



ERTELALSOP

THE FIRST NAME IN LIQUID FILTRATION

Cellulose Filter Media

Filter Cloth

Laboratory Filters

Disposable Capsules

Plate & Frame Filters

Filter Housings

Filter Presses

Mixers

PHARMACEUTICAL • CHEMICAL • UTILITIES • COSMETIC • WASTE WATER • FOOD & BEVERAGE
FLAVORS & FRAGRANCES • PHARMACEUTICAL • CHEMICAL • UTILITIES • COSMETIC • WASTE WATER
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ErtelAlsop is an innovator in the manufacturing of depth filter media and machinery for liquid filtration since the 1920's. As such, ErtelAlsop is your one source for all depth filtration and liquid processing products.

Stemming from the merger of Ertel Engineering and Alsop Engineering, ErtelAlsop developed the first pyrogen retentive media for a customer in 1943 to use in the manufacturing of penicillin for World War II. Originally developed by Alsop Engineering, ErtelAlsop maintains patents on the Disk-Pak lenticular cartridges as well as patents on enclosed plate and frame and sanitary plate filters. These proprietary designs are used throughout the world in the filtration of critical liquids.

As a leader in depth filtration for over 80 years, ErtelAlsop products are commonly used throughout a number of industries. ErtelAlsop filter media and machinery work to improve liquid process quality in chemical, food and beverage, flavor and fragrance, cosmetic, pharmaceutical, electric utility, and now waste water applications.

ErtelAlsop manufactures:

- Cellulose based depth filter media
- Precision cut depth filter cut discs, pads and sheets
- Single-use disposable depth filter capsules
- Pak lenticular depth filter cartridges
- Pharmaceutical grade and non-pharmaceutical grade housings, filter presses and mixers
- Laboratory cut disc housings

Our commitment to customer service and capability to meet customer design requirements continues to make ErtelAlsop stand apart from our competitors.



MARKETS SERVED

Typical Markets We Serve and Representative Filtration Applications

CHEMICAL

From scaleup to full production capacity, depth filters are used throughout the manufacturing process. To insure consistent lot to lot production and to meet product specifications, depth filtration is used in the purification of such things as: silicone, soaps, detergents, cutting oils, plating and etching solutions. Depth filtration is also used to remove impurities from volatile liquids such as kerosene, alcohol and cleaning fluids. The removal of excess oils, color, odor, particulate and undissolved components are easily achieved through the use of ErtelAlsop depth filter media and machinery.

COSMETIC

Fine degrees of filtration are required for producing fragrances, personal care and hair care products. Depth filters play a major role in assuring the highest degree of quality for perfumes, colognes, lotions and creams. The filtration of essential oils, from which many products acquire their fragrance, removes haze, particulate and filter aids which, may have been used in the refinement of these liquid cosmetics. In some cases, decolorization is essential for the presentation of a clean, clear product.

ELECTRIC UTILITY

In the Electric Utility industries, depth filtration plays a critical role in keeping equipment fault-free and running smoothly. The filtration of insulating and lubricating oils, such as circuit breaker, transformer and turbine lube, used by utility companies and industrial power generation facilities, is essential to the prevention of costly downtime. The common contaminants found in these oils are carbon, water, acid and particles caused by breakdown reactions, wear and other external forces.

FOOD AND BEVERAGE

As possibly the largest processor of liquids, the Food and Beverage Market provides countless opportunities for the implementation of depth filtration. From research and development applications in the laboratory to full commercial manufacturing of products ranging from alcoholic beverages, soft drinks, distilled spirits, fruit juices, flavorings, baby foods and syrups are all dependent upon the depth filtration process. Depth filtration helps to assure the quality that customers expect from raw materials to final product. Desired filtration results include the removal of haze, color, odor and particulate matter that would otherwise create an undesirable end product.

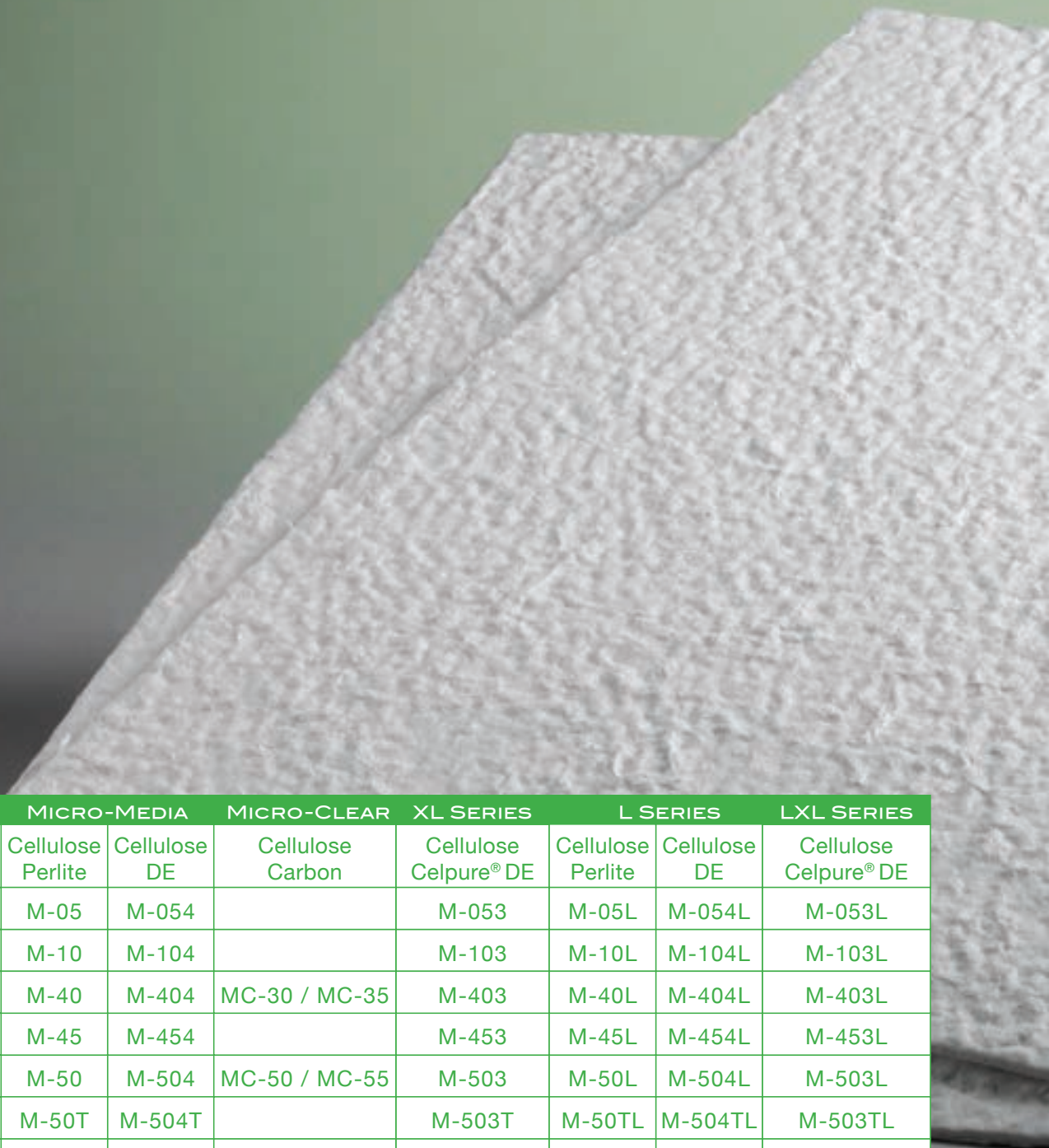
PHARMACEUTICAL

Today's challenging Life Science process streams require multiple filtration and purification steps to achieve a concentrated, clarified end product. Contaminant particle distribution can be very broad while unwanted solid concentrations can be extremely high. This broad range of process characteristics enables the benefits of ErtelAlsop's pharmaceutical grade depth filter products to be realized.

WASTE WATER

As industrial wastewater requirements become more stringent, effective filtration increases in importance. Precious Metal Recovery, Oily Sludge Dewatering, Refinery Waste Lagoon Sludge, and Municipal Waste Dewatering are just some examples of the applications the hard-working EA Series line of Recessed Chamber Filter Presses can tackle.

TOTAL PROCESS FILTRATION



	ALPHA	MICRO-MEDIA		MICRO-CLEAR	XL SERIES	L SERIES		LXL SERIES
RETENTION	100% Cellulose	Cellulose Perlite	Cellulose DE	Cellulose Carbon	Cellulose Celpure® DE	Cellulose Perlite	Cellulose DE	Cellulose Celpure® DE
15 µm	140	M-05	M-054		M-053	M-05L	M-054L	M-053L
10 µm		M-10	M-104		M-103	M-10L	M-104L	M-103L
5.0 µm	160	M-40	M-404	MC-30 / MC-35	M-403	M-40L	M-404L	M-403L
2.5 µm		M-45	M-454		M-453	M-45L	M-454L	M-453L
1.0 µm	175	M-50	M-504	MC-50 / MC-55	M-503	M-50L	M-504L	M-503L
0.8 µm		M-50T	M-504T		M-503T	M-50TL	M-504TL	M-503TL
0.45 µm		M-70	M-704	MC-70	M-703	M-70L	M-704L	M-703L
0.3 µm		M-85*	M-854		M-853	M-85L	M-854L	M-853L
0.25 µm			M-954		M-953	M-90L		M-953L

Filtration is generally accepted as the term for the separation of solid particles from liquids or gases. Throughout history, liquids have been filtered for three purposes:

- Clarifying liquids where the solids are considered waste and discarded.
- Separation of liquids from solids where both are retained separately.
- Recovery of solids where liquids are discarded.

Within the Chemical, Cosmetic, Electric Utility, Food & Beverage, and Pharmaceutical markets filtration is essential to the outcome of the final product.

To insure the trouble free filtration of various process solutions, ErtelAlsop offers the widest range of cellulose based depth filtration products in the world. From our complete line of filter paper, depth filter media and lenticular filter cartridges to our laboratory filters, plate and frame filter presses and lenticular cartridge housings, we can design and manufacture your filtration system and provide the appropriate filter media to achieve the clarity and functionality your application requires.



FILTER MEDIA SELECTION

ErtelAlsop depth filtration pads are available for installation in virtually all configurations of plate and frame and lenticular-type filter housings. These include formatted sizes to fit disc, square, and rectangular shaped filter presses and holders as well as lenticular cartridges and capsules.

FILTER MEDIA

PARTICLE RETENTION OF DEPTH FILTER MEDIA

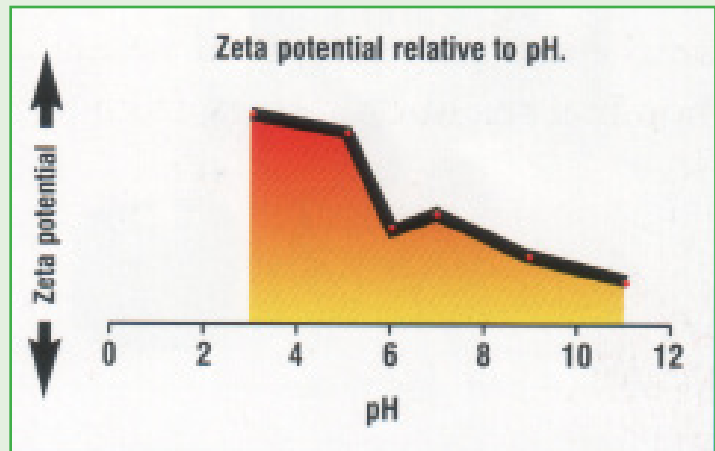
Cellulose-based depth filters are manufactured to provide a unique matrix of cellulose fibers and filter aids. This matrix creates an extremely efficient and cost effective filter media. Retention or entrapment of particles is achieved through two different mechanisms, depending on conditions and media grade. These means of retention are:

- **Size Exclusion** or sieving, where particles are simply too large to enter the medium, or once entered, become entrapped in a narrowing, tortuous flow pathway inherent in depth filter media.

- Zeta potential is the force by which particles smaller than the mean pore size of the filter media are held within the depth of the filter matrix by a positive electrokinetic attraction. Cationic food-grade resins are added to ErtelAlsop Micro-Media® filter media to modify the charge of our depth filters so that negatively charged particles are retained during the passage of liquid. Since the vast majority of suspended particles have a net negative charge, the adsorptive charge of this filter medium make them highly efficient in the removal of particles smaller than the filter's nominal rating without sacrificing product quality, increasing pressure drop, lowering flow rates or decreasing expected service life.

These two removal mechanisms incorporated into ErtelAlsop depth filter medias assure highly effective filtration for successful process filtration.

A third mechanism known as adsorption is the primary method by which color's and odors are removed from solutions through the use of powdered activated carbon (PAC). ErtelAlsop's Micro-Clear filter media incorporate PAC and are available in in both pharmaceutical and non-pharmaceutical grades.



The key to effective filtration is maintaining the lowest possible differential pressure across the filter media. High differential pressures may cause particles being retained by size exclusion or adsorption to be dislodged, by overcoming the forces that hold them.

ErtelAlsop manufactures three standard types of depth filtration media for industrial use.

Alpha-Media™ Filters

Micro-Media® Filters

Micro-Clear™ Filters

They are used extensively in filtration processes for the removal of fine particles, colloidal particles, bacteria and other sub-micronic particles in a wide variety of applications.

ALPHA-MEDIA™

Alpha-Media™ filters are manufactured from 100% cellulose. They contain no resins, binders, filter aids or synthetic microfibers. Three standard nominal retention ratings, from 10µm to 1µm are available.

GRADE	RETENTION
140	10µm
160	5µm
175	1µm



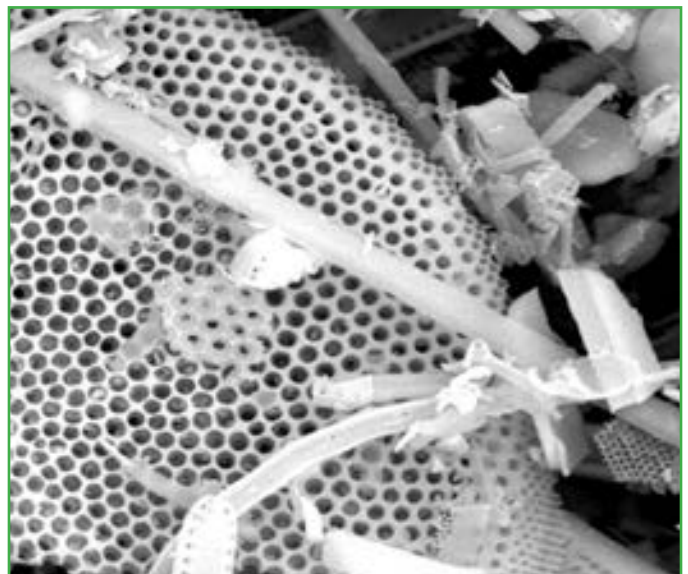
MICRO-MEDIA

Micro-Media filters are high-performance filter sheets containing cellulose, filter aids, and resin binders. They have very high solids-loading capacity and are available in standard nominal retention ratings from 10µm to 0.25µm. ErtelAlsop offers two series within the Micro-Media® group, utilizing either diatomaceous earth or perlite as a filter aid. Diatomaceous earth, fossilized sea life, has a microporous structure and a varying shape. This combination allows for improved filtration efficiencies with regard to the removal of particle fines and hazes. Volcanic ash, or perlite, is flat and resembles broken glass. Due to its more consistent shape and pore structure, perlite filter media is denser and provides increased media wet strength to the filter pad. By providing media manufactured with these two widely accepted filter aids, ErtelAlsop is uniquely positioned to accomplish any filtration requirement by providing the appropriate grade of filter media.

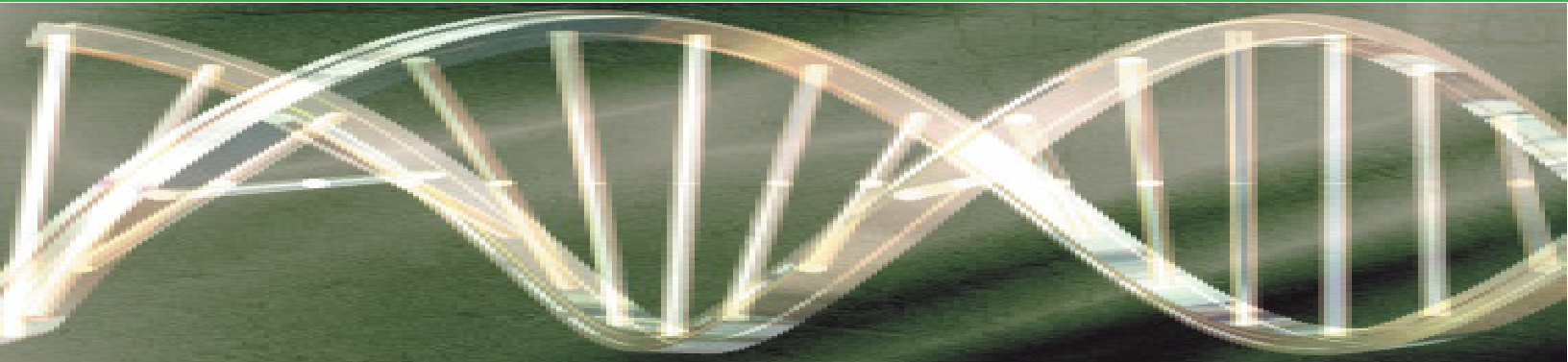
XL SERIES- MICRO-MEDIA

Micro-Media® XL Series Depth Filter Media, formulated with cellulose, wet strength resin, and an ultra-pure form of Diatomaceous Earth, is specifically designed for use in critical applications. DE can now meet the high quality standards dictated by 21CFR211.160 (b). Traditional “food-grade” forms of DE rarely meet USP-NF standards.

The use of an ultrapure form of Diatomaceous Earth in the manufacture of XL Series Media provides superior quality and lower extractable levels when compared to standard “food grade” DE as well as increased particle retention and product throughput.



FILTER MEDIA



PHARMACEUTICAL GRADE DEPTH FILTER SHEETS

The pharmaceutical and biotech markets require a high level of functional consistency and additional assurances to quality standards from filtration products. To provide a higher level of confidence to customers, ErtelAlsop makes available both a Drug Master File (DMF) and Validation Guides in support of their Pharmaceutical grade products.

ErtelAlsop pharmaceutical products are supported by individual Validation Guides for each grade of pharmaceutical depth filter media as well as associated formats and are available upon request.

Every Lot of Pharmaceutical grade product is tested for quality to assure compliance to our Validation Guides as well as ErtelAlsop's internal product specifications. This assures consistent performance, quality and Lot-to-lot uniformity from your first evaluation through the life of your production process.

Each shipment of ErtelAlsop pharmaceutical grade products include a Certificate of Conformance to confirm compliance to lot release specifications.

MICRO-MEDIA: XL SERIES

XL Series Depth Filter Media, formulated with cellulose, resin binders and an ultra-pure form of Diatomaceous Earth (DE) is specifically designed for use in critical applications requiring extremely low extractable and leachable levels for metal ions.

The use of ultra pure Diatomaceous Earth in the manufacture of XL Series Media provides superior quality and lower extractable levels when compared to standard "food grade" DE as well as increased particle retention and product throughput.



MICRO-MEDIA: L SERIES

L Series Micro-Media is designed for Life Science applications where 1,3 β D glucan interference may falsely indicate elevated endotoxin levels with some LAL test kits. Manufactured with a combination of specially treated cellulose fibers, filter aids and resin, L series filter media provides significant advantages for use in sensitive process conditions.

A particular source of extractables is 1,3 β D-glucan contamination in cellulose pulp used to manufacture depth filter media. The level of reactivity depends upon the amount of 1,3 β D-glucans released during the manufacturing of the filter media and the amount of Factor G present in LAL reagents, which varies by manufacturer.

ErtelAlsop minimizes 1,3 β D-glucan levels in cellulose pulp prior to manufacturing Micro-Media L filter media. This minimizes the effects of 1,3 β D-glucans and allows for validation of the LAL test on the product.

MICRO-MEDIA: LXL SERIES

The 9 grades of LXL media offer the combined advantages of the XL series ultra pure Diatomaceous Earth with the L series Beta glucan poor cellulose fibers to produce this superior depth filter media and making it the leading choice for Biopharm applications.

P-GRADE MICRO-MEDIA®

Pharmaceutical Grade Micro-Media® Series Depth Filter Media, formulated with cellulose, resin binders and diatomite and/or perlite is specifically designed for use in critical pharmaceutical and biotech applications. All components are listed and as generally recognized as safe for contact with food as dictated by 21CFR 176.170. Pharmaceutical Grade Micro-Media® Series Depth Filter Media is manufactured in accordance with ErtelAlsop's Drug Master File (DMF) and Validation Guides which are available upon request.

FILTER MEDIA

MICRO-MEDIA[®] FILTER PAPER

ErtelAlsop offers the most comprehensive selection of filter paper for applications in the chemical, cosmetic, Life Science and Food and Beverage markets. Historically, filter paper has been widely accepted as one of the most versatile types of filter media available. Due to a basic formulation of cellulose fibers with or without wet strength resins, it is highly compatible with any number of applications. It provides an economical solution where low solids retention or cake building is required.

With nominal retention ratings from 1µm to 100µm ErtelAlsop filter paper is available to fit virtually any filter press and is listed as safe for contact with food and pharmaceutical process solutions.

In the chemical and food and beverage industries, filter paper is used in clarifying process solutions or as a septum to hold cakes formed through the use of filter aids such as: diatomaceous earth, activated carbon, perlite, powdered cellulose, and used in conjunction with plate and frame filter presses, horizontal plate filters and Nutsch style filters.

In the filtration of cosmetics, flavors, fragrances, and personal care products, filter paper is used in applications with low solids content process solutions. In Life Science applications, filter paper is used for cake filtration or cake recovery. ErtelAlsop P-grade filter paper is supported by a Drug Master File at CDER.



MICRO-MEDIA FILTER PAPER

2000 Series: Unbleached, smooth, cellulose, wet strength resin

3000 Series: Unbleached, smooth, 100% cellulose

4000 Series: Unbleached, creped surface, cellulose, wet strength resin

5000 Series: Unbleached, creped surface, 100% cellulose

6000 Series: Bleached, smooth, cellulose, wet strength resin

7000 Series: Bleached, smooth, 100% cellulose

8000 Series: Bleached, creped surface, cellulose, wet strength resin

9000 Series: Bleached, creped surface, 100% cellulose

MICRO-CLEAR™

Activated Carbon Impregnated

This unique adsorptive media is designed to remove color and odor from process fluids to provide colorless and odorless process streams.

Through a blending of powdered activated carbon, cellulose fibers and resin binders we are able to provide 7 different grades of this filter media to choose from.

The adsorptive capabilities of powdered activated carbon is well known, and its use is widespread throughout industry. It is most often added as a loose powder to liquid processes. ErtelAlsop manufactures carbon impregnated adsorptive media in a range of removal ratings and configurations to fit most filter presses and lenticular cartridge formats. This provides standardization of carbon treatment in addition to simplicity and ease of handling and operation. No separate steps are required for the removal of the loose, finely divided carbon.

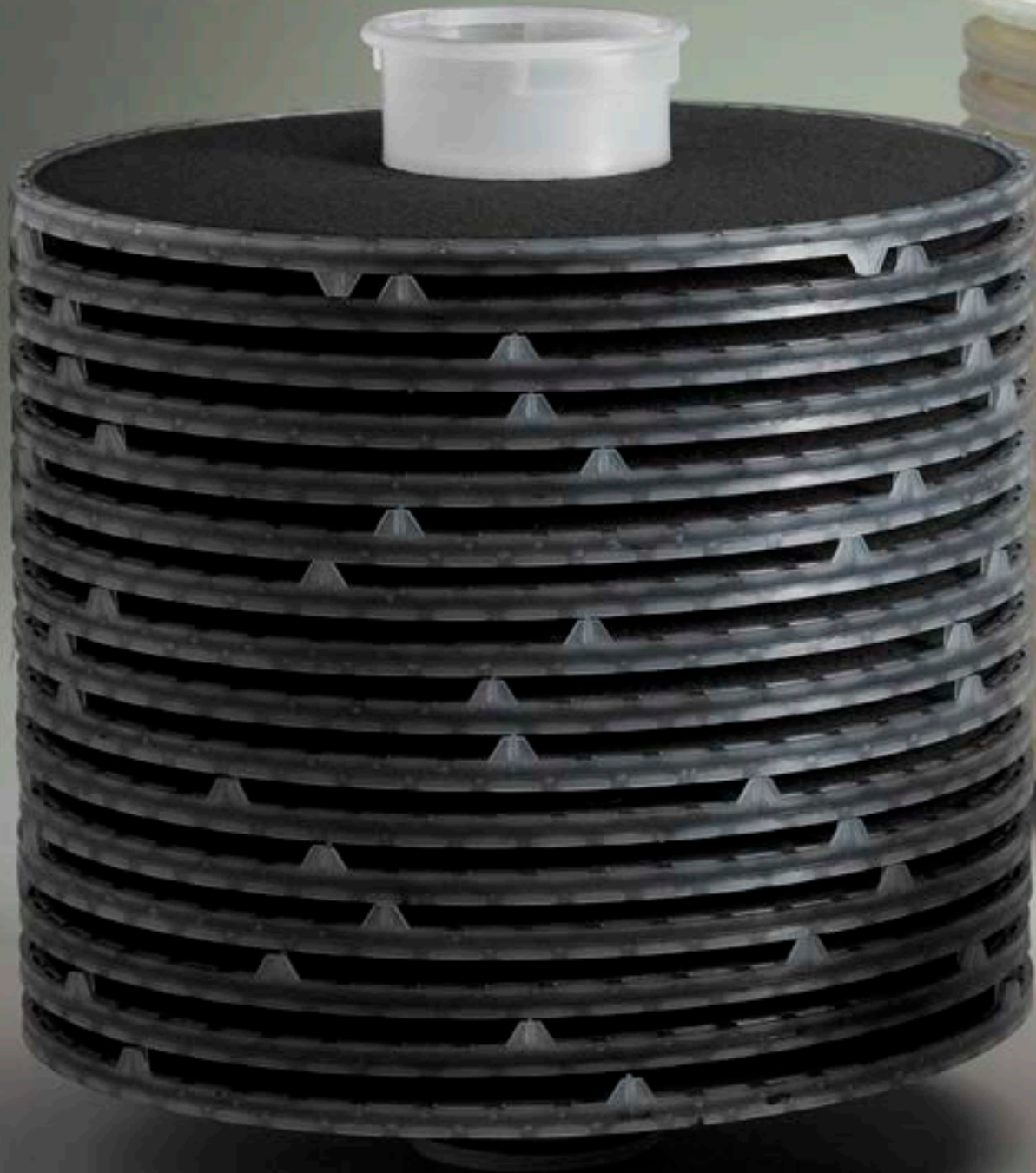
Several different grades of carbon can be used in the manufacture of Micro-Clear™ filter media to provide specific adsorptive qualities. Contact ErtelAlsop or your local authorized representative directly to discuss how we can help you satisfy your filtration needs.





ERTELALSOP

THE FIRST NAME IN LIQUID FILTRATION



PAK LENTICULAR CARTRIDGES

In 1948, in response to a specific customer's needs, the first lenticular filter cartridge was invented and then patented by one of our founders, Samuel Alsop.

These requirements included a totally enclosed system, fast filter element change-out, and small footprint while providing all the benefits of depth filters in the traditional plate and frame format. Thus the first Disc-Pak filter was born.

Part Number Structure

Housing Diameter
12 = 12 Inch
16 = 16 Inch

Pak Height
W = 6-3/8" Flat Gasket
Double O-ring

X = 7-9/16" Flat Gasket
8-9/16" Double O-Ring

Y = 10-7/8" Flat Gasket
11-7/8" Double O-Ring

Media Grade
M-50 (Example)

Features
ZD = ZetaDri-Pak
KV = AquaKv-Pak

12

PO

Y

2

M-50

16

XX

Core
PO = Polypropylene Core
Double O-Ring End Cap

PF = Polypropylene Core
Flat Gasket End Cap

PS = Polypropylene Core
Double O-Ring
w/SS Ring for Steaming

Gasket Material
2 = Neoprene
3 = Viton
4 = EPDM
5 = Buna-N
6 = Silicone
7 = T.E.S
8 = Other

Number of Cells
3 to 18 Acceptable

PAK - STACKED DISC

PAK® CARTRIDGES

ErtelAlsop Pak® filters are available in several configurations and options. Cartridges are manufactured in 12 inch (30.5 cm) or 16 inch (40.6 cm) diameter and include from 5 to 18 stacked lenticular filter cells. A Pak® is assembled from varying numbers of filters cell. Each filter cell is comprised of a pair of Micro-Media, Alpha-Media or Micro-Clear depth filter media sheets where the edges of each pair is sealed by a patented process, using polypropylene. The assembled unit resembles a stack of double convex lenses, hence the term “lenticular.”

Paks are available in two construction formats:

- Polypropylene cores and flat end cap gaskets
- Polypropylene cores and double O-ring end cap gaskets.

These options allow ErtelAlsop to meet any process conditions where the Pak concept is the format of choice.

Standard removal ratings are applicable for the filtration of silicones, inks, coatings, syrups, orals, topicals, solvents and a host of other industrial products. To meet the demands of various applications, Pak filters can be supplied with options including water removal, pharmaceutical grade material, or polypropylene filter media.



Water removal is achieved using the ZetaDri-Pak® filter cartridge for oil based products and with the AquaKv-Pak® for transformer oil filtration in the electric utility industry. By providing a separate material to remove at least 84 ounces of water per 9-cell Pak, this concept provides dual phase separation, removing not only water but also particulate contaminant. The ZetaDri or AquaKv option is available with any grade of media.

Polypropylene filter media can be used in place of the standard cellulose-based filter media for products that are not cellulose compatible. Manufacturing the cartridge with the polypropylene core style results in an entirely polymeric filter element with your choice of Buna-N, Neoprene, Viton, Silicon, or Teflon Encapsulated gasket.



LENTICULAR CARTRIDGES

DISC-PAK®

The original lenticular cartridge, the Disc-Pak, is specially formulated for the precise filtration of liquids in the light to medium viscosity range. From applications such as lubricating oils, dielectric oils and coolants to syrups, beverages and perfumes, the Disc-Pak, with ErtelAlsop 100% cellulose Alpha-Media, may be used where particulate retention is the purpose of filtration.



ZETA-PAK®

The Zeta-Pak, the ErtelAlsop depth filter cartridge manufactured with ErtelAlsop Micro-Media provides relatively high flow rate, positive electrical charge and superior retention of ultrafine particles. The workhorse of ErtelAlsop Pak filter cartridges, the Zeta-Pak can be used in virtually any application, as it provides the greatest retention efficiencies of all media series.



ZETADRI-PAK®

Offering all the benefits of depth filtration plus the ability to capture free and emulsified water from your product, the ZetaDri-Pak allows for easy change out, low labor costs, optimized filtration area and high solids loading. Utilizing ErtelAlsop Micro-Media the 16-cell ZetaDri-Pak holds a minimum of 148 ounces of water. The need for change out can be determined by simply monitoring differential pressure.



BIO-PAK®

The Bio-Pak was the first U.S. manufactured double O-ring filter element. This cartridge is designed specifically for use in critical applications, providing the utmost assurance that no bypass will occur at cartridge sealing surfaces. From the downstream processing of biopharmaceuticals, plasma fractionation and bulk filtration of culture media, topicals and intermediates filtration, the Bio-Pak will provide the result your application requires.



AQUAKV-PAK®

The AquaKv-Pak was designed and developed specifically for the retention of water contamination in transformer and turbine lube oils along with the retention of particulate down to the sub-micronic level. This Pak concept combines the particulate retention capabilities of the Disc-Pak with an enhanced capacity for the retention of free and dissolved water. The AquaKv-Pak demonstrates mechanical shutoff when fully saturated with water. Particle retention does not effect water-holding capacity, which has been documented at up to 120 ounces per full 9-cell Pak. The use of AquaKv-Paks and an ErtelAlsop Pak housing can recondition dielectric fluids to meet or exceed ASTM and manufacturers standards.





LABORATORY FILTERS

Cylinder-type laboratory filters are available for small batch filtration and for use in laboratories to simulate the results of our full-scale filter equipment. Each unit is constructed of 316 stainless steel with a protected Pyrex® glass cylinder for filtration up to 1.05 kg/cm² (30 psig). For pressures up to 50 psig stainless steel cylinders are available and can be furnished with an optional heating or cooling jacket.

Compressed air or inert gas can be used to flow liquid through the filter media. A pressure gauge is included with each filter.

CYLINDER OPTIONS

- Stainless Steel Cylinder - model 10T
- Pyrex® Glass Cylinder - model 10TP
- Heating or Cooling Jacket - model 10TJ
- Single Sheet / No Reservoir - model 10TS



4TJ

MODEL 4

Diameter	1.85 in (47 mm)
Area	2.14 in ² (13.8 cm ²)
Volume	15.26 in ³ (250 ml)



10T

MODEL 10

Diameter	4.13 in (105 mm)
Area	12.17 in ² (78.5 cm ²)
Volume	79.33 in ³ (1300 ml)



21T

MODEL 21

Diameter	5.51 in (140 mm)
Area	21 in ² (136 cm ²)
Volume	228.84 in ³ (3750 ml)



43T

MODEL 43

Diameter	7.87 in (200 mm)
Area	43.01 in ² (278 cm ²)
Volume	488.19 in ³ (8000 ml)



MODEL 50P - AOK KIT

Diameter	3.46 in (88 mm)
Area	7.75 in ² (50 cm ²)
Volume	16 in ³ (270 ml)

MODEL 50P & THE AOK KIT

The ErtelAlsop Model 50P Laboratory Filter is constructed of polycarbonate and is appropriate for filterability and scale up studies. It is useful for traditional and body feed filtration studies with up to 50 cm² of filtration area and 270 ml of upstream void volume.

The Application Optimization Kit (AOK Kit) is the simple solution for all your 50P Laboratory Filter needs. The AOK kit is lightweight and easily transported. Included chamber heights of 25 mm, for traditional filtration studies, and 50 mm allow for different cake volumes. It is ideally suited for use with a peristaltic pump and liquids that require the use of additional filter aids, such as D.E.

SINGLE-USE CAPSULES



MicroCap Capsules offer the most flexible solution and the most consistent results for all of your batch processing needs.

MicroCap single-use capsules are a uniquely flexible line of disposable depth filter products designed to optimize scale-up and scale-down studies.

The MicroCap Capsule Suite with six different capsule sizes can meet your process volume requirements without requiring the pooling of multiple batches.

Lab-scale through clinical scale process volumes can be easily managed within the framework of cost-effective, efficient processing. Scale-up and scale-down studies can be efficiently managed through capsules sized and aligned to standard process volumes.

ADVANTAGES

- **Uniquely flexible** – options in capsule size, effective filter area and connection styles to suit your needs
- **Linear Scalability** – assurance of application and throughput from lab to production scale
- **Low hold-up volume** – reduced post-use rinsing volumes for product recovery
- **Completely disposable** – no cleaning or cleaning validation

ADVANCED PERFORMANCE

An extensive range of Depth Filter Medias has been developed by ErtelAlsop to meet the stringent requirements of the Biopharmaceutical industry and its unique filtration needs. Supported by comprehensive validation, ErtelAlsop's range of depth filter media enables reliable and efficient performance.

SCALABILITY

The versatility of MicroCap capsules enhances filtration efficiencies of laboratory, pilot and small-scale processes. The range of capsules and respective filter area enable both linear scalability in performance and as well as through the range of capsule sizes.

DEPTH FILTER MEDIA				
Media Series*	Media Grades	Format	Nominal Micron Rating	Filter Properties/Material
XL Series™	M053P	Single Layer	15 micron	Cellulose with High Purity Filter Aid
	M103P		10 micron	
	M403P		5 micron	
	M453P		2.5 micron	
	M503P		1 micron	
	M503TP		0.8 micron	
	M703P		0.45 micron	
	M853P		0.3 micron	
	M953P		0.2 micron	
MicroMedia®	M704P	Single Layer	0.45 micron	Cellulose with Filter Aid
	M854P		0.3 micron	
	M954P		0.2 micron	
MicroClear™	MC55	Single Layer	Steam Activated	Cellulose with Activated Carbon
	MC55CP		Chemical Activated	
	MC55GP		Steam Activated	
DXL Series*	B1E5	Double Layer	1 micron	Cellulose with High Purity Filter Aid
	B2E6		0.8 micron	
	B4E7		0.45 micron	
	B5E8		0.3 micron	
	B6E9		0.2 micron	
	B9E9		0.2 micron	

*Other depth filter media series available upon request.

MICROCAP

Part Number Structure

Media Grade
M053P (Example)

M053P

CAP

01

H

O

MicroCap Filter Type
CAP = Capsule

Configuration (Single Layer)

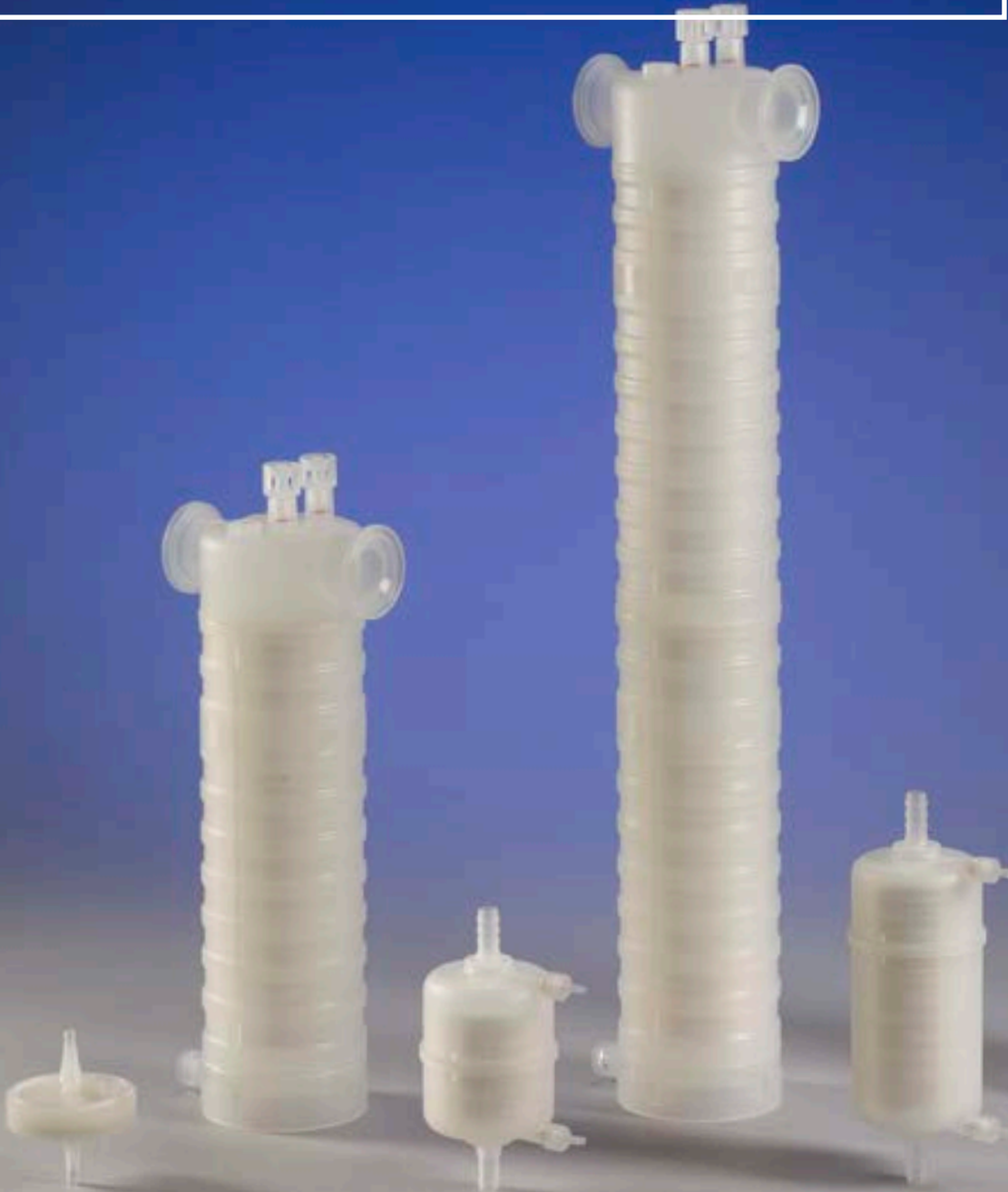
01 = 23 cm² Filtration Area
02 = 170 cm² Filtration Area
05 = 330 cm² Filtration Area
10 = 960 cm² Filtration Area
20 = 1920 cm² Filtration Area
30 = 2880 cm² Filtration Area

Vent

O = Luer Lock (MC1)
B = Vent Valve (MC2 & MC5)
C = 1/4" Bleed Valves
(MC10, MC20, MC30)

Inlet/Outlet Fitting

H = Stepped Hose Barb (MC1)
3H = 3/8" Hose Barb (MC2 & MC5)
MT = 1/2" Sanitary Clamp (MC2 & MC5)
TC = 1 1/2" Tri-Clamp (MC10, MC20, MC30)



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BROCHURE
TODAY!

BIOCLEAN PLATES

BIOCLEAN™ FILTER PLATES

Originally designed to satisfy the stringent validation requirements of the biotech market, the BioClean™ Filter Plate Assembly has become an indispensable part of plate and frame filtration industry. BioClean plates reduce cleanup times and labor costs with the ability to reach every liquid contact surface.

The assembly consists of a frame and two screens. The screens are designed with a series of protrusions, or dimples, on opposite screens, which may make contact when the filter press is in operation.

These dimples maintain the position of the screens without the need for welds or mechanical interconnections, and prevent the plates from restricting flow while under pressure during filtration.

Now standard on all ErtelAlsop plate and frame filters, this patented innovation is the only design that allows for cleanability of all liquid contact surfaces.

BIOCLEAN FILTER PLATES:

- 4 in. x 4 in. (10 cm x 10 cm)
- 8 in. x 8 in. (20 cm x 20 cm)
- 12 in. x 12 in. (30 cm x 30 cm)
- 16 in. x 16 in. (40 cm x 40 cm)
- 24 in. x 24 in. (60 cm x 60 cm)
- 36 in. x 36 in. (91 cm x 91 cm)



PLATE & FRAME

THE PLATE AND FRAME FILTER is the standard in basic process depth filtration. Plate and frame filters provide the lowest cost of filtration per unit of fluid processed. ErtelAlsop offers application-specific filter designs with unique features for flow rates ranging from large volumes to pilot plant and laboratory scale.

Available cake space is an important feature to consider in plate and frame filtration. Larger cake accumulation results in longer filtration cycles, and more importantly, the ability to achieve efficient washing of the cake to recover valuable product for further processing.

ErtelAlsop plate and frame filter presses are designed to accommodate a wide range of components, including sludge inlet rings for cake accumulation, dividing heads for multiple step (one-pass) filtration, sanitary fittings, special piping and gauges, and pumps and motors to meet a wide range of applications. ErtelAlsop also offers weld-free plate and frame construction for those situations where surface integrity is essential.

In addition to proprietary filter media, ErtelAlsop plate and frame units can accept a variety of other media including paper, felt, woven fabrics and cloth.

DIVIDING & BLANKING HEADS

Dividing heads are used for multi-step filtration within one filter unit and can be placed at any location with the filter press to divide it into multiple sections. These sections are in series and actually function as two or more separate filters within a single carriage. Pad retention grades can be varied-coarse in the first section and finer in second and succeeding sections to provide multiple filtration stages in a single pass. Dividing heads may be used in most ErtelAlsop plate and frame filter presses.

A blanking head is placed between a plate and frame at any location within the filter unit. It allows process liquid to flow only to the plates and frames placed on the active filtration side. All plates and frames positioned behind the blanking head are inactive-i.e. they are no longer exposed to process liquid. No filter media need to be installed in the inactive section thus reducing filter media cost and cleaning time.

The blanking head extends the versatility of the plate and frame by allowing modification of the useable filtration area without having to remove or add plates and frames. It also eliminates concerns about the length of the closing device.



DIAMOND SERIES

DIAMOND SERIES FILTERS

The most recent invention in a company history full of innovations, the ErtelAlsop Diamond Series (patent pending) filter press combines the latest weld-free construction technology with the most revolutionary plate and frame design concept in recent history. The Diamond Series provides complete drainage and venting while maintaining the superior internally ported design.

Process liquids can be extremely valuable and filter hold-up volumes costly. Upon completion of the production cycle, current plate and frame filter presses can require that up to 90% of the liquid remaining in the filter be reprocessed or discarded. The Diamond Series eliminates this problem. Maximum yield of viable liquid is now possible.

Currently available in 4 inch (10 cm), 8 inch (20 cm), and 12 inch (31 cm) designs, this filter provides the ultimate in flexibility. Eyelet gaskets commonly used in externally ported filter presses, present concerns with regard to cross-contamination and chemical compatibility, as well as limitations on the thickness of filter media used. The Diamond Series filter press eliminates the need for gaskets entirely.

In conjunction with the patented ErtelAlsop BioClean plate technology, a Diamond Series filter press allows for effective cleaning and sterilization of every liquid contact surface. Our standard Validation Package, along with optional 20 Ra surface finish facilitates ease of validation.



MODEL	4S & 4D		8S & 8D		12D	
Standard Height	9.84 in	(0.25 m)	13.78 in	(0.35 m)	39.39 in	(1 m)
Standard Width	7.87 in	(0.20 m)	11.75 in	(0.3 m)	17.72 in	(0.45 m)
Range of Length	9.8 - 19.7 in	(0.25 - 0.5 m)	15.8 - 49.2 in	(0.4 - 1.25 m)	29.5 - 78.7 in	(0.75 - 2.0 m)
Plate Dimension	4 in square	(103 mm)	8 in square	(203 mm)	12 in square	(305 mm)
Ports	4 internal		4 internal		4 internal	
Area/Filter Sheet	0.084 ft ²	(0.0078 m ²)	0.31 ft ²	(0.029 m ²)	0.82 ft ²	(0.076 m ²)
Cake Vol. - 12.5 mm inlet	0.017 gal	(0.067 l)	0.07 gal	(0.25 l)	0.20 gal	(0.74 l)
Cake Vol. - 25 mm inlet	0.048 gal	(0.182 l)	0.18 gal	(0.68 l)	0.38 gal	(1.45 l)
Cake Vol. - 37.5 mm inlet	0.072 gal	(0.273 l)	0.27 gal	(1.02 l)	0.57 gal	(2.17 l)
Cake Vol. - 50 mm inlet	0.096 gal	(0.364 l)	0.36 gal	(1.36 l)	0.76 gal	(2.89 l)
Batch Size	0.34 oz - 2.6 gal (10 ml - 10 l)		Up to 26.4 gal (100 l)		Up to 2,642 gal (10,000 l)	
Flow Rate	Up to 1 gpm (3.7 lpm)		Up to 20 gpm (74 lpm)		Up to 20 gpm (74 lpm)	

ACCUSCALE FILTERS

AccuScale filters are the perfect tool for R&D, pilot, or small batch processing. Designed for laboratory, new product and process development as well as small volume production. Pad change-over can be accomplished easily and in a minimum of time. Even more versatility results from the use of dividing heads to provide double or even triple serial filtration in a single pass.

AccuScale filters are fitted with 4 inch or 8 inch (10 cm or 20 cm) filter pads and provide up to 6 square feet (.55 m²) of installed filter area. The units can be autoclaved and standard construction is 316 stainless steel finished to a high polish.

As with all ErtelAlsop plate and frame filter presses, the 4S, 4D, 8S, and 8D have the same component flexibility as other models- accepts various thickness filter media, is internally ported eliminating the need for gaskets, and eliminates concerns about compatibility and cross-contamination.

MODEL 4S & 8S

These 4 inch (10 cm) and 8 inch (20 cm) square plate and frame filters are the most economical models ErtelAlsop manufactures. Sized for bench top or cart mounting, these filters are able to accept up to twenty (20) filter pads, they are designed to work in a wide range of high efficiency, ultra-fine filtration applications, and have excellent scale-up capabilities.

MODEL 4D & 8D

The Diamond Series line offers one of the most revolutionary design innovations in the history of plate and frame filtration. By literally turning plate and frame filtration on its ear, ErtelAlsop has created a filter that provides complete drainage and venting while maintaining the superior internally ported design the company is famous for.

These 8 inch square plate and frame filters are one of the most economical models ErtelAlsop manufactures. Sized for bench stand use and able to accept up to twenty (20) filter pads, they are designed to work in a wide range of high efficiency, ultra-fine filtration applications.



PLATE & FRAME

VAPOR-MASTER FILTERS

ErtelAlsop Vapor-Master enclosed plate and frame filters permit filtration of noxious fluids in a completely sealed, vapor-tight environment for both venting and the safe disposal or recovery of filtrate or cake residue. This patented design eliminates exposure of workers to toxic vapors from solvents used in cake washing during the extraction process. Filtration units can be custom designed and manufactured to specific requirements such as provision for modified clean-in-place (CIP). Please contact ErtelAlsop for more details.

The Vapor-Master hood can be closed manually or with an optional joystick system. In either case, dual stainless steel Teflon pistons provide smooth operation and maintain accurate hood alignment.

The self-aligning stainless steel cover has a precision machined sealing rim and a tight fitting sealing gasket.

The entire perimeter is covered by an ErtelAlsop-designed Viton seal. Other gasketing materials can be supplied. Call ErtelAlsop for details. For applications requiring cake recovery from the Vapor-Master Plate and Frame Filter Press, a Mobile Cake Recovery Module is available. This portable cake pan seals in place to the bottom of the Vapor-Master enclosure with a locking cam during the

filtration run. At the end of the cycle, when the filter cake is removed, the module can be released from the bottom of the unit and moved away for further processing.



Bev EXPRESS™ MULTI-PLATE SHEET FILTER



BEV EXPRESS

This superior quality, low cost, multi-plate sheet filter consists of a 304 stainless steel frame mounted on casters, stainless steel drip tray, stainless steel valves, inlet and outlet sight glass, and 40 x 40 cm food-grade Noryl plastic plates which are steam sterilizable. A dividing head is also an option, which allows for 2-stage (double) filtration. Double filtration allows for your wine to pass through a coarse filter media, and then also through a polishing filter media while passing through the press only once. Not only does this save you time, but it also reduces the amount of product agitation and handling.

FEATURES

- Stainless steel fixed plate
- Stainless steel movable head plate
- Food-grade NORYL plates
- Stainless steel connections & valves

LETRE 604

The Letre 604 plate and frame filter is the industry standard for critical depth filtration. Letre 604 filters are fitted with four ports, which can be configured for thorough washing. The term “thorough washing” refers to the introduction of a solvent behind the media in every other plate. The filtrate outlets on these plates are closed to the solvent, which must emerge from alternate plate outlets. This method is possible only in a filter press and is more efficient than “simple washing”, where the solvent is passed through the same channel taken by the process liquid. As with all ErtelAlsop internally ported filter assemblies, gaskets and washers are not required. In applications where sanitary designs are necessary, Letre 604 filters can be provided with BioClean plates. This filter is most often used in applications such as Plasma Fractionation, Distilled Beverages, Cosmetics, Flavors, APIs, LVPs, Personal Care Products, and Soft Drinks.

Letre 604 units may be used with carbon and/or filter aid, or with pre-treated filter aid to accommodate a wide range of processing applications. Selection of inlet frame thickness will determine the volume of cake that can be accumulated and washed for product recovery.

These large volume, 24 inch square (60 cm) plate and frame filters are designed to accept up to 100 filter pads, providing a filtration area of up to 319 square feet (29.64 m²) of installed filter area. They are available with stainless steel or polypropylene wetted surfaces.



LETRE 800 AND 900

Letre 900 and 800 filters are supplied with pneumatic/hydraulic closures as standard to provide simple joystick operation. An automatic pressure setting maintains balanced pressure on the filter pads throughout the entire production run. These units can accommodate up to 120 filter pads, providing filtration area up to 930 square feet (86.4 m²). Selection of inlet frame thickness will determine the volume of cake that can be accumulated and washed for product recovery.

SPECIFICATIONS	LETRE 604		LETRE 800		LETRE 910	
Standard Height	51.18 in	(1.3 m)	45.5 in	(1.16 m)	54.0 in	(1.37 m)
Standard Width	29.92 in	(0.76 m)	32.75 in	(0.83 m)	40.0 in	(1.02 m)
Range of Length	51.2 - 240.2 in	(1.3 - 6.1 m)	100.0 - 240.0 in	(2.54 - 6.1 m)	100.0 - 240.0 in	(2.54 - 6.1 m)
Plate Dimension	24 in square	(610 mm)	31.5 in square	(800 mm)	36 in square	(914.5 mm)
Ports	4 internal		4 internal		4 internal	
Area/Filter Sheet	3.6 ft ²	(0.33 m ²)	6.46 ft ²	(0.60 m ²)	7.26 ft ²	(0.67 m ²)
Cake Vol. - 12.5 mm inlet	0.99 gal	(3.76 l)	2.0 gal	(07.63 l)	2.41 gal	(09.10 l)
Cake Vol. - 25 mm inlet	1.99 gal	(7.53 l)	4.0 gal	(15.25 l)	4.81 gal	(18.20 l)
Cake Vol. - 37.5 mm inlet	2.98 gal	(11.29 l)	6.0 gal	(22.88 l)	7.22 gal	(48.53 l)
Cake Vol. - 50 mm inlet	3.98 gal	(15.06 l)	8.0 gal	(30.50 l)	9.62 gal	(36.40 l)
Batch Size	Up to 13,208 gal (50,000 l)		Up to 13,208 gal (50,000 l)		Up to 13,208 gal (50,000 l)	
Flow Rate	Up to 50 gpm (190 lpm)		Up to 50 gpm (190 lpm)		Up to 50 gpm (190 lpm)	

PLATE & FRAME

EFS FILTERS

These economical 12 inch (31 cm) diameter plate and frame filters are designed for a wide range of high efficiency, ultra-fine filtration applications. They accept up to 40 filter pads and provide up to 29.2 ft² (2.71 m²) of installed filter area.

Model EFS is cart-mounted and is available with a 50 pad capacity expansion option. Model EFS-B is mounted on a floor-level dolly and has a filter pad capacity of up to 12 pads.

Model EFS and EFS-B filters have the same component flexibility as other ErtelAlsop plate and frame filter presses. This includes sludge inlet rings for cake accumulation, dividing heads for multiple-step/one-pass filtration, sanitary fittings, special piping, gauges, pumps and motors to meet a wide range of applications.

As with all ErtelAlsop plate and frame filters, the EFS and EFS-B are internally ported, eliminating the need for gaskets. The precise alignment of the frames seal the filter media, expelling concerns about compatibility and cross-contamination.

Common applications where an EFS Series filter might be used include, Small Batch Cosmetics, Cough Syrups, Flavors, Fragrances, and Small Volume Parenterals

EUS FILTERS

The EUS is the most versatile model in the ErtelAlsop family of plate and frame filter presses. With filtration area available from 2.8 ft² to 142 ft², EUS filters can be used in virtually any application. The 16 inch 40 (cm) square dimension provides sufficient filtration area while maintaining a manageable weight of the plates and frames to allow for easy movement. The EUS comes standard with the BioClean™ Filter Plate Assembly and is available with optional blanking head, dividing head, hydraulic closure, Vapor-Master™ enclosure, polypropylene plates and frames, or thorough wash capabilities.

The EUS is extremely effective for pilot plant use. By taking advantage of its flexibility, it is the ultimate tool for scaling up processes for full-scale production.

Typical applications for the EUS include Cough Syrups, Flavors, Fragrances, Cosmetics, Animal Sera, Wine, Beer, Distilled Beverages, Diagnostics, and Small Batch Specialty Chemicals.



SEALED DISC FILTERS

The ErtelAlsop Sealed Disc Filter is a cross between a Pak® lenticular cartridge housing and a plate and frame filter, providing the best of both filtration options. The totally enclosed, leak-proof design utilizes low cost media and can accommodate all temperature ranges. With a small footprint and available cake frames, this alternative is ideal for applications such as Plating, Alcoholic Beverages, Small Volume Cosmetics, Flavorings, and Food and Beverages. Models from 6 inch to 24 inch round can be supplied with pump and portable base or as a Combination Processing Unit, including batch system filter, pump, tank and mixer.



POLYPROPYLENE PLATE AND FRAME FILTER PRESSES

All ErtelAlsop filter units are available with lightweight, economical polypropylene plates and frames. Polypropylene is especially suited for applications where stainless steel or carbon steel are not acceptable for reasons of chemical compatibility or where high polish and sanitary design are not required. Polypropylene plates and frames are available with stainless steel or painted carbon steel carriages.

SPECIFICATIONS	EFS		EUS	
Standard Height	39.39 in	(1 m)	39.39 in	(1 m)
Standard Width	17.72 in	(0.45 m)	23.62 in	(0.6 m)
Range of Length	29.5 - 78.7 in	(0.75 - 2.0 m)	39.4 - 157.5 in	(1.0 - 4.0 m)
Plate Dimension	12 in square	(305 mm)	16 in square	(406 mm)
Ports	4 internal		4 internal	
Area/Filter Sheet	0.82 ft ²	(0.076 m ²)	1.42 ft ²	(0.132 m ²)
Cake Vol. - 12.5 mm inlet	0.20 gal	(0.74 l)	0.40 gal	(1.52 l)
Cake Vol. - 25 mm inlet	0.38 gal	(1.45 l)	0.90 gal	(3.39 l)
Cake Vol. - 37.5 mm inlet	0.57 gal	(2.17 l)	1.38 gal	(5.21 l)
Cake Vol. - 50 mm inlet	0.76 gal	(2.89 l)	1.92 gal	(7.27 l)
Batch Size	Up to 6,604 gal (25,000 l)		Up to 6,604 gal (25,000 l)	
Flow Rate	Up to 50 gpm (190 lpm)		Up to 50 gpm (190 lpm)	

PAK FILTER HOUSINGS

PAK LENTICULAR CARTRIDGE FILTER HOUSINGS

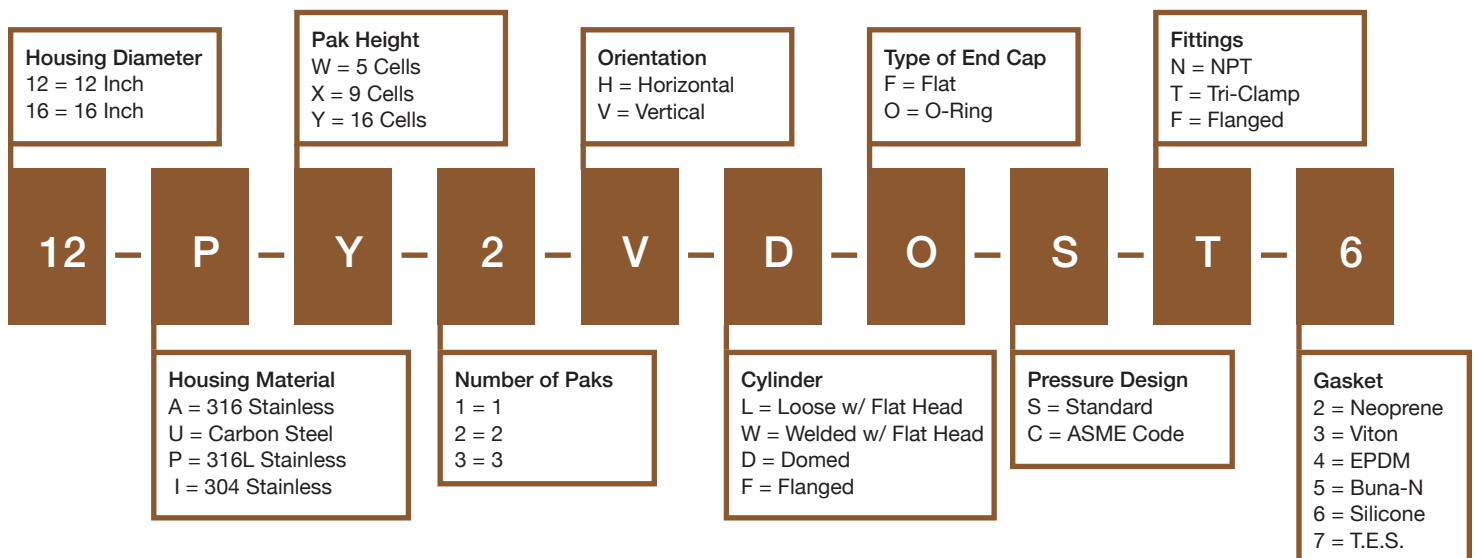
Lenticular stacked disc filter housings make excellent replacements for plate and frame filter presses where cake filtration is not required and an enclosed system is desired. An ErtelAlsop Pak Filter Housing provides an easy to clean, vapor-contained enclosed system, which allows for quick change out and no leakage.

Housings are available in various materials of construction, including carbon steel, 304, 316, or 316L stainless steel, and in either vertical or horizontal orientation.

Designs include the sanitary Pharma-Pak housing which helps ensure the integrity of your pharmaceutical or biotech application by providing a highly polished filter housing with sanitary fittings, vent connection and no internal threads. This model is provided in 316L stainless steel as standard and allows for easy cleaning after complete disassembly. The typical housing can hold up to four 12 inch or 16 inch diameter Pak cartridges in a vertical configuration. For additional integrity assurance, ErtelAlsop Bio-Pak double O-ring cartridges can be supplied for use within this housing.

The standard industrial housing, the Zeta-Pak Lenticular Cartridge Housing, is designed for use in applications where sanitary conditions are not required. This filter is available in a variety of materials of construction. Flow rates of up to 375 liters per minute per housing are achievable. Housings may be mounted in series or parallel on a single framework to allow for higher flowrates and/or throughput. Other options include gasketed head and external tightening handle or flanged head with internal tightening handle with the option for ASME code.

Part Number Structure





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PAK FILTER HOUSINGS

ELECTRIC UTILITY FILTER HOUSING

The 12UF Pak Lenticular Filter Housing Series was designed specifically for the electric utility industry. Used in the filtration of steam turbine, voltage regulator and circuit breaker oils, these units can be custom fabricated to fit your specific application. Designs include Handtruck Units, Portable Utility Carts and Over-the-Road Trailers. These units can be fabricated of Carbon Steel or Stainless Steel.

Versatility and performance; Coupled with the Ertel/Alsop Pak® concept of liquid filtration, you can obtain filtration of insulating oils which meet original manufacturers specifications. Flow rates for filter units range from 15 GPM to 100 GPM.

Look for the Aqua Kv Pak®, Zeta Dri Pak® and Disc Pak® for maintaining your insulating oil to your Kv specification.



HORIZONTAL FILTER HOUSINGS

For specific applications where space is limited, the industrial design housing can be supplied in a unique horizontal design. This configuration makes it easy for one person to operate the filter from loading to unloading. The flanged head can be provided with a hinge and swing tightening bolts to further simplify operation. This housing can also be provided in a variety of materials of construction and to ASME code.

SPECIFICATIONS	12PY1	12PY2	12PY3	12PY4
Material of Construction	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Gasket Material	EPDM	EPDM	EPDM	EPDM
Standard Height	38.6 in (981 mm)	49.5 in (1257 mm)	60.7 in (1542 mm)	71.6 in (1819 mm)
Standard Width - Base	19.1 in (485 mm)	19.1 in (485 mm)	19.1 in (485 mm)	19.1 in (485 mm)
Standard Width - Dome	12.75 in (324 mm)	12.75 in (324 mm)	12.75 in (324 mm)	12.75 in (324 mm)
Weight - Empty	75 lbs (34.1 kg)	93 lbs (42.0 kg)	114 lbs (51.8 kg)	132 lbs (59.7 kg)
Volume - Empty	1809 in ³ (29.7 l)	3185 in ³ (29.7 l)	4569 in ³ (74.9 l)	5946 in ³ (97.5 l)
Volume w/Pak Cartridge	1222 in ³ (20 l)	2025 in ³ (33.2 l)	2837 in ³ (46.5 l)	3641 in ³ (59.7 l)
Media Diameter	12 inch (305 mm)	12 inch (305 mm)	12 inch (305 mm)	12 inch (305 mm)
Number of Cells per Pak	16	16	16	16
Filter Area	18.5 ft ² (1.72 m ²)	37 ft ² (3.44 m ²)	55.5 ft ² (5.16 m ²)	64 ft ² (5.95 m ²)
Average Flow Rate	1 gpm/ft ² (3.79 l/ m ²)	1 gpm/ft ² (3.79 l/ m ²)	1 gpm/ft ² (3.79 l/ m ²)	1 gpm/ft ² (3.79 l/ m ²)

HORIZONTAL PLATE FILTER CONVERSION KIT

In keeping with its history of innovation, ErtelAlsop has designed a Conversion Kit for users of Horizontal Plate Filters, which transforms these units into ErtelAlsop Pak® Filter Housings. Upon conversion, the kit provides users who were utilizing filter paper and loose filter aid with a cleaner, more cost-efficient method of filtration. Advantages of converting include:

* Filtration with the ErtelAlsop Pak® concept is easier and faster.

* Pak® cartridges provide a greater range of filtration over the use of paper and loose filter aid.

* The ErtelAlsop unit decreases labor costs and clean-up times, as there is no loose filter aid to dispose of or filter plates to sanitize.

* Once converted, change-out time after system drainage is reduced from over 90 minutes to 10-15 minutes.

Contact ErtelAlsop or your authorized distributor for details on how you can make the change.



SPECIFICATIONS	16PY1	16PY2	16PY3	16PY4
Material of Construction	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Gasket Material	EPDM	EPDM	EPDM	EPDM
Standard Height*	38.6 in (981 mm)	49.5 in (1257 mm)	60.7 in (1542 mm)	71.6 in (1819 mm)
Standard Width - Base	23.1 in (587 mm)	23.1 in (587 mm)	23.1 in (587 mm)	23.1 in (587 mm)
Standard Width - Dome	16.75 in (425 mm)	16.75 in (425 mm)	16.75 in (425 mm)	16.75 in (425 mm)
Weight - Empty	122 lbs (55.3 kg)	145 lbs (65.7 kg)	174 lbs (78.8 kg)	197 lbs (89.2 kg)
Volume - Empty	3166 in ³ (51.9 l)	5566 in ³ (91.3 l)	7977 in ³ (130.8 l)	10,377 in ³ (170.2 l)
Volume w/Pak Cartridge	2032 in ³ (33.3 l)	3312 in ³ (54.3 l)	4603 in ³ (75.5 l)	5883 in ³ (96.5 l)
Media Diameter	16 inch (406 mm)	16 inch (406 mm)	16 inch (406 mm)	16 inch (406 mm)
Number of Cells per Pak	16	16	16	16
Filter Area	39.5 ft ² (1.72 m ²)	79 ft ² (3.44 m ²)	118.5 ft ² (5.16 m ²)	158 ft ² (5.95 m ²)
Average Flow Rate	1 gpm/ft ² (3.79 l/ m ²)	1 gpm/ft ² (3.79 l/ m ²)	1 gpm/ft ² (3.79 l/ m ²)	1 gpm/ft ² (3.79 l/ m ²)

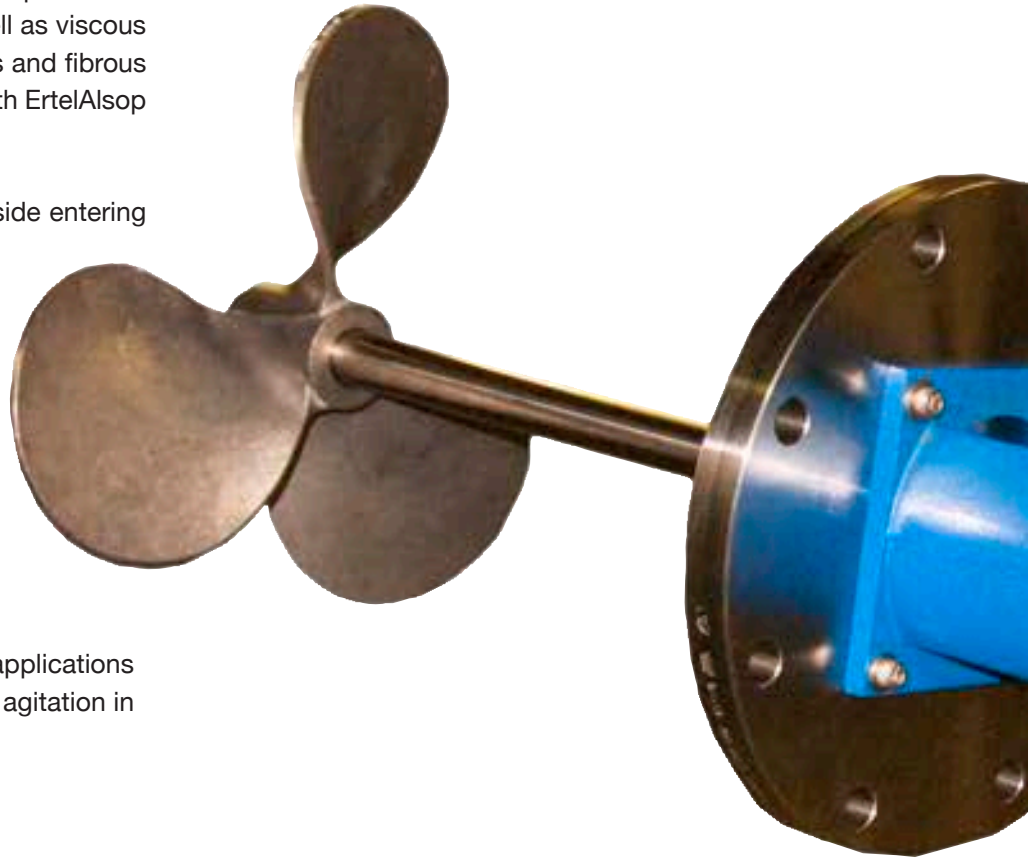
* Based on 16 cell Pak Cartridges. Cartridges can be constructed with 5-16 cells per Pak Cartridge depending on filtration area needed.

MIXERS

ErtelAlsop mixers feature a modular design agitator based on over 80 years experience in liquid blending and processing. Our exclusive construction allows interchangeability of components such as electric and air driven motors, gear trains, mounting brackets, saddle plates, shafts and propellers. It provides our users with an almost infinite choice of final design to match the mixer to the application at the lowest possible cost.

Sizes range from ¼ to 3 horsepower and meet requirements for blending light liquids below 500 CPS as well as viscous fluids up to 10,000 CPS; many powders, pulps and fibrous materials can also be blended economically with ErtelAlsop modular mixers.

Two standard types – vertically mounted and side entering mixers meet most requirements.



DIRECT DRIVE

DD mixers are specified for low viscosity applications usually well under 500 CPS, also used for mild agitation in tanks up to 3000 gallons maximum.

GEAR DRIVEN

GD mixers are specified for medium to high viscosity up to 10,000 CPS and for tanks up to 5000 gallons. GD mixers are better suited to medium and vigorous agitation, as the pumping rate is much higher compared with the DD mixers.

STABILIZING RING

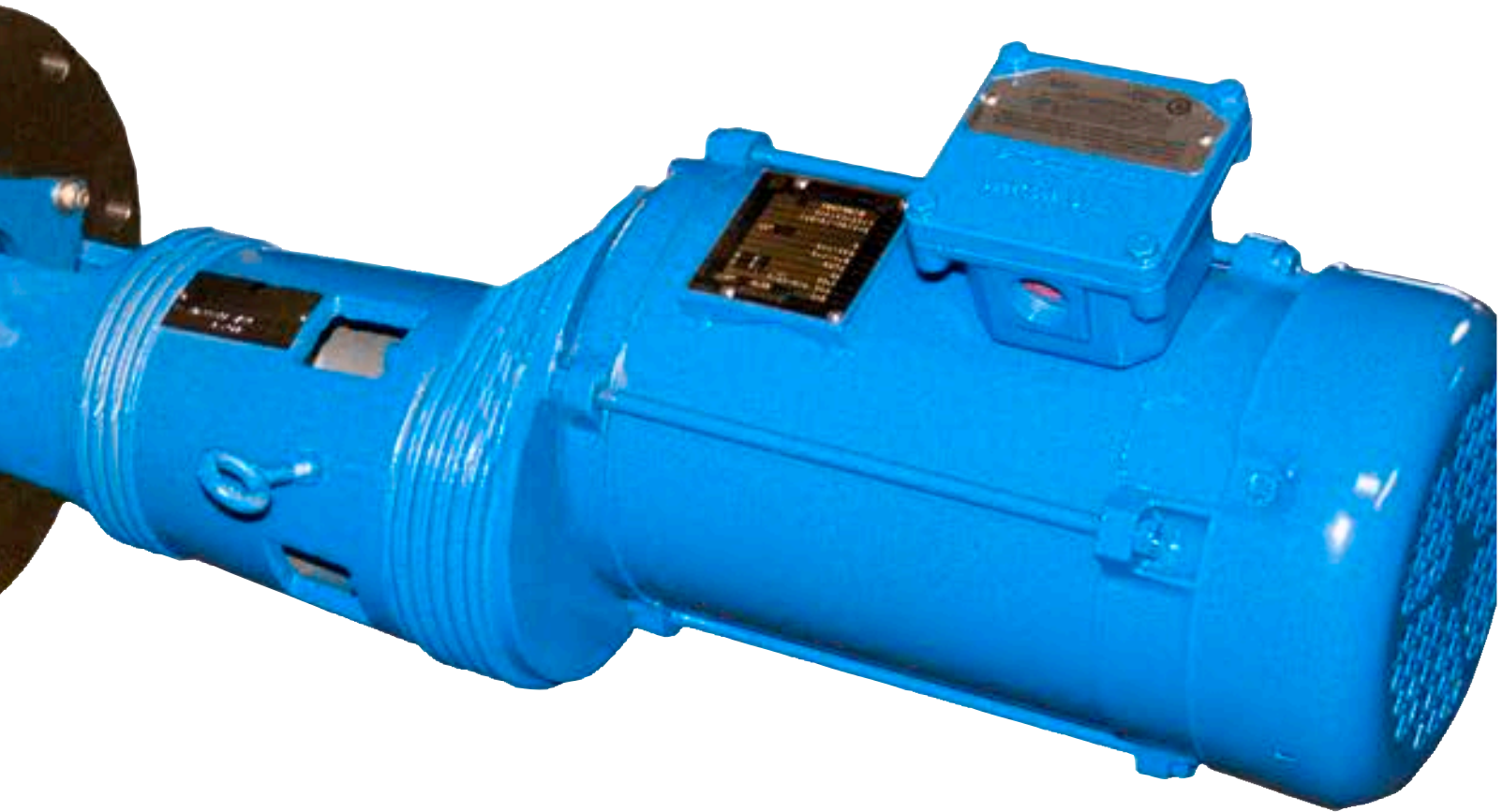
Stabilizing Rings are available for any fixed or portable top entering mixer which requires a shaft longer than standard, and or operates at variable speed. The T-316 stainless steel ring is welded to the blade and balanced to prevent oscillation.

SIDE ENTERING

- Well suited for use in large tanks
- Applications where headroom is lacking
- For use in tanks too deep for top entering units
- Used for blending, heat transfer and dispersion of suspended solids
- For fluids with viscosities to 10,000 CPS

TURBINE

- Heavy duty industrial components
- Low profile cast iron gear drive with multiple speed ratios
- Highest pumping rates in the industry
- Solid shafting in a wide range of metals
- Extended bearing and gear life for 100,000 hrs.
- Optional impeller configurations available.



PORTABLE & FIXED MOUNT

- Efficient, totally enclosed or explosion proof motors
- Special options available
- Industry standard motors
- Heavy cast aluminum housing and gear case
- Helical gearing, NEMA rating 10
- Sealed grease lubricated gear head
- Oversized, permanently sealed and lubricated ball bearings
- Broad selection of Direct and Gear driven models
- Economy Models

EA SERIES

Our EA-Series Filter Presses provide a simple & reliable method to dewater solids into cakes of 25 - 60% total concentration. This provides clearer filtrate solutions than systems removing only free water.

The EA-Series line is available in different sizes for solids handling ranging from press capacities of 1 ft³ all the way to 300 ft³. These heavy-duty presses are well suited for applications which require leak-free processing.

STANDARD FEATURES

- Caulk & Gasketed Recessed Polypropylene Plates
- 32mm Cake Thickness
- 4 Corner Discharge Porting
- 304 Stainless Steel Side Bar Wear Strips
- Schedule 80 PVC Head Connections
- Manual Hydraulic Closure System
- Full Six Year Framework Warranty

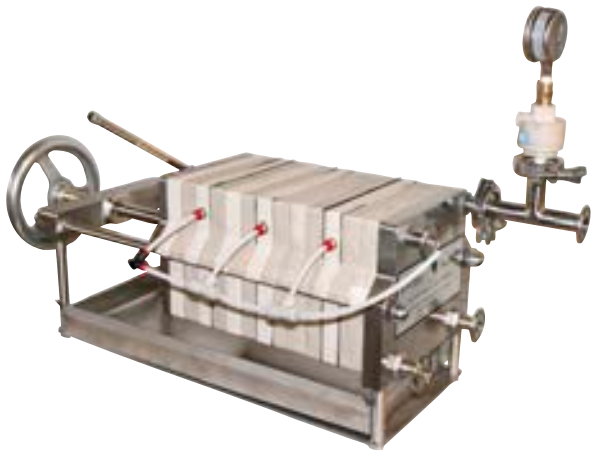
OPTIONAL FEATURES (Partial List)

- Membrane/Squeeze Plates
- Cake Cart or Cake Chute
- Plate Shifter
- Bombay Doors
- Automatic Air/Oil Hydraulic Closure System
- Cloth Washer



**REQUEST A
COPY OF OUR
EA SERIES
BROCHURE
TODAY!**

EA 102 AND 203



	EA 102	EA 203
Std. Height:	9.8"/250mm	13.8"/350mm
Std. Width:	8"/200mm	12"/300mm
Range of Length:	9.5-20"/250mm-500mm	15.75-49"/400-1,250mm
Capacity:	0.10 ft ³ -0.25 ft ³	0.2 ft ³ -0.35 ft ³
Std. Area:	0.125 ft ²	0.658 ft ²
Plate Dimension:	4"/102mm	8"/203mm
Discharge Ports:	3 Corner	3 Corner
Std. Vol./Chamber:	0.0015 ft ³	0.033 ft ³

EA 203 - OPTIONS SHOWN:

203mm PP Membrane Squeeze Plates, SS Skeleton and Drip Tray, Hand Hydraulic Pump Closure, Tri-Clover (Sanitary) Head Connections

EA 470 AND 630



	EA 470	EA 630
Std. Height:	44.5"/1,130mm	50.25"/1,276mm
Std. Width:	22.5"/572mm	30"/762mm
Range of Length:	50-120"/1,270-3,048mm	70-260"/1,778-6,604mm
Capacity:	0.8 ft ³ -2.9 ft ³	2.9 ft ³ -16.5 ft ³
Std. Area:	3.4 ft ²	6.37 ft ²
Plate Dimension:	18.5"/470mm	24.8"/630mm
Discharge Ports:	4 Corner	4 Corner
Std. Vol./Chamber:	0.15 ft ³	0.29 ft ³

EA 630 - OPTIONS SHOWN:

630mm 316 SS Plates, 304 SS Skeleton, Safety Light Curtain, SS Self-Dumping Cake Carts with Fork Lift Tubes, Air/Oil Hydraulic Power Unit, SS Enclosure, 304 SS Removable Expansion Spacer

FILTER PRESSES

FILTER CLOTH

At ErtelAlsop the type of filter media chosen is based on your specific operating conditions, the performance required by the filtering media, and criteria given to us by you and/or by sample processing we do in our lab of your slurry.

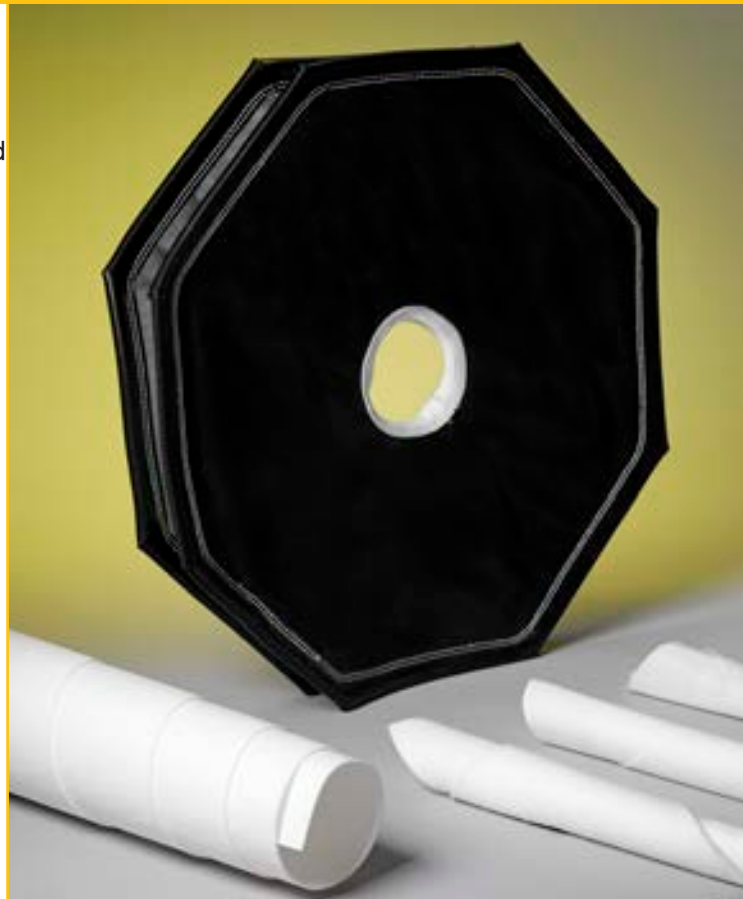
Filter cloth comes in a variety of different materials including:

- Polypropylene
- Polyester
- Nylon
- Teflon
- Cotton

Filter media is constructed from woven and nonwoven materials:

- Monofilament
- Multifilament
- Spun staple yarns
- Needle-punched felts
- Spun-bonded
- Laminates

Should your process change, we recommend your media type be re-evaluated for optimum performance.

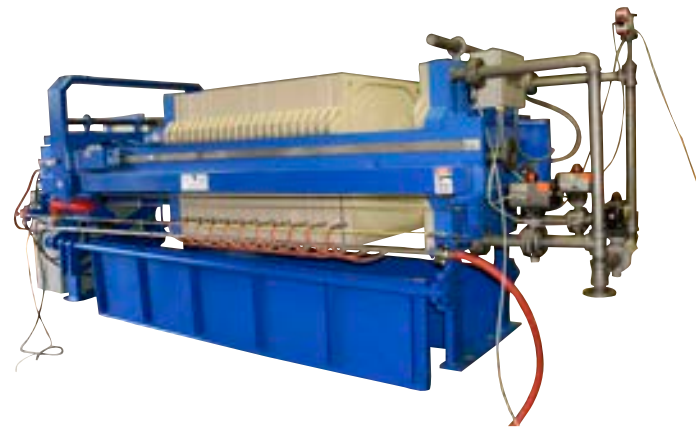


EA 800 AND 1000

	EA 800	EA 1000
Std. Height:	58"/1,473mm	66.5"/1,689mm
Std. Width:	43.5"/1,105mm	51.5"/1,308mm
Range of Length:	103-270"/2,616-6,858mm	172-320"/4,369-8,128mm
Capacity:	12.5 ft ³ -29.9 ft ³	29.9 ft ³ -56.8 ft ³
Std. Area:	10.65 ft ²	17.27 ft ²
Plate Dimension:	31.5"/800mm	39.4"/1,000mm
Discharge Ports:	4 Corner	4 Corner
Std. Vol./Chamber:	0.50 ft ³	0.83 ft ³

EA 1000 - OPTIONS SHOWN:

1000mm PP Membrane Squeeze Plates, C1018 CS Skeleton, Safety Lanyard, Automatic Actuation and Controller, Electric Hydraulic Closure, Automatic CS Plate Shifter, CS Bombay Drip Tray, 316 SS Removable Expansion Spacer



EA 1200 AND 1500

	EA 1200	EA 1500
Std. Height:	66"/1,676mm	78"/1,981mm
Std. Width:	64"/1,626mm	76"/1,930mm
Range of Length:	200-376"/5,080-9,550mm	240-495"/6,096-12,573mm
Capacity:	38.3 ft ³ -92.8 ft ³	87.6 ft ³ -270.6 ft ³
Std. Area:	25.2 ft ²	38.1 ft ²
Plate Dimension:	47.2"/1,200mm	59.05"/1,500mm
Discharge Ports:	4 Corner	4 Corner
Std. Vol./Chamber:	1.16 ft ³	1.77 ft ³

EA 1200 - OPTIONS SHOWN:

1200mm PP Plates, CS Skeleton, 304 SS Lined CS Semi-Automatic Bombay Drip Tray, Safety Lanyard, Air/Oil Hydraulic Power Unit with Automatic Controller, Semi-Automatic CS Plate Shifter



Since 1920, the world's most respected brands have used ErtelAlsop to help them get their projects done.

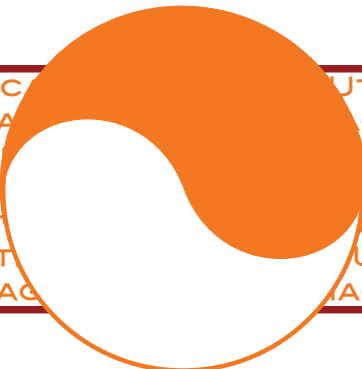
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- ASAHI
- AVON COSMETICS
- BACARDI
- BECTON DICKINSON
- COCA COLA
- COTT BEVERAGES
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- DUKE ENERGY
- ESTEE LAUDER
- FOSTER'S WINE
- GIVAUDAN
- HALIBURTON
- IFF
- JACOB'S CREEK WINE
- JIM BEAM
- JOHNSON & JOHNSON
- LA GUITARRA MINERA
- MERCK
- OLIN
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