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(54) **FILTER MEDIA SUITABLE FOR HYDRAULIC APPLICATIONS**

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This patent is subject to a terminal disclaimer.

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USPC **210/490**; 55/488; 55/527; 55/528; 210/503; 210/505; 210/509; 428/311.51; 428/312.6; 428/426; 428/428

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USPC 55/485–488, 527, 528; 162/141, 156, 162/157.1; 210/335, 488–490, 500.26, 210/503–505, 509; 428/300.7, 308.4, 428/304.4, 311.11, 311.51, 315.5, 315.9, 428/316.6, 210, 312.6, 426, 428
See application file for complete search history.

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(57) **ABSTRACT**

Filter media, including those suitable for hydraulic applications, and related components, systems, and methods associated therewith are provided. The filter media described herein may include two or more layers, at least one of the layers having a relatively high percentage of microglass fibers. Additionally, the filter media may be designed such that the ratio of average fiber diameters between two layers is relatively small, which can lead to a relatively low resistance ratio between the layers. In some embodiments, at least one layer of the filter media comprises synthetic polymer fibers. Certain filter media described herein may have desirable properties including high dirt holding capacity and a low resistance to fluid flow. The media may be incorporated into a variety of filter element products including hydraulic filters.

40 Claims, 4 Drawing Sheets

Sample #	Layer3 Meltblown Grammage (g/m²)	Layer3 Meltblown Frazier Permeability (ft³/ft²)	Layer3 Meltblown Thickness (mm)	Layer3 Meltblown Avg. Fiber Diameter (μm)	Layer3/Layer2 Normalized Resistance Ratio	Layer3+Layer2 Composite Micron Rating (μm(c) @ Beta=200)	Layer3+Layer2 Composite DHC (g/m²)	Layer2 Glass Grammage (g/m²)	Layer2 Glass Frazier Permeability (ft³/ft²)	Layer2 Glass Avg. Fiber Diameter (μm)	Layer2/Layer1 Normalized Resistance Ratio	Layer1 Glass Grammage (g/m²)
1	19	68.9	0.095	0.096	3	10.4	142.70	65.1	60	4.3	4	32.5
2	19	68.9	0.095	0.096	3			32.5	119	4.3	4	65.1
3	19	68.9	0.095	0.096	5	10.9	165.92	32.5	198	5.1	2	65.1
4	19	68.9	0.095	0.096	3			32.5	119	4.3	2	65.1
5	19	68.9	0.095	0.096	3	9.9	164.94	65.1	60	4.3	2	32.5
6	19	68.9	0.095	0.096	5	11.3	181.83	65.1	99	5.1	4	32.5
7	19	68.9	0.095	0.096	5	11.4	194.72	65.1	99	5.1	2	32.5
8	20	64	0.095	0.096	3			32.5	115	4.1	5	48.8
9	20	64	0.095	0.096	4			16.3	307	4.7	4	65.1
10	20	64	0.095	0.096	4			16.3	307	4.7	6	65.1
11	20	64	0.095	0.096	2			16.3	153	2.9	6	65.1
12	20	64	0.095	0.096	2			16.3	153	2.9	4	65.1
13	20	64	0.095	0.096	4			48.8	102	4.7	6	32.5
14	20	64	0.095	0.096	2			48.8	51	2.9	4	32.5
15	20	64	0.095	0.096	3			32.5	115	4.1	5	48.8
16	20	64	0.095	0.096	4			48.8	102	4.7	4	32.5
17	20	64	0.095	0.096	2			48.8	51	2.9	6	32.5

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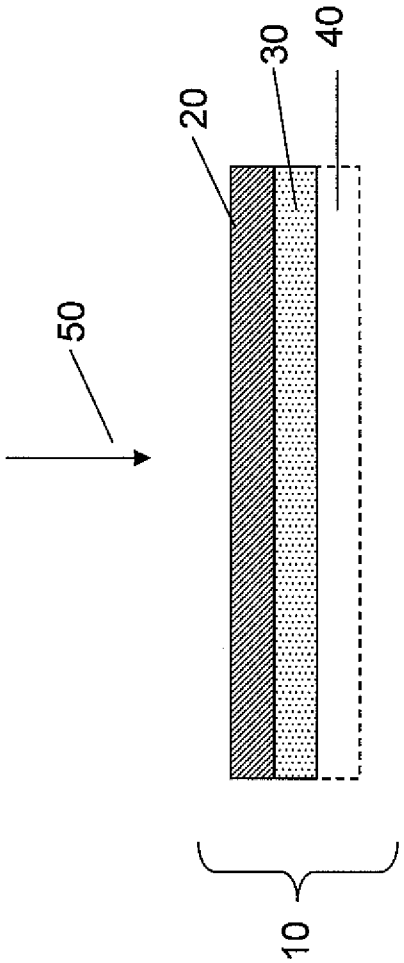

Fig. 1

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