I.W. Tremont

Technical and Specialty Papers

ISO 9001:2008 Registered

Glass Microfiber

Binderless

Glass microfiber filters offered in this product range are produced from 100% borosilicate glass microfiber without the use of binders or strengthening agents. These filters offer many advantages in a wide range of analytical applications.

The fibers used to manufacture these depth filters are smooth and uniform. This permits their characteristically high flow rates while allowing retention of exceptionally small particles and high load capacity. These characteristics are particularly important in applications involving high concentrations of particulate or gelatinous substances. In choosing the appropriate filter for a specific application, careful consideration should be given to the physical form and concentration of the material to be captured by the filter.



Binderless glass microfiber media is available in many formats such as custom die-cut shapes, disks, sheets, rolls and thimbles.

FEATURES

- Fastest flow rate
- High load capacity
- Retention of particles to sub-micron size
- Broad temperature range
- Use in liquid and gaseous filtration
- Inert fiber composition
- Free of binders or additives

APPLICATIONS

Applications may vary by grades of material. Please see inside guide for details.

DEPTH FILTRATION

Depth filtration categorizes filter media that traps particulate within the random matrix of fibers found within the thickness of the media. The efficiency rating of the filter is characteristic of the complex void space structure that develops as the fibers overlap. The fibrous material within the filter is commonly glass microfiber, cellulose or polypropylene. In depth filters using glass microfiber, the purity of the filter is dictated by the presence of, if any, binder material that acts as a strengthening agent and aids in holding the fibers together. All of the media described in this brochure are 100% borosilicate glass and free of binders.

Because of the characteristically high flow rates of depth filters, they are generally used in applications such as single and multi process removal of sediment and coarse particulate. Glass microfiber filters without binders are an ideal medium to entrap sediment for further analysis and counting due to the inert matrix. Also, depth filtration media are commonly used for prefiltration prior to surface filtration with substrates such as membranes.

Glass Microfiber

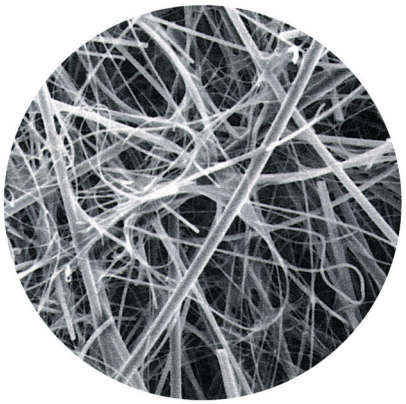
Application Reference by Grades of Glass Microfiber

Grade A

Fine porosity, fast flow rate with a 1.6 µm size particle retention. Frequently used in the filtration of precipitated proteins and cells. Ideally suited for use as a filter for radioimmuno assay of weak beta emitters by scintillation counting and gravimetric determination of airborne particulate. Binderless borosilicate glass microfiber.

Grade B

Fine porosity, medium to fast flow rate with a 1.0 µm 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 particulate filter for gasses or as a prefilter. Binderless borosilicate glass microfiber.



Photomicrograph of Glass Microfiber

Grade C

Fine porosity, fast flow rate with a 1.2 µm size particle retention. Frequently used for RIA procedures and harvesting lymphocytes. Binderless borosilicate glass microfiber.

Grade D

Coarse porosity, fast flow rate with a 2.7 µm size particle retention. Well suited for higher volume and repetitive laboratory filtering. Also ideally used as a general prefilter to extend final filter life. Binderless borosilicate glass microfiber.

Grade E

Fine porosity, fast flow rate with a 1.5 µm size particle retention. This material is an economical media for suspended particle analysis in water, cell harvesting, prefiltration and air monitoring applications. Binderless borosilicate glass microfiber.

Grade F

Fine porosity, medium flow rate with a 0.7 µm size particle retention. Frequently used with Grade D to filter diluted aqueous solutions containing strong oxidizing, acidic, or alkaline components prior to laser spectroscopy. May also be used for TCLP analysis and collecting extremely fine precipitated proteins, including immunoglobulins. Binderless borosilicate glass microfiber.

934-AH®

Fine porosity, fast flow rate with a 1.5 µm size particle retention. This material is the standard for suspended solids content and related measurements (Standard Methods 2540D and EPA Method 160.2). Also widely used in cell harvesting applications and RIA scintillation counting. Binderless borosilicate glass microfiber enables use up to 550ºC.

Grade A-E

Fine porosity and fast flow rate with a 1.0 µm size particle retention. Binderless borosilicate glass microfiber. DOP efficiency is 99.98%. Primarily used in suspended solids and air monitoring.

Specialty Binderless Glass Microfiber Grades

Grade TSS

Binderless high efficiency (HEPA type) filter medium. Liquid filtration properties have been specifically designed for EPA Methods 2540C and 2540D for testing dissolved and suspended solids in water and wastewater. High flow rate with high capacity. Binderless borosilicate glass fiber media has no added extractables to aid in the elimination of sample contamination. Excellent wet strength. Other common applications include gravimetric analysis of air pollutants, membrane support pads, membrane prefilters, clarification of reagent and buffer solutions, filtration of eluent for HPLC and moisture analysis pads.

Grade VSS®

A binder free material manufactured using a proprietary glass chemistry which permits usage in high heat applications beyond typical borosilicate glass blends. Ideally suited for determination of "Fixed & Volatile Solids Ignited at 550ºC" Method 2540E. Low fiber shedding improves quality assurance of test results and low percentage of weight loss when used in gravimetric tests. High loading capacity is an attribute of the high surface area and complex pore structure. Material is also compliant with the requirements of standard methods 2540C & 2540D and EPA Method 160.2 for establishing water quality in suspended solids content.

Total Suspended Solids (TSS) are defined as those which are retained by a "glass-fiber filter disk without organic binder". Also widely used in air pollution monitoring, high temperature flue gas and filtration of high temperature solvents.

Quartz A

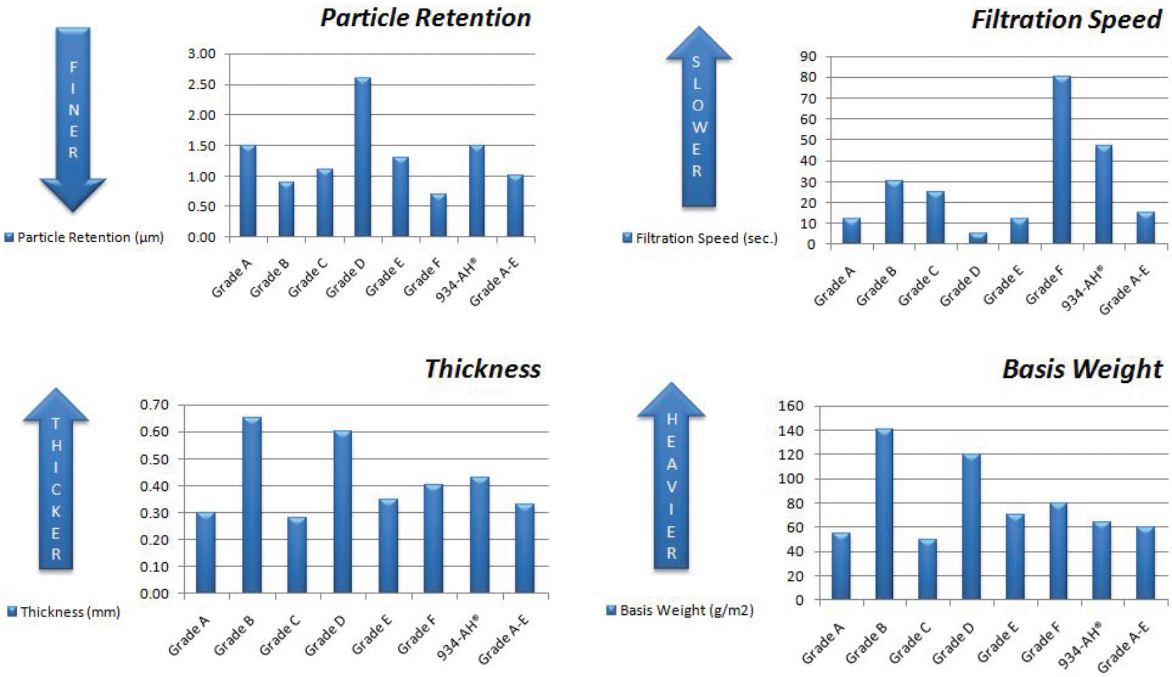
Fine porosity with 99.999% efficiency in air filtration for the retention of 2.20 µm particles. Flow rate 1.1-1.35 m^3/min (Resistance 95mmH_2O@10.5 ft/min). Primarily used in air pollution monitoring, atomic absorption spectroscopy, flame emission spectrometry and other applications where an extremely critical analysis is needed. Effective temperature range of up to 1000ºC.

Grade TCLP

Binderless borosilicate glass microfiber filter media with a particle retention of 0.7 µm. Acid treated and multi-stage deionized water rinsed to conform to EPA method 1311. Inherently low Barium and Zinc Borosilicate Glass and resistant to acids and bases. Recommended for use in U.S. EPA Method 1311 "Toxicity Characteristic Leaching Procedure". Method scope: "The TCLP is designed to determine the mobility of both organic and inorganic analytes present in liquid, solid and multiphasic wastes." Saves time and waste disposal expense in the lab by eliminating technician acid treating and rinsing procedures.

TECHNICAL SPECIFICATIONS:

Grade Nomenclature	Particle Retention (µm)	Material Type	Thickness (mm)	Filtration Speed (sec.)	Basis Weight (g/m²)
A	1.60	Binderless borosilicate glass microfiber	0.30	12	55
B	1.00	Binderless borosilicate glass microfiber	0.65	30	140
C	1.20	Binderless borosilicate glass microfiber	0.28	25	50
D	2.70	Binderless borosilicate glass microfiber	0.60	5	120
E	1.50	Binderless borosilicate glass microfiber	0.35	12	70
F	0.70	Binderless borosilicate glass microfiber	0.40	80	80
A-E	1.00	Binderless borosilicate glass microfiber	0.33	15	60
TSS	1.50	Binderless borosilicate glass microfiber	0.43	47	64
VSS®	1.50	High heat binderless borosilicate glass microfiber	0.43	47	64
934-AH®	1.50	High heat binderless borosilicate glass microfiber	0.43	47	64
Quartz	2.20	Ultra high heat binderless quartz glass microfiber	0.47	<5	85
TCLP	0.70	Acid treated and washed binderless borosilicate glass microfiber	0.40	80	80



ORDERING INFORMATION

For the complete listing of glass microfiber and specialty glass microfiber media available in a wide range of grades and porosities, please refer to our website at www.iwtremont.com.

COMMON COMPETITIVE EQUIVALENTS

For the complete up-to-date listing of competitive product alignments, please visit our website at www.iwtremont.com for the new easy-to-use Equivalency Converter tool.

PACKAGING



Glass Microfiber disks packaged 25/50/100 disks per box.

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