical pharmaceutical, bioprocessing and biological applications. • Components meet USP Class VI Biological Safety Tests and requirements of CFR 21. |

CARTRIDGE CONSTRUCTION :



CARTRIDGE CONSTRUCTION

Zeta Plus® Delipid cartridges are constructed from individual cells. Each cell is constructed using polypropylene molded edge seals and internal separators for high performance. The cells are made into a single unit by three 316 stainless steel bands with polypropylene cell separators. Various gasket materials are available depending upon application. Filter cartridges are available in 8, 12 and 16-inch diameters.

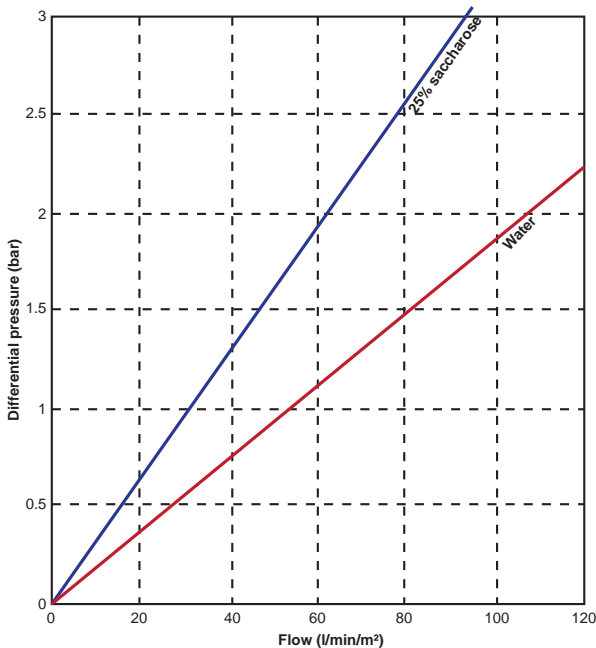
CAPSULE CONSTRUCTION

Zeta Plus® Delipid filters are available in three different sizes (25, 650 and 1300 m² filtration area) of fully disposable BioCap® capsules for bench and pilot-scale filtration.



DELIPID FILTER SHEETS

Delipid filter media is available in a range of filter sheet sizes to fit plat-and-frame filter presses (contact CUNO for specific sheet sizes and part numbers).



FLOW RATES

The figure at the left describes the flow rates for clean water and for a 25% saccharose solution in water. A flow rate of 1.5 to 3.0 l/min./m² will be recommended in most applications to ensure optimal efficiency and maximal filter life.

QUALITY ASSURANCE

Zeta Plus® Delipid cartridges are manufactured in accordance with a strict quality assurance programme, following ISO regulation. In addition, each Zeta Plus Delipid cartridge packaging is labeled with a lot identification number to provide complete traceability.

PERFORMANCE

The flow of solution is continuously in contact with Zeta Plus® Delipid, this results in continuous and highly efficient lipid adsorption. Lipid removal efficiency will vary significantly with contact time, pH, conductivity, composition of the sample, nature and concentration of the lipids in the sample.

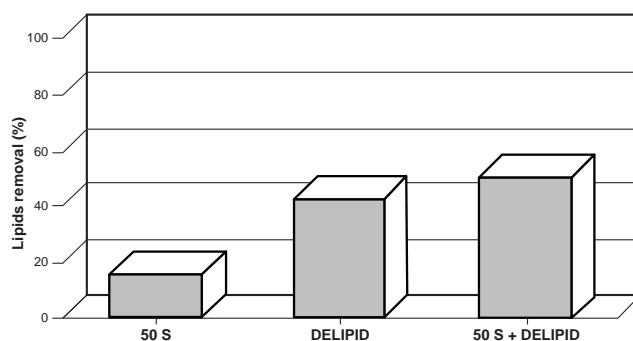
As shown in the following graph to ensure maximum life of Delipid we recommend the use of a prefilter such as Zeta Plus® 50 S or 50 HT grade.

Lipid removal capacity from human plasma using Delipid:

Plasma 1/10 in phosphate buffer

pH = 7 ; T = 25°C

Delipid : 47 mm diameter disc



EXTRACTABLES

The level of extractables has been evaluated by two different methods: a soak test at 25°C and 82°C and/or a dynamic flow rinse with 54 l/m² of WFI (Water For Injection).

| EXTRACTABLES | EXTRACTION | | |
|--------------|------------------------|----------|-----------------------------------|
| | 25 mg / g media | | |
| | Soak test (mg/g media) | | Dynamic flow rinse (ppb) |
| Inorganic | 25°C | 82°C | |
| Calcium | < 0.0060 | < 0.0020 | ND |
| Potassium | < 0.0060 | < 0.0261 | 122 |
| Magnesium | < 0.0025 | < 0.0012 | 132 |
| Zinc | < 0.0002 | < 0.0003 | 19.0 |
| Copper | < 0.0010 | < 0.0010 | 09.2 |
| Aluminium | < 0.0001 | < 0.0001 | pH = 7.0 < 10.0 - pH = 4.0 < 10.0 |
| Iron | ND | ND | < 5.0 |
| Lead | ND | ND | < 10.0 |
| Nickel | ND | ND | < 15.0 |
| Silica | ND | ND | < 3.920 |
| Cadmium | ND | ND | < 1.0 |
| Chromium | ND | ND | < 3.0 |

RECOMMENDED OPERATING PARAMETERS

| | |
|--------------------------------------|--|
| Maximum Operating Pressure | Standard Zeta Plus® Cartridges : 2.4 bar maximum cartridge pressure drop. BioCap® 25 Capsules : 2.75 bar maximum inlet pressure, 2.4 bar maximum media pressure drop. BioCap® 1000 / 2000 Series Capsules : 5.5 bar at 25°C, 2.75 bar at 60°C, maximum inlet pressure ; 2.4 bar maximum cartridge pressure drop. |
| Maximum Operating Temperature | Standard Zeta Plus® Cartridges : 82°C. BioCap® 25 Capsules : 40°C. BioCap® 1000 / 2000 Capsules : 60°C. |
| Recommended Pre-use Rinse | 54 l/m ² @ 20 lpm/m ² |
| Sterilization Parameters | Standard Zeta Plus® Cartridges : autoclave or in-situ steam sterilisation for 30 minutes at 121° C. BioCap® 25 : Autoclave for 30 minutes at 121° C (1 cycle). BioCap® 1000 / 2000 : Autoclave for 30 minutes at 121° C (up to 3 cycles). |
| Operating FLUX range | 1.2 - 12 lpm/m ² |

ZETA PLUS® DELIPID SERIES - ORDERING GUIDE

CARTRIDGES

| ZETA PLUS® | DIAMETER (inch) | CARTRIDGE DESIGN | GASKET TYPE | GRADE | FORMULATION |
|------------|-----------------|---|---|-------|-------------|
| Z | 08 | P - Plug-in 7 cells 0.23m ² | Standard: A - Silicone (MVQ)* | DEL1 | P LP |
| | | D - Standard 8 cells 0.26 m ² | Standard: D - Nitrile (NBR)* | | |
| Z | 12 | C - 9 cells / small 0.9 m ² M - Standard diffusion netting 15 cells - 1.4 m ² | Options: A - Silicone (MVQ)* B - Fluorocarbon (FPM)* C - EPR (EPDM)* | | |
| Z | 16 | M - Standard diffusion netting 14 cells - 3.2 m ² | | | |

*ISO Designation

BIOCAP® CAPSULES

| CATALOGUE NUMBER | GRADE & FORMULATION |
|--|---------------------|
| BC 0025L (Luer) - 25 cm ² area BC 0025S (Sanitary) - 25 cm ² area BC 1000A (single pack) - 650 cm ² area BC 1000B (3 pack) - 650 cm ² area BC 2000A (single pack) - 1300 cm ² area BC 2000B (3 pack) - 1300 cm ² area | DEL1 |

SCIENTIFIC APPLICATIONS SUPPORT SERVICES (SASS)

CUNO's Scientific Applications Support Services (SASS) is staffed by scientists and engineers, with state-of-the-art laboratory facilities.

The SASS staff, familiar with a wide range of filtration and separation applications, work closely with the customer to recommend the most effective and economical CUNO filtration systems.

Important Notice

CUNO MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Since a variety of factors can affect the use and performance of a CUNO product in a particular application, some of which are uniquely within the user's knowledge and control, user is responsible for determining whether or not the CUNO product is fit for a particular purpose and suitable for user's method of application.

Limitation of Remedies and Liability

If the CUNO product is proved to be defective, THE EXCLUSIVE REMEDY, AT CUNO'S OPTION, SHALL BE TO REFUND THE PURCHASE PRICE OR TO REPAIR OR REPLACE THE DEFECTIVE PRODUCT. CUNO shall not otherwise be liable for loss or damages, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including, but not limited to, contract, negligence, warranty or strict liability.

WARRANTY

Seller warrants its equipment against defects in workmanship and material for a period of 12 months from date of shipment from the factory under normal use and service and otherwise when such equipment is used in accordance with instructions furnished by Seller and for purposes disclosed in writing at the time of purchase, if any. Any unauthorised alteration or modification of the equipment by Buyer will void this warranty. Seller's liability under this warranty shall be limited to the replacement or repair, F.O.B., point of manufacture, of any defective equipment or part which, having been returned to the factory, transportation charges prepaid, has been inspected and determined by Seller to be defective. THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EITHER EXPRESSED OR IMPLIED, AS TO DESCRIPTION, QUALITY, MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE OR USE, OR ANY OTHER MATTER. Under no circumstances shall Seller be liable to Buyer or any third party for any loss of profits or other direct or indirect costs, expenses, losses or consequential damages arising out of or as a result of any defects in or failure of its products or any part or parts thereof or arising out of or as a result of parts or components incorporated in Seller's equipment but not supplied by the Seller.



3M Europe CUNO Division

Hermeslaan 7
1831 Diegem
Belgium
Phone: +32-2-7224500
Fax: +32-2-7224518
E-mail: infocuno-europe@mmm.com
Web site address: www.3m.eu

For more contact addresses visit our website www.cuno.com/international or www.3m.eu/filtration.

Data may be subject to change without further notice.

© 3M 2008. All rights reserved.

LITZPDEL.EU - 0208