

I.W. Tremont

Technical and Specialty Papers

ISO 9001:2015 Registered

Diagnostic Device Materials Guide

Porous Cellulose Papers

Glass Microfiber Media

Membrane

Thank you for downloading the print only version of this document.

A resource binder containing evaluation samples of the
highlighted materials is available upon request.

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custserv@iwtremont.com

973-427-3800

Thank you.

Thank you for requesting our Diagnostic Device Materials Guide. Inside you will find several samples representing only a small portion of our available 150+ grade variants.

Included in this binder

Glass microfiber

Wicking & Conjugate Pad applications

Grade B	binderless glass microfiber 1.1µm retention
Grade B-85	binderless glass microfiber 1.0µm retention
Grade F	binderless glass microfiber 0.7µm retention
Grade C	binderless glass microfiber 1.2µm retention

Rapid liquid sample mobilization

Grade RG	single side scrim laminated glass microfiber 1.0-2.0µm retention
Grade LL-72	double sided scrim laminated glass microfiber 1.0-2.0µm retention

Whole blood separation applications

Grade D-23®	base glass microfiber for whole blood separation
Grade D23-TC1®	thin caliper, ver 1 base glass microfiber for whole blood separation
Grade D-23® COATED	<i>(Please request sample kit if not contained in binder):</i> Coated versions for high yield agglutinating process, LATERAL FLOW Hct RANGE: NOMINAL = x1 Hct RANGE: HIGH = x2 Coated for high yield agglutinating process, CROSS FLOW Hct Range: NOMINAL = x1

Cellulose Acetate material

Multi-function applications

Grade CA1	High purity fibrous cellulose acetate material, product platform representative
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Cellulose filter paper

Dry Blood Spot Analysis

Grade CFP-DBS-v1	cotton linter filter paper for Dried Blood Spot analysis
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High resolution indications

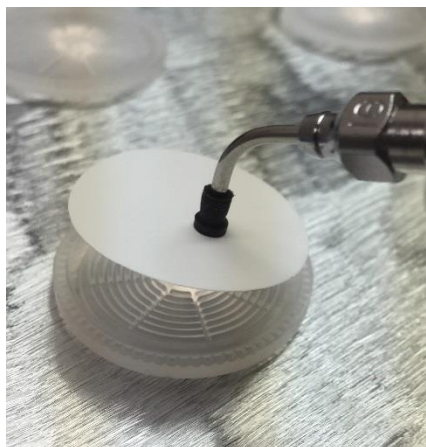
Grade WT-2500hpc	cotton linter chromatography paper 0.19mm caliper
Grade CFP1	qualitative filter paper 0.17mm caliper
Grade CFP2	qualitative filter paper 0.20mm caliper

Highly absorbent base grades

Blotter Grades	full listing of diagnostic blotter and absorbent papers
Grade CFP-1654	cotton linter chromatography paper 0.70mm caliper
Grade BLOTT	alpha cellulose blotter paper 0.51mm caliper
Grade WT-CFP-PE1	polyethylene coated highly absorbent paper

The trademark D-23 is owned by I.W. Tremont Co., Inc.

DiagBndr_Cont_ver4_070218



Ready to commercialize your product?

In addition to Tremont's significant standard production of analytical, laboratory and diagnostic products, we offer our services as your manufacturing partner.

By utilizing a wide array of disciplines and resources we can modify an existing design or completely develop a new product or process. Cost efficiency is created with tight controls in timeline, budget, concurrent processes and production scale. We efficiently develop a viable early stage engineering plan to bring the project to your desired level of completion including short run, scale up and full commercialization.

Core capabilities:

- Wet lay processes for glass microfiber and cellulose media development
- Porous media development including modification of standard grades
- Hundreds of standard material grades in glass, cellulose and synthetics
- Converting such as slitting, die cutting, shearing, laminating & interleaving
- Component design for injection molding
- Component assembly using ultrasonic welding
- Inspection, insertion and encapsulation
- Device optimization and process consulting
- Short run to mid-volume manual operations
- Custom syringe and inline filter devices with integrity testing
- Kitting and special packaging
- ISO Class 8 & 9 clean room assembly and production

Partnered capabilities:

- Paper chemistry and pilot production
- Lateral flow device design and development
- Point of care device design
- Test strip production
- Micro gravure coating
- Rapid whole blood separation technologies
- Microfluidic device design

Material class: Wicking, Absorbent, Conjugate Pad

Physical Properties

Grade Nomenclature	Particle Retention (µm)	Material Type	Thickness (mm)	Filtration Speed (sec.)	Basis Weight (g/m ²)
B	1.00	Binderless Borosilicate Glass Microfiber	0.65	30	140

Additional notes:

Rapid wetting and wicking rates make this media ideal for sample pad collection and wicking platforms. The material is inherently hydrophilic, therefore there have been no additives introduced. This material is free of binder which enables use in sensitive and high resolution tests.

The media is thick with a medium density allowing high resolution line formation and holding capacity. Improved tensile strength with reliable reel-to-reel handling capacity including applications where heavy saturation or precision coatings are applied.

Fine porosity, medium to fast flow rate, with a 1.0µm size particle retention. Ideally suited for the collection of biochemical polymers that have been precipitated by denaturation. This material is twice as thick as Grade A with a higher loading capacity. May also be used as a solid particulate filter for gasses or as a prefilter. Binderless borosilicate glass microfiber.

Binderless borosilicate glass microfiber.

Please contact I.W. Tremont for more information and additional samples.

Material class: Wicking, Absorbent, Conjugate Pad

Physical Properties

Grade Nomenclature	Particle Retention (µm)	Material Type	Thickness (mm)	Filtration Speed (sec.)	Basis Weight (g/m ²)
B-85	1.00	Binderless Borosilicate Glass Microfiber	0.43	47	64

Additional notes:

Rapid wetting and wicking rates make this media ideal for sample pad collection and wicking platforms. The material is inherently hydrophilic, therefore there have been no additives introduced. This material is free of binder which enables use in sensitive and high resolution tests.

The media is thin with a high density allowing high resolution line formation and holding capacity. Medium to long glass microfibers increase tensile strength for general dip saturation applications as well as high precision gravure coatings.

Binderless borosilicate glass microfiber.

Please contact I.W. Tremont for more information and additional samples.

Material class: Wicking, Absorbent, Conjugate Pad

Physical Properties

Grade Nomenclature	Particle Retention (µm)	Material Type	Thickness (mm)	Filtration Speed (sec.)	Basis Weight (g/m ²)
C	1.20	Binderless Borosilicate Glass Microfiber	0.28	25	50

Additional notes:

Rapid wetting and absorption rates make this media ideal for sample pad collection and wicking platforms. The material is inherently hydrophilic, therefore there have been no additives introduced. It is free of binder which enables use in sensitive and high resolution tests. This media demonstrates very high surface absorption properties making it ideal as a rapid liquid sample transfer pad for use under membrane in cross-flow (vertical) or equally as efficient as a wicking device in lateral flow applications.

The media is a versatile medium caliper, medium density grade which allows sufficient tensile strength for reliable reel-to-reel handling capacity. Media shears cleanly due to a unique formation including both short and medium length fibers. Very smooth surface with even density is ideal for precision coatings of both gravure and anilox type applications.

Binderless borosilicate glass microfiber.

Please contact I.W. Tremont for more information and additional samples.

Material class: Wicking, Base absorbent pad, Air/Gas

Physical Properties

Grade Nomenclature	Particle Retention (µm)	Material Type	Thickness (mm)	Filtration Speed (sec.)	Basis Weight (g/m ²)
RG	1-2	Laminated Borosilicate Glass Microfiber	0.38	75	88.1

Additional notes:

Rapid wetting and wicking rates make this media ideal for sample pad collection and wicking platforms. This material is a standard borosilicate glass microfiber with acrylic binder in <3% total material composition. The media is bound to a polyester scrim for support and added strength for high speed reel-to-reel processing. The support layer makes this media ideal for heavily saturated dip processing, as well as dry flat properties to be used as an absorbent layer base component.

This laminated glass product is a high efficiency multi-purpose filter medium with good heat resistance. Demonstrating a retention rate of 1-2µm, it is particularly recommended for both gas and liquid filtration in the medical field and for monitoring applications.

The supporting scrim is a 0.5 oz/yd² Reemay, a high strength spun bonded polyester nonwoven. Also, the scrim is bonded to the glass media using a polyester hot melt which has a melting point of 325° F making it ideal for heat press, ultrasonic and heat-welded device fabrication.

Please contact I.W. Tremont for more information and additional samples.

Material class: Wicking, Base absorbent pad, Air/Gas

Physical Properties

Grade Nomenclature	Particle Retention (µm)	Material Type	Thickness (mm)	Filtration Speed (sec.)	Basis Weight (g/m ²)
LL-72	1-2	Double Laminated Borosilicate Glass Microfiber	0.43	73	115.9

Additional notes:

Rapid wetting and wicking rates make this media ideal for sample pad collection and wicking platforms. This material is a standard borosilicate glass microfiber with acrylic binder in <3% total material composition. The media is bound on both sides to polyester scrim for support and added strength for high speed reel-to-reel processing. The double support layer makes this media ideal for very heavily saturated dip processing, as well as dry flat properties to be used as an absorbent layer base component.

This double sided laminated glass product is a high efficiency multi-purpose filter medium with good heat resistance. Demonstrating a retention rate of 1-2µm, it is particularly recommended for both gas and liquid filtration in the medical field and for monitoring applications.

The supporting scrim is a 0.5 oz/yd² Reemay, a high strength spun bonded polyester nonwoven. Also, the scrim is bonded to the glass media using a polyester hot melt which has a melting point of 325° F making it ideal for heat press, ultrasonic and heat-welded device fabrication.

Please contact I.W. Tremont for more information and additional samples.

Material class: Rapid whole blood separation

Physical Properties

Grade Nomenclature	Particle Retention (µm)	Material Type	Thickness (mm)	Filtration Speed (sec.)	Basis Weight (g/m ²)
D-23®	4.0	Bound Borosilicate Glass Microfiber	0.50	55	94.4

Additional notes:

Important* This is the base glass (uncoated) version of D-23® material which contains no further agglutinating chemistry. See following pages for active separator grade variants.

Base glass now available in 2 caliper thicknesses. The newest addition to the D-23® offering is the “TC1” variant which is similar in formation and formulation, but 15% thinner and 25% lighter basis weight. The TC1 is ideal for rapid separations where total sample volume may preclude use of the thicker/heavier original D-23®. Thinner caliper also allows for faster surface wetting and lower plasma yield loss due to side leakage.

Both variants are acrylic bound borosilicate glass microfiber filter media. This base glass microfiber performs basic whole blood separation via precisely engineered porosity and fiber matrix. In the base glass (untreated) configuration the material demonstrates plasma yield of approximately 15% by volume at nominal Hct range. It is suitable for both lateral and cross flow configurations and is highly consistent in density and caliper for application of your own micro-coating and dip/dry saturation chemistry.

This material demonstrates high uniformity in formation and density allowing reliable migration rates, in both cross and lateral flow applications. With little caliper deviation the media is ideal for challenging lamination applications and micro fluidic devices.

Uniform screen & felt sides with consistent density MD/CD - This media demonstrates excellent lot-to-lot reproducibility.

Material class: Rapid whole blood separation

Physical Properties

Grade Nomenclature	Particle Retention (µm)	Material Type	Thickness (mm)	Filtration Speed (sec.)	Basis Weight (g/m ²)
D-23®-TC1	3.6	Bound Borosilicate Glass Microfiber	0.375	34	70.0

Additional notes:

Important* This is the base glass (uncoated) version of D-23® material which contains no further agglutinating chemistry. See following pages for active separator grade variants.

Base glass now available in 2 caliper thicknesses. The newest addition to the D-23® offering is the “TC1” variant which is similar in formation and formulation, but 15% thinner and 25% lighter basis weight. The TC1 is ideal for rapid separations where total sample volume may preclude use of the thicker/heavier original D-23®. Thinner caliper also allows for faster surface wetting and lower plasma yield loss due to side leakage.

Both variants are acrylic bound borosilicate glass microfiber filter media. This base glass microfiber performs basic whole blood separation via precisely engineered porosity and fiber matrix. In the base glass (untreated) configuration the material demonstrates plasma yield of approximately 15% by volume at nominal Hct range. It is suitable for both lateral and cross flow configurations and is highly consistent in density and caliper for application of your own micro-coating and dip/dry saturation chemistry.

This material demonstrates high uniformity in formation and density allowing reliable migration rates, in both cross and lateral flow applications. With little caliper deviation the media is ideal for challenging lamination applications and micro fluidic devices.

Uniform screen & felt sides with consistent density MD/CD - This media demonstrates excellent lot-to-lot reproducibility.



Diagnostic Materials

Grade LF-D-23[®]
Grade CF-D-23[®]

Coated Whole Blood
 Separation Media

**Now Available in 2 thicknesses to
 improve device optimization**

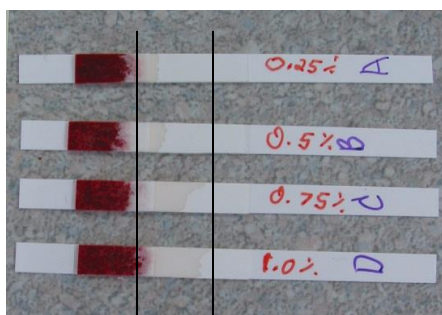
Material class: Whole blood separation - Coated agglutinating chemistry

Available as several variants, including:
 Lateral flow (LF-D23) or Cross flow (CF-D23)

Grade D-23[®] is a high rate, high plasma yield blood separator for both lateral flow and vertical flow immunoassays. This media performs efficiently at a broad range of whole blood sample volumes, including <100µL which further expands your device design capabilities.

Material originates as our D-23[®] base glass borosilicate glass microfiber filter media containing a proprietary acrylic binder system. The base glass material, although an effective whole blood separator alone, is then treated with a novel coating technology which yields high quality plasma with surprising efficacy, speed and with little-to-no red cell hemolysis. Now available in 2 thicknesses for further optimization of your device design.

Plasma yield of >40%, at a rate of 30-120 seconds is achieved via the agglutinating chemistry and coating technology developed by a CRO in the United States whose specialty is blood separation and device development. This market proven media is currently included as a component in successfully commercialized and patented devices with 510K filings.



Resultant plasma yield zone

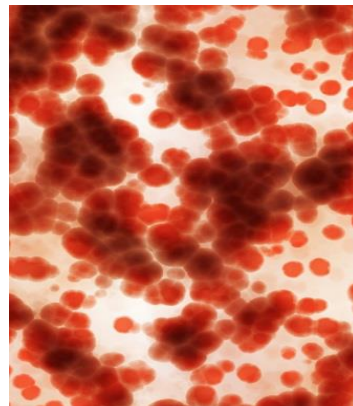
The agglutinating coating can be altered to best fit the application, separation rate and whole blood sample size for your device design.

Shown here are 4 titrations of the agglutinating chemistry (using no buffer) illustrating the plasma yield for similar Hct samples by volume and time in a simple lateral flow design.

Material demonstrates high uniformity in formation and density allowing reliable migration rates, in both cross and lateral flow applications. With little caliper deviation the media is ideal for challenging lamination applications and micro fluidic devices.

Uniform density and stability is ideal for automated device assembly. This media demonstrates excellent lot-to-lot reproducibility - CofC and CofA provided with shipments – Manufactured in an FDA approved facility and available as rolls, reels, sheets and semi-finished converted configurations in both pre and post coated versions.

This media is also available as a base glass microfiber which performs basic whole blood separation via precisely engineered porosity and fiber matrix. In the natural uncoated configuration both caliper versions intrinsically demonstrate plasma yield of approximately 15% by volume at nominal Hct range. It is suitable for both lateral and vertical flow configurations and is highly consistent in density and caliper for application of your own micro-coating and dip/dry saturation chemistry.



3 plasma separation modes in 2 material thicknesses are now available containing proprietary agglutinating chemistry coating. In this coated versions demonstrate plasma yield >40%.

- Coated for high yield agglutinating process, LATERAL FLOW
Hct RANGE: NOMINAL = x1
Hct RANGE: HIGH = x2
- Coated for high yield agglutinating process, CROSS FLOW (vertical)
Hct Range: NOMINAL = x1

Basic material physical characteristics:

	D-23®	D23®-TC1
Basis Weight (g/m2):	94.4	70.0
Caliper Thickness (mm):	0.50	0.375
Micron retention (µm):	3-5	3.6
Tensile strength (lb):	8.0 MD, 4.0 CD	7.0 MD, 5.5 CD
Basic migration rate:	35 sec. / 4cm	28 sec. / 4cm

Known competitive grades*: GE Healthcare Whatman Fusion 5,
GE Healthcare Whatman GF/DVA, LF1, MF & VF2
Ahlstrom / Pall Cytosep®



Please request your device developer's sample kit for coated D-23® variants along with additional technical information.

*At time of publication no FDA 510k has been filed or approved on material alone, only as a component. Suitability without such approval in clinical use is not implied. Incorporation in approved device shall be responsibility of OEM *Use of competitive trademark or nomenclature for reference only. No ownership or license rights implied. As with all competitive material equivalencies, specific evaluation and testing should be thoroughly conducted. Performance of plasma yield is consistent with in-lab testing and dependent on device configuration and conditions.*

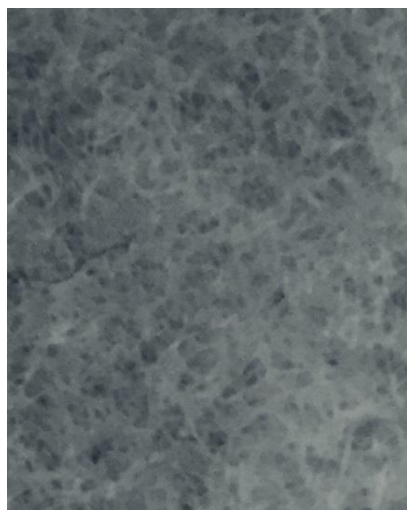
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Ver 07-16

Material class: High Purity Cellulose Acetate

Grade Nomenclature	Surface	Material Type	Thickness (mm)	Retention (μm)	Basis Weight (g/m ²)
CA-1	Fibrous Bright White	High purity CA fibers, no binder	1.45	100	155.0

Grade CA-1 is a non-woven material product platform which is highly modifiable in basis weight, density, porosity, surface treatments and other physical attributes.



20x magnification, backlit surface view

Ideally suited as a

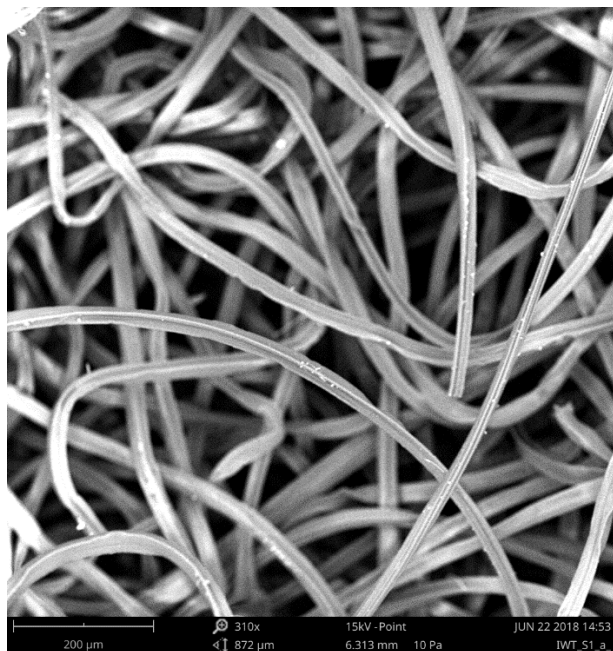
- Bio-sample collection media
- Wound care absorbent pad
- Transdermal drug delivery media
- Base material in a functionalized separation filter
- Stand alone, chemical resistant, high loading filter
- 3D cell scaffold in bioreactors or stirred cell devices
- Component in bio-sensors
- Lateral flow absorbent wick
- High capacity fluidic well for POCT requiring chase buffers
- Prefilter for higher retention CA surface membrane
- Respiration & O₂ therapy concentrator devices

This unique material demonstrates high surface area to mass ratio and high porosity. It is a fibrous format which differentiates this material from traditional cast films and surface membranes.

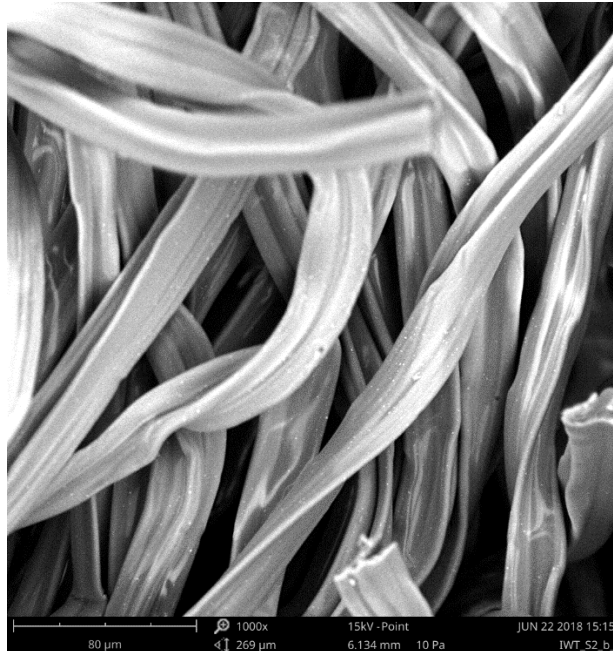
Consistent with other forms of Cellulose Acetate (CA) this media is ideal for Biomedical, Pharmaceutical and Life Sciences applications via high purity, good thermal stability, biocompatibility and functionalization.

The media is ideal as a diagnostic device component, wound care dressing, in DNA/RNA separation and amplification techniques and cell recovery.

In cast sheet membrane form, CA is typically low protein binding, making it ideal for high recovery demand applications. This media in fibrous form has an inherent charge making the media initially high protein binding, but upon loading releases easily and completely to yield very high recovery rates. This unique characteristic of the fibrous form of this material is partially due to the electrostatic properties remnant from the spinning technique as well as a proprietary method used to form the fiber as a structurally consistent matrix.



SEM image indicates highly uniform fiber structure



The complex fiber geometry increases surface area

This fibrous material in depth filter form demonstrates similar advantages of its CA surface membrane counterparts such as surface bonding, high purity and biocompatibility. Due to the torturous matrix within the depth of the media, combined with the complex fiber geometry there is a high surface area ratio that can be functionalized using chemical techniques for bonding. The media is also hydrophilic by filling of the void space within the matrix once wetting has begun. With a wetting factor roughly twice that of comparable polymeric fibrous media, this CA media will absorb and release at consistent rates.

The acetate ester of cellulose, which is a abundant natural material derived from the cellular structure of green plants is a widely accepted medical device biopolymer. This makes this media cost efficient and its high demand affords ample commercial supply. The material is compatible with gamma, e-beam and EtO methods of sterilization without degradation.

This grade demonstrates a unique ability to heat set into a caliper thickness without significant deviations in air/gas flow rates which allow device design variations using same base grade.

Grade CA-1 is a non-woven material product platform which is highly modifiable in basis weight, density, porosity, surface treatments and other physical attributes.

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Diagnostic Materials

**Grade
CFP-DBS-v1**

Dried Blood Spot Analysis

Grade Nomenclature	Surface	Material Type	Thickness (mm)	Migration	Basis Weight (g/m ²)
CFP-DBS-v1	Very Smooth Bright White	Cotton Linter Cellulose Paper	0.44 – 0.47	120 - 135	180

Additional notes:

High purity alpha cotton linter absorbent filter paper specifically formulated to yield a stable DNA, RNA and protein biomarker matrix for quantitative analysis. Surface texture, absorption rate and formation have been optimized for the Guthrie test. The formation is highly uniform and free from density irregularities.

The purity, formation, basis weight and caliper of this material offers a highly reproducible platform for direct elution techniques. Meets or exceeds results obtained using conventional manual extraction methodology in comparison to known competitive commercial equivalents. Paper punches cleanly demonstrating minimal extraneous fibers. Material holds embossing with or without heat set and converts well for incorporation into diagnostic devices.

Uniform screen & felt sides with consistent density MD/CD - Manufacturing performed with RO water filtration system - This media demonstrates excellent lot-to-lot reproducibility - Material chemistries are verified against a standard using GC techniques prior to paper making process - CofC and CofA provided with shipments – Available as rolls, reels, sheets and semi-finished converted configurations.

Ideally suited as a specimen collection media for bioanalysis applications such as the collection of blood drops typical of the Guthrie test, a microbiological assay for the presence of phenylalanine, phenylpyruvate, and phenyllactate in blood or urine. Most notably the Guthrie test is used to screen newborn infants for phenylketonuria (PKU).

At time of publication no FDA 510k has been filed or approved. Suitability without such approval in clinical use is not implied. Incorporation in approved device shall be responsibility of OEM.

Material class: High Purity Cellulose Paper

Physical Properties

Grade Nomenclature	Surface	Material Type	Thickness (mm)	Retention	Basis Weight (g/m ²)
WT-2500hpc	Very Smooth Bright White	Alpha Cotton Linter Cellulose Paper	0.19	25µm	80

Additional notes:

Ideally suited as a high resolution indicator paper and specimen collection media for bioanalysis applications such as the collection of blood drops, urine or saliva. Efficient when used as a wick or absorbent pad under membrane for lateral flow or cross flow designs.

This unique media is an ultra-high purity cellulose filter paper. The proprietary production methods employed produce a media, which demonstrates a highly durable surface texture without the high level of organic extractables common to traditional acid-hardening processes. The alpha cellulose content is a minimum of 97.5% or above and is single source.

High purity alpha cotton linter absorbent filter paper specifically formulated to yield a stable DNA, RNA and protein biomarker matrix for quantitative analysis. The formation is highly uniform and free from density irregularities allowing fast indication and strong line hold.

Uniform screen & felt sides with consistent density MD/CD - Manufacturing performed with RO water filtration system - This media demonstrates excellent lot-to-lot reproducibility - Material chemistries are verified against a standard using GC techniques prior to paper making process - CofC and CofA provided with shipments – Available as rolls, reels, sheets and semi-finished converted configurations.

Material class: High Purity Cellulose Paper

Physical Properties

Grade Nomenclature	Surface	Material Type	Thickness (mm)	Retention	Basis Weight (g/m ²)
CFP1	Smooth Bright White	Alpha Cotton Linter Cellulose Paper	0.20	11µm	86

Additional notes:

Ideally suited as a general sample collection pad, wicking channel in microfluidic designs and base paper in reagent saturations. High resolution indicator paper and specimen collection media for bioanalysis applications such as the collection of blood drops, urine or saliva. Efficient when used as a wick or absorbent pad under membrane for lateral flow or cross flow designs.

This general purpose media is high purity cellulose filter paper. The proprietary production methods employed produce a media, which demonstrates a highly durable surface texture without the high level of organic extractables common to traditional acid-hardening processes. The ash content of this paper is 0.05% and is always single source cotton.

High purity alpha cotton linter absorbent filter paper specifically formulated to yield a stable DNA, RNA and protein biomarker matrix for quantitative analysis. The formation is highly uniform and free from density irregularities allowing fast indication and strong line hold.

Uniform screen & felt sides with consistent density MD/CD - Manufacturing performed with DI water filtration system - This media demonstrates excellent lot-to-lot reproducibility - Material chemistries are verified against a standard using GC techniques prior to paper making process - CofC and CofA provided with shipments – Available as rolls, reels, sheets and semi-finished converted configurations.

Material class: High Purity Cellulose Paper

Physical Properties

Grade Nomenclature	Surface	Material Type	Thickness (mm)	Retention	Basis Weight (g/m ²)
CFP2	Smooth Bright White	Alpha Cotton Linter Cellulose Paper	0.17	8µm	101

Additional notes:

15% thinner caliper than CFP1, with a 15% higher basis weight. This higher density, tighter porosity paper yields faster wicking rates and surface absorption. It is ideally suited as a general sample collection pad, wicking channel in microfluidic designs and base paper in reagent saturations. High resolution indicator paper and specimen collection media for bioanalysis applications such as the collection of blood drops, urine or saliva. Efficient when used as a wick or absorbent pad under membrane for lateral flow or cross flow designs.

This general purpose media is high purity cellulose filter paper. The proprietary production methods employed produce a media, which demonstrates a highly durable surface texture without the high level of organic extractables common to traditional acid-hardening processes. The ash content of this paper is 0.05% and is always single source cotton.

High purity alpha cotton linter absorbent filter paper specifically formulated to yield a stable DNA, RNA and protein biomarker matrix for quantitative analysis. The formation is highly uniform and free from density irregularities allowing fast indication and strong line hold.

Uniform screen & felt sides with consistent density MD/CD - Manufacturing performed with DI water filtration system - This media demonstrates excellent lot-to-lot reproducibility - Material chemistries are verified against a standard using GC techniques prior to paper making process - CofC and CofA provided with shipments – Available as rolls, reels, sheets and semi-finished converted configurations.

Material class: Highly absorbent paper, sample wick, blotter
 Electrophoresis blotter and pad

Physical Properties

Grade	Caliper (mm)	Basis (g/m ²)	H ₂ O migration (mm/10min)
CFP1732	1.74	650	30
WT1250	0.97	400	44
CFP1700	0.88	325	30
DBSv1	0.45	180	10
CFP1636	0.43	178	12
WT900hpc	0.35	180	30
WT901hpc	0.32	180	20
WT430hpc	0.31	170	25
CFP360	0.31	180	35
WT1100hpc	0.25	140	35
WT2500hpc	0.2	90	40
WT2000hpc	0.17	88	33
BLOTT*	0.5	249	125

**BLOTT has a less uniform formation than others in this class, but demonstrates a very high migration rate to basis weight ratio. It is designed to be an end-wick or moisture sink.*

Additional notes:

These grades are highly consistent general purpose diagnostic absorbent pad and wick base. Smooth surface, bright white pure cotton cellulose paper. Material is manufactured from carefully selected, pure cellulose fiber which is fully oxygen bleached and resin free.

The fiber processing is designed to allow both small highly-fibrillated material to blend with longer less processed fiber for a high density, highly absorbent and very rapid migration. Ideally suited as a sample moisture sink in multi-layer membrane designs. Well suited as an end-channel wick in microfluidic devices and structural support base plane.

The even density and high grade formation yields a very consistent and reproducible migration in both MD and CD. Naturally hydrophilic with no additional surfactants or additives necessary to yield high performance surface absorption rates and lateral migration speeds. The uniformity of this media affords a high liquid volume capacity with little to no leakage along strip.

Material when converted correctly demonstrates excellent lay-flat characteristics in reel-to-reel processing with very sharp edge held in slitting and die cutting converting processes. Minimal extraneous fiber or fiber shed is observed in converting and processing.

Material class: Highly absorbent paper, sample wick

Physical Properties

Grade Nomenclature	Surface	Material Type	Thickness (mm)	Migration Speed	Basis Weight (g/m ²)
CFP1654	Smooth Bright White	Alpha Cotton Linter Cellulose Paper	0.70	135mm / 10 min	270

Additional notes:

The furnish composition is of 100% high purity cotton linters with no resin or binder content. The even density and high grade formation yields a very consistent and reproducible migration in both MD and CD. Naturally hydrophilic with no additional surfactants or additives necessary to yield high performance surface absorption rates and lateral migration speeds.

The uniformity of this media affords a high liquid volume capacity with little to no leakage along strip. Material demonstrates excellent lay-flat characteristics in reel-to-reel processing. Its high purity allows for low extractables and minimal loss of analyte, therefore test resolution may be maintained even at high sample volume. The proprietary production methods employed produce a media which demonstrates a highly durable surface texture without the high level of organic extractables common to traditional acid-hardening processes. The cotton linter furnish is single source.

Ideal as an absorbent pad in diagnostic devices, base material in membrane separations, channel wicks in lateral flow configurations and high resolution visual indicative and colorimetric tests.

Material class: Highly absorbent paper, sample wick

Physical Properties

Grade Nomenclature	Surface	Material Type	Thickness (mm)	Migration Speed	Basis Weight (g/m ²)
BLOTT	Smooth Bright White	Cotton Linter Cellulose Paper	0.51	145mm / 10 min	249

Additional notes:

This material is a highly consistent general purpose diagnostic absorbent pad and wick base. Smooth surface, bright white cellulose paper. Material is manufactured from carefully selected, pure cellulose fiber which is fully oxygen bleached and resin free. It demonstrates a very high speed absorbency of 25 s/1.0 mL minimum- according to TAPPI method T432 cm-09, modified testing for western blot rapidity at 35ml/60 sec.

The fiber processing is designed to allow both small highly-fibrillated material to blend with longer less processed fiber for a high density, highly absorbent and very rapid migration. Ideally suited as a sample moisture sink in multi-layer membrane designs. Well suited as an end-channel wick in microfluidic devices.

The even density and high grade formation yields a very consistent and reproducible migration in both MD and CD. Naturally hydrophilic with no additional surfactants or additives necessary to yield high performance surface absorption rates and lateral migration speeds. The uniformity of this media affords a high liquid volume capacity with little to no leakage along strip.

Material demonstrates excellent lay-flat characteristics in reel-to-reel processing with very sharp edge held in slitting and die cutting converting processes. Minimal extraneous fiber or fiber shed is observed in converting and processing.

Material class: Highly absorbent paper, sample wick, impermeable base

Physical Properties

Grade Nomenclature	Surface	Material Type	Thickness (mm)	Migration Speed	Basis Weight (g/m ²)
WT-CFP-PE1	(A) Smooth Bright White (B) Smooth Clear Film	Polyethylene backed Cellulose Paper	0.22	185mm / 10 min	140

Additional notes:

Unique highly absorbent cellulose paper of cotton and mixed soft wood pulp furnish lined with a crystal clear polyethylene film. Material is tear resistant with good lay-flat properties and minimal roll-memory. Ideally suited as an absorbent pad, moisture sink, indicator strip backer base material, impermeable barrier or multi-layer pad platform.

Polyethylene is ideal for heat setting, ultrasonic welding and tack adhesion of layered stack device design. Film is impermeable therefore liquid sample wicks on cellulose portion laterally, but does not absorb through film. Cellulose portion is highly absorbent and demonstrates very high migration speed making this an ideal moisture sink in complex multi-layer membrane and pad designs – or a design whereby sample penetration is not desirable.

Material is manufactured from carefully selected mixed fiber which is fully oxygen bleached and resin free. The uniformity of this media affords a high liquid volume capacity with little to no leakage along strip. Minimal extraneous fiber or fiber shed is observed in converting and processing.

Very high tensile strength for heavy saturations and tight caliper limits for precision coatings.