

3M Purification

ZetaPlus™ Filter Sheets



Cellulose Based Filter Media for:

- Microbial Stability
- Product Clarity
- Consistent Reproducible Filtration

Applications

Beverages	Wine, Beer, Spirits and Fruit Juices
Pharmaceuticals	Blood Fractions, Vaccines, Antibiotics and IV Solutions
Food	Vinegar, Sugar, Syrups and Edible Oils
Chemicals	Disinfectants, Solvents, Paints, Resins and General Chemicals
Cosmetics	Perfumes, Lotions, Shampoos, Oils, Deodorants and Colognes
Oils	Transformer Oils, Diesel Oils
Water	Bottled Water and High Quality Process/Make-up Water
Electroplating	Nickel, Zinc and Chrome Plating Solutions and Associated Chemicals

Features & Benefits

Very low edge leakage

- Decreased product loss & rework

Controlled micron rating

- Consistent filtration

High dry and wet tensile strength

- Ease of handling before and after filtration

Uniform sheet thickness

- Better edge sealing

Accurate and consistent cut sheets

- Facilitates quick filter press assembly

3M Purification Unsurpassed Excellence in Filtration

3M Purification, a world class manufacturer of innovative filtration solutions, is synonymous with quality and performance. For over half a century 3M Purification has been formulating and developing leading edge filtration technology for industries as diverse as Food & Beverage, Pharmaceutical & Biotechnology.

3M Purification's Zeta Plus depth filter sheets have long been recognised as the premier depth filter media. Innovative media formulations point to 3M Purification's commitment in developing leading-edge filtration devices. 3M Purification's family of well established depth filter sheets includes the ground-breaking Zeta Plus J Series.

Zeta Plus Filter Sheet Family

Zeta Plus sheets are manufactured in Australia, by an advanced process, incorporating virgin fibres, inorganic filter aids, innovative electrokinetic cross linked charged resins and ultra pure water. When combined these components produce a range of filter media that provide both mechanical straining and electrokinetic adsorption.

Zeta Plus J Series

Building upon a proud history of innovation, Zeta Plus J Series has been specially formulated to address the old age concern of edge leakage. Zeta Plus J sheets exhibit up to one-tenth of the edge of competitive sheets. Individually stamped for ease of identification, all Zeta Plus J series have been designed and optimised to provide superior operational performance. Strict quality controls ensure consistent and reliable product with many key benefits.

Zeta Plus Media Types

J Grade	Formulated for all applications where steam sterilisation to 134°C, hot water sanitation or chemical sanitation is conducted. J Grade offers ultra low edge leakage for operators of plate and frame presses.
SL Grade	3M Purification's traditional workhorse product, used exclusively in major Beverage plants and Pharmaceutical plants around the globe. Zeta Plus SL Sheets have been specifically formulated where steam sterilisation or hot water sanitation is conducted.
CL Grade	Formulated for all applications up to 60°C or where chemical sanitation is conducted.
SP Grade	Formulated and tested for pyrogen levels with all the standard features of S grade media.
CP Grade	Formulated and tested for pyrogen levels with all the standard features of C grade media.
U Grade	Formulated for Utilities, High resistivity transformer oil and other Industrial applications.
A Grade	Formulated for Process and Food & Beverage applications, combining 3M Purification's charged modified resins and virgin cellulose.



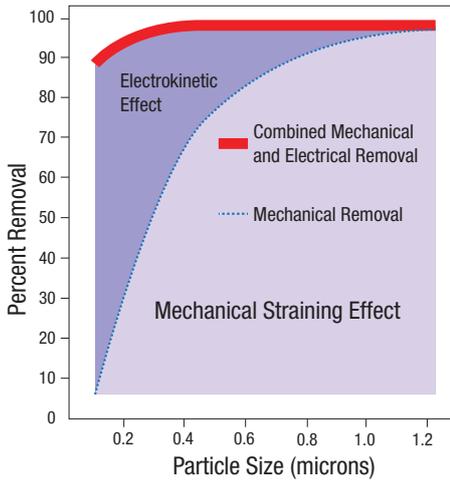


Figure 1: Electrokinetic Effect

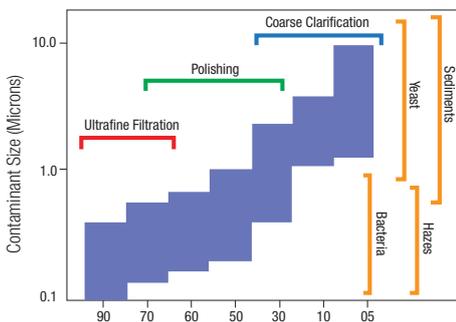


Figure 2: Grade Selection

Change-out Pressure	35 psid (2.4 bar)
Rec. Flow Rate*	10-20 lpm/m ²
Max. Flow Rate	40 lpm/m ²
Rinse Volume	50 litres/m ²

* Consult 3M Purification

Important Notice

The information described in this literature is accurate to the best of our knowledge. A variety of factors, however, can affect the performance of the Product(s) in a particular application, some of which are uniquely within your knowledge and control. INFORMATION IS SUPPLIED UPON THE CONDITION THAT THE PERSONS RECEIVING THE SAME WILL MAKE THEIR OWN DETERMINATION AS TO ITS SUITABILITY FOR THEIR USE. IN NO EVENT WILL 3M PURIFICATION BE RESPONSIBLE FOR DAMAGES OF ANY NATURE WHATSOEVER RESULTING FROM THE USE OF OR RELIANCE UPON INFORMATION.

It is your responsibility to determine if additional testing or information is required and if this product is fit for a particular purpose and suitable in your specific application.

Limitation of Liability

3M Purification Pty Limited will not be liable, to the extent permitted by law, for any loss or damage from the use of the Product(s), whether direct, indirect, special, or consequential, regardless of the legal theory asserted, included warranty, contract, negligence or strict liability.

Performance

The construction of 3M Purification's Zeta Plus Filters Sheets offers depth filtration with a true graded density profile. This provides large particle exclusion on the media surface with finer particles being entrapped in the fibrous matrix of the media. Combined with the high porosity of the media the graded density effect facilitates high dirt holding capacity and long media life.

Efficiency

The innovative electrokinetic resins that cross-link the cellulose fibres in the media matrix generate a strong positive charge (Zeta potential), that provides the media with two different contamination removal mechanisms; mechanical straining and electrokinetic adsorption. These two mechanisms act together to greatly increase the filtration efficiency of Zeta Plus Filter Sheet media, where the charge effect is a function of the fluid being filtered.

Extractables

Extractable levels of calcium (Ca) and Iron (Fe) are quantified by Atomic Adsorption analytical techniques for Zeta Plus Filter Sheets. Details of other inorganic and organic extractables have been determined and are available by contacting 3M Purification.

Grade Selection

Zeta Plus Filter Sheets are available in a wide range of grades. The various grades together with their particle removal ability are shown in Figure 2. Actual operating conditions and the product to be filtered should be considered in grade selection. Technical support in optimal grade selection is available by contacting your 3M Purification Technical Representative or 3M Purification Distributor.

Configurations

Zeta Plus Filter Sheet media can be cut to almost any size (depending on volume) to meet all applications, using plate and frame filter processes and/or Sparkler filters. Common sizes such as 60cm x 60cm and 40cm x 40cm are readily available but it is recommended that the exact details of the sheet size required be supplied when enquiring. Speciality sheet such as reinforced fold over or multiple hole sheet are also available depending on volumes required.

Operating Parameters

Operating parameters are dependent on the grade of media used where application details involve flow rate, temperature, viscosity, sterilisation and grade selection. For further details, please contact your 3M Purification Technical Representative or 3M Purification Distributor.

Chemical Compatibility

Zeta Plus Filter Sheet media exhibits an extremely broad range of chemical compatibility. As actual compatibility will be application specific it is recommended that advice be sought from your local 3M Purification Technical Representative or 3M Purification Distributor.



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