The use of a low molecular weight polyether to increase the selective phenol retention of a filtration material comprising randomly oriented regenerated cellulose fibers is itself a novel and inventive arrangement. Therefore, according to an embodiment of the present invention, there is provided a filter for a smoking article, the filter comprising a segment of filtration material, the filtration material comprising randomly oriented regenerated cellulose fibres and a low molecular weight polyether. The filter further comprises a wrapper circumscribing the segment of filtration material.

As discussed above, incorporating a low molecular weight polyether into the filtration material improves the selective phenol retention of the filtration material. This may be important where a regenerated cellulose filter is used to replace a traditional cellulose acetate tow filter, for example, since regenerated cellulose fibers exhibit less selective phenol retention when compared to traditional cellulose acetate. The use of a low molecular polyether to improve the selective phenol retention of a regenerated cellulose filter is illustrated in the examples shown in Table 1 below:

	catechol µg/mg nicotine	phenol µg/mg nicotine	m+p cresols µg/mg nicotine
Cellulose acetate with 7% triacetin	56.548	10.158	8.439
100% Lyocell	69.798	38.973	20.191
100 parts Lyocell + 5 parts PEG400	56.159	23.155	13.932

Table 1: Comparison of retention of different phenols by a traditional cellulose acetate filter, a regenerated cellulose (Lyocell) filter, and a regenerated cellulose (Lyocell) + polyethylene glycol (PEG) filter. The data represents the amount of each phenol which passes through the filter (that is, the amount of phenol not retained by the filter) when the article is smoked. The data is normalised with respect to the amount of nicotine which is also passes through the filter during smoking of the article. The data was collected using a smoking test in accordance with ISO 4387: Determination of total and nicotine-free dry particulate matter using a routine analytical smoking machine.

A suitable polyether is polyethylene glycol. Preferably, the polyethylene glycol has a number average molecular weight of between about 200 and about 3600, preferably between about 400 and about 1600.

To further improve the function of the filter to selectively remove phenols during the smoking of the smoking article, the filtration material may include triacetin. Including triacetin also helps to increase filter stiffness, which reduces the likelihood of filter collapse during

Claims

1. A filter for a smoking article, the filter comprising:

a segment of filtration material, the filtration material comprising randomly oriented regenerated cellulose fibres and cellulose acetate fibers, the filtration material further comprising triacetin; and

a wrapper circumscribing the segment of filtration material.

2. The filter of claim 1 wherein the filtration material further comprises a low molecular weight polyether.

3. The filter of claim 2 wherein the low molecular weight polyether comprises polyethylene glycol.

4. The filter of claim 3 wherein the polyethylene glycol has a number average molecular weight of between 200 and 3600.

5. The filter of any preceding claim wherein the filtration material comprises additional fibres selected from the group consisting of silk, cotton, polyester, linen, nylon, wool and combinations thereof.

6. The filter of any preceding claim, wherein the triacetin is present in an amount of 1% to 15% by weight of the filtration material.

7. The filter of any preceding claim wherein the regenerated cellulose fibres are crimped staple fibres.

8. The filter of claim 7 wherein the crimped staple fibres have a stretched length of between 10 mm and 30 mm under a tension of between 5 cN/denier and 10 cN/denier.

9. The filter of claim 7 or 8 wherein the crimped staple fibres have a denier of between 0.5 and 8.0 and a crimped rate of between 3 and 10 curves *per* 10 mm fibre length.

10. The filter of any preceding claim wherein the regenerated cellulose fibres are Lyocell fibres.

11. The filter of any preceding claim wherein the wrapper comprises a dissolvable plug wrap consisting of a sheet of polymeric material, wherein the polymeric material comprises at least one water-soluble polymer.

12. A smoking article comprising:

an aerosol-forming substrate; and

a mouthpiece secured in axial alignment with the aerosol-forming substrate, the mouthpiece comprising a filter according to any preceding claim.