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Filter media and Filter aids

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Filter Media

“The surface upon which **solids are deposited** in a filter is called the **Filter medium**”.

PROPERTIES OF IDEAL FILTER MEDIA:

1. Chemically **inert**.
2. High **retention** power.
3. Sufficient **mechanical strength**.
4. Absorbs **negligible amount of material**.
5. Resistant to the **corrosive action** of liquid.

Selection of filter media depends on followings:

1. **Size of particle** to be filtered.
2. **Amount of liquid** to be filtered.
3. **Nature of product** to be filtered.



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Types of Filter/Filtering Media

1. Filter paper:

Filter paper is a **common filter medium** since it offers controlled porosity, limited absorption characteristic, and **low cost**.

- It has different grades and qualities different **pore size** such as coarse, medium and fine.

Drawbacks

1. They **shed very fine particle** to the filtrate.
2. **Absorb property** of liquid.





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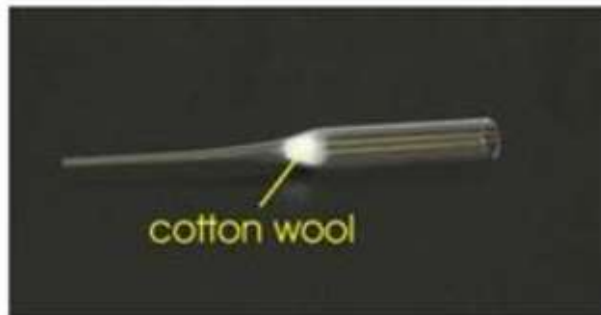
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2.Cotton Wool:

- Small tough of cotton wool placed in the neck of funnel.
- Commonly used filter media of **moderately coarse particles.**

Drawbacks

It sheds fine cotton hair in the filtrate





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3. Glass wool:

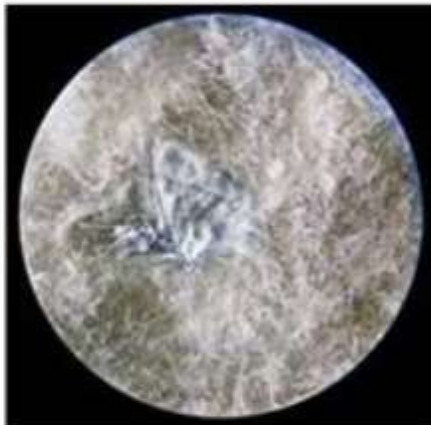
- Consist of **fine fibers of glass** which are **resistant to corrosive liquids** (strong acids, alkalies and oxidizing agents).
- May contaminate the filtrate with **glass fibers**.





4. Asbestos:

- Also used for **filtering the corrosive liquid**.
- Used in gravimetric analysis for collecting fine precipitates.





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5. Fine muslin

- Used to remove **very coarse particles**
- It is done before the passing the liquid through a **fine filter media**, in order to avoid clogging of the fine filter with coarse particles



6. Filter cloth

- Used for **large scale filtration**
- Synthetic cloth has **more strength** with less liquid absorbing capacity than **cotton cloth**





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7. Membrane Filter:

- Made up of cellulose, Polyvinylchloride, Nylon and other cellulose derivatives.
- They are very fine having a very wide range of pore size from 8μ down to 0.22μ .
- Mainly used to remove microorganism and very fine particles from ophthalmic solution and parental products.





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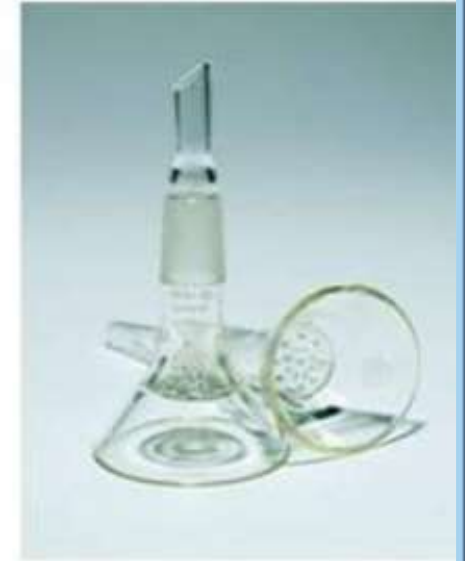
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8. Sintered Glass:

- Made form **borosilicate glass**.
- Glass is powdered and sifted to produce uniform particles.
- Heated and fitted in to glass funnel of suitable size and shape.
- Used for filtering parenteral preparations.
- Useful for filtering the corrosive liquid and oxidizing agent.

Advantages

- Don't shed particles.
- Don't absorbs any liquid.
- Can be easily washed.





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Filter Aids

“The substances which when added to the liquid to be filtered, reduce the resistance of the filter cake and increase the filtration”.

Properties of Filter Aids:

- Chemically inert
- Insoluble in liquids
- Form a porous cake
- Free from impurities
- Able to remain suspended in liquids
- Free from moisture



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Filter Aid Materials



DIATOMACEOUS EARTH



PERLITE



ASBESTOSE



CELLULOSE



CARBON



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Thank you

