Glass Microfiber Filters

Ahlstrom-Munksjö offers a full range of glass microfiber filters manufactured from 100% pure borosilicate glass. Because of their intrinsic properties, glass microfiber filters have wide applications in many areas of laboratory analysis, especially when fine filtration and high loading capacity is required. Applications for Ahlstrom-Munksjö glass microfiber filters include environmental analysis for water, wastewater, testing of soils, air pollution and monitoring, research and process biochemistry, and gravimetric analysis involving ignition of samples. Ahlstrom-Munksjö glass microfiber filters are also found in the filtration of hot gases and liquids, and in pre-filtration.

KEY FEATURES

- **Qualitative analysis**
- **Laboratory analysis**
- **100% pure borosilicate glass**
- **Rapid flow rate**
- **Fine particle retention 0.7µm – 3.1µm**
- **High loading capacity**
- **Chemical and thermal resistance (up to 500°C)**
- **Long shelf life**
- **Brilliant white color reflecting more than 96% of visible light**
- **Custom cut**

Standard Glass Microfiber Filters

Standard glass microfiber filters contain no binders or other additives that may cause interference to sensitive enzymatic or other chemical reactions. The unique characteristics of glass microfiber filters make its use particularly advantageous to laboratory filtration by enabling fast filtration of large volumes and difficult solutions without premature clogging.

Ahlstrom-Munksjö 151
0.7 µm, Slow Speed

This high performance grade is designed to retain extremely fine particles down to 0.7 µm. Grade 151 has retention comparable to membrane filter while providing higher flow and loading capacity. Grade 151 is recommended for filtering fine precipitated proteins. In the filtration of nucleic acids and difficult biochemical solutions, Grade 151 is used in combination with Grade 141 as a highly efficient protective and retentive pre-filter to extend the loading capacity of membrane filters. Grade 151 is recommended for use in TCLP procedure as described in test methods for evaluating solid wastes, EPA method 1311.

Ahlstrom-Munksjö 121
1.0 µm, Medium Speed

This very thick grade offers finer particle retention than Grade 111 with high wet strength and loading capacity. Grade 121 is recommended for the clarification of liquid suspensions loaded with fine particulates. Grade 121 is also used in membrane pre-filtration and is also found in quantification of solids, and LSC (Liquid Scintillation Counting) techniques that require high loading capacity.

Ahlstrom-Munksjö 131
1.0 µm, Medium Speed

This standard grade found in many environmental applications offers slightly more retention than Grade 111 with slightly lower filtration speed and loading capacity. Grade 131 is recommended for the collection of suspended solids in potable water and in industrial wastes. In biochemical tests, Grade 131 is suited for cell harvesting, liquid scintillation counting and the analysis of carbohydrates.

Ahlstrom-Munksjö 161
1.1 µm, Medium Speed

This popular grade offers finer particle retention and higher flow rate than traditional analytical filter papers. Grade 161 is used in general laboratory applications, cell harvesting, liquid scintillation counting, and in the monitoring of air and water pollution. Grade 161 is generally recommended for water pollution monitoring techniques for total suspended solids.

Ahlstrom-Munksjö 169
1.0 µm, Fast Speed

This glass microfiber grade is a smooth surface, binder-free filter with unique high temperature resistance. It offers fine particle retention and product stability to over 500 degrees Centigrade. The temperature resistance makes Grade 169 well-suited for suspended solids determination, volatile solids testing, air pollution testing, and related EPA and ASTM protocols.

Ahlstrom-Munksjö 111
1.2 µm, Fast Speed

This grade offers fine particle retention with high filtration speed and good loading capacity. Grade 111 is used in general laboratory filtration including atmospheric and water pollution monitoring such as intake controls, ozone-level, and water effluents. Grade 111 is also well suited for filtration of water and protein, testing of algae, bacteria cultures and for radioimmunoassay with weak beta emitters. Grade 111 is also recommended for filtering solvents in a high-resolution laboratory.

Ahlstrom-Munksjö 141
3.1 µm, Fast Speed

This grade offers better filtration speed and a higher loading capacity than an analytical filter paper of similar particle retention. Grade 141 is particularly recommended for pre-filtration of membrane filters and is also used in combination with Grade 121 as a highly efficient protective and retentive grade density pre-filter for membrane filters.

Typical grade properties

Grades	Retention in µm	Filtration Speed Herzberg sec/100mls	Filtration Speed Rapidity mls/min	Loading Capacity	GE Whatman Cross Reference
151	0.7	274	25	Very High	GF/F
121	1.0	143	48	Very High	GF/B
131	1.0	88	78	Very High	GF/C
161	1.1	67	102	Very High	934-AH
111	1.2	53	130	Very High	GF/A
141	3.1	19	350	Very High	GF/D
169	1.0	53	130	Very High	934-AH

Catalog numbers (100 circles/box)

*All circle diameters are in centimeters

Size*	111	121	131	141	151	161	169
2.1	1110-0210	1210-0210	1310-0210	1410-0210	1510-0210	1610-0210	1690-0210
2.4	1110-0240	1210-0240	1310-0240	1410-0240	1510-0240	1610-0240	1690-0240
2.5	1110-0250	1210-0250	1310-0250	1410-0250	1510-0250	1610-0250	1690-0250
4.25	1110-0425	1210-0425	1310-0425	1410-0425	1510-0425	1610-0425	1690-0425
4.7	1110-0470	1210-0470	1310-0470	1410-0470	1510-0470	1610-0470	1690-0470
5.5	1110-0550	1210-0550	1310-0550	1410-0550	1510-0550	1610-0550	1690-0550
7.0	1110-0700	1210-0700	1310-0700	1410-0700	1510-0700	1610-0700	1690-0700
9.0	1110-0900	1210-0900	1310-0900	1410-0900	1510-0900	1610-0900	1690-0900
11.0	1110-1100	1210-1100	1310-1100	1410-1100	1510-1100	1610-1100	1690-1100
12.5	1110-1250	1210-1250	1310-1250	1410-1250	1510-1250	1610-1250	1690-1250
15.0	1110-1500	1210-1500	1310-1500	1410-1500	1510-1500	1610-1500	1690-1500
24.0	1110-2400	1210-2400	1310-2400	1410-2400	1510-2400	1610-2400	1690-2400
32.0	1110-3200	1210-3200	1310-3200	1410-3200	1510-3200	1610-3200	1690-3200

Products for Suspended Solids Analysis

Standard Method 2450 for measuring solids in water calls for a glass filter disk without organic binder for some steps. It is important for this gravimetric test that the filter itself not change weight so that the solids can be accurately measured.

Grade 169 for STM2540-E
Volatile Suspended Solids

- Designed and formulated specifically to maintain a stable weight at 550°C.
- Shows similar handling characteristics before and after 30 minutes in a 600°C furnace.
- Can also be used for STM2540-D, -C, and -B.
- Also available in pre-washed and pre-weighed format.
- Directly comparable and substitutable for GE Whatman 934-AH™.

Grade 161 for STM2540-D
Total Suspended Solids

- Suitable for heating up to temperatures less than 500°C.
- Can also be used for STM 2540-C and -B.
- Standard microfiber glass grade.

Catalog numbers

Grade 169 (100 circles/box)

*All circle diameters are in centimeters

Size*	169
2.1	1690-0210
2.4	1690-0240
2.5	1690-0250
4.25	1690-0425
4.7	1690-0470
5.5	1690-0550
7.0	1690-0700
9.0	1690-0900
11.0	1690-1100
12.5	1690-1250
15.0	1690-1500
24.0	1690-2400
32.0	1690-3200

Catalog numbers

Pre-weighed Filters (100 circles in pans/box)

*All circle diameters are in centimeters

Size *	Pre-weighed
4.7	169W-0470

Filter Papers for TCLP

Ahlstrom-Munksjö offers three microfiber glass grades for use in the toxicity characteristic leaching procedure (TCLP) as described in EPA Method 1311.

Grade 151 – Standard TCLP Filter

This high performance binder-free grade, described on page 17, is Ahlstrom-Munksjö's standard recommendation for TCLP testing.

Grade 193 – Low Metal TCLP Filter

This grade has similar performance properties to Grade 151 and is made with acid-treated borosilicate glass microfibers with inherently low levels of barium and zinc. The filter media contains no binders or other additives that may cause interference with samples. The filters resist acids and bases and have a nominal particle retention of 0.7 µm.

Grade 26
Pre-washed Low Metal TCLP Filter

This grade uses the same acid-treated glass microfiber media as Grade 193, which is then acid-washed using 1N HNO3, as described in EPA Method 1311. The filter media is thoroughly rinsed in a multi-stage process using copious amounts of high-purity deionized water. Prewashing with acid further reduces the content of metals to exceptionally low levels. This eliminates the need to acid-wash the filters in your lab, saving valuable time and reducing waste disposal and reagent costs.

Typical levels of trace elements in Grade 26

Element	mg/L
Ag	0.002
As	0.010
Ba	0.200
Cd	0.002
Cr	0.013
Hg	0.0005
Pb	0.006
Se	0.004

Catalog numbers

*All circle diameters are in centimeters

Size*	Grade 193	Circles/Box	Grade 26	Circles/Box
4.7	1930-0470	100	0260-0470	100
9.0	1930-0900	100	0260-0900	50
11.0	1930-1100	100	0260-1100	50
12.5	1930-1250	100	0260-1250	50
14.2	1930-1420	100	0260-1420	50
15.0	1930-1500	100	0260-1500	50