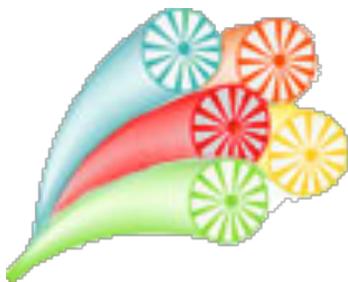


The Magic Of Microfiber And The Science Behind It



A Guide
To Understanding
What Makes
Microfiber The
Smart Material It Is

TABLE OF CONTENTS:

| | |
|--------------------------------------|----|
| Microfiber Textiles Description..... | 4 |
| The Science Behind The Magic..... | 8 |
| Water Absorption..... | 10 |
| Dust Trapping..... | 13 |
| Static Electricity “The Magic”..... | 15 |
| Microfiber Summary..... | 18 |

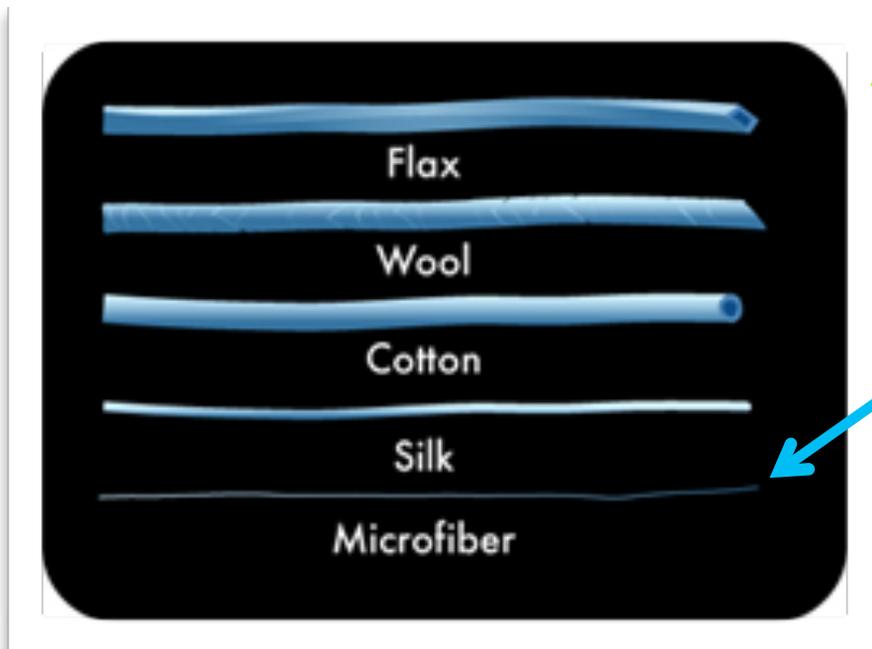
CHAPTER 1:

Microfiber Textiles Description



Close-up view from an electron microscope of microfiber yarn used to create a microfiber chenille duster. Just one of many different ways that microfiber yarn can be woven or knitted.

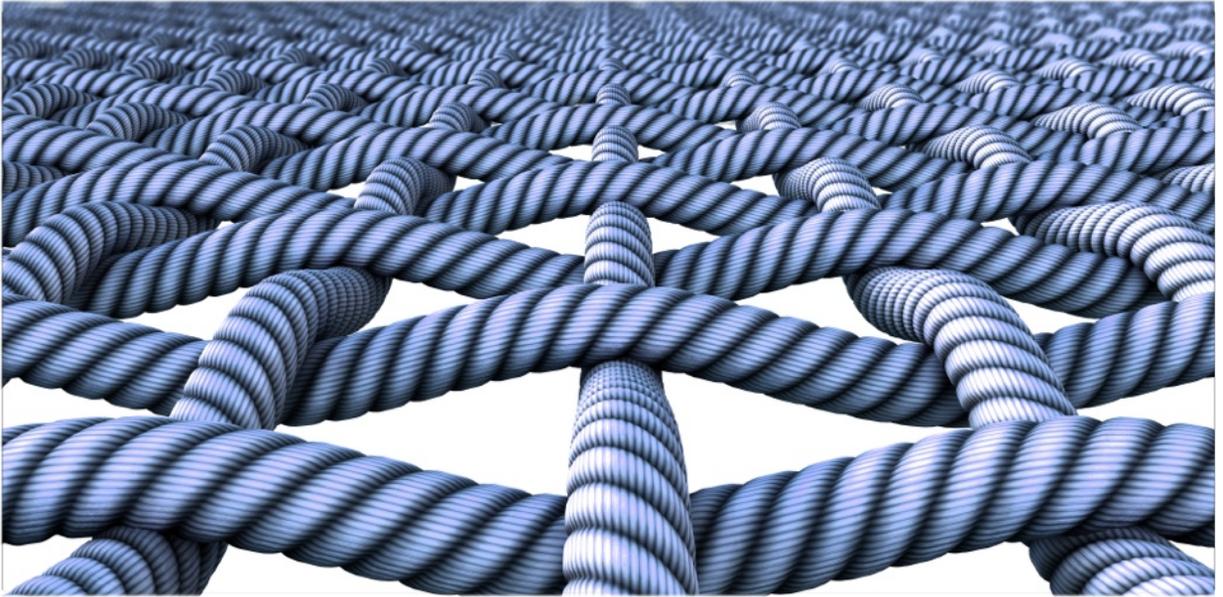
Microfiber fabrics are produced using fibers that are an amazing 1/100th the thickness of a human hair that when interwoven create a yarn with pores that absorb more water and traps more particles than any other material on the planet.



Wow...
Now that's micro!!!



Polyester microfibers have a diameter of 10 microns or less.



Though different polymers can be used to produce microfibers, polyester and nylon are the most common and when mixed together specific attributes can be achieved.



Microfiber fabrics are very lightweight and when blended and woven appropriately for different qualities can achieve properties such as easy washability, stain resistance, high levels of absorbency and much more.



They are used for garments, furniture & cleaning purposes.



CHAPTER 2:

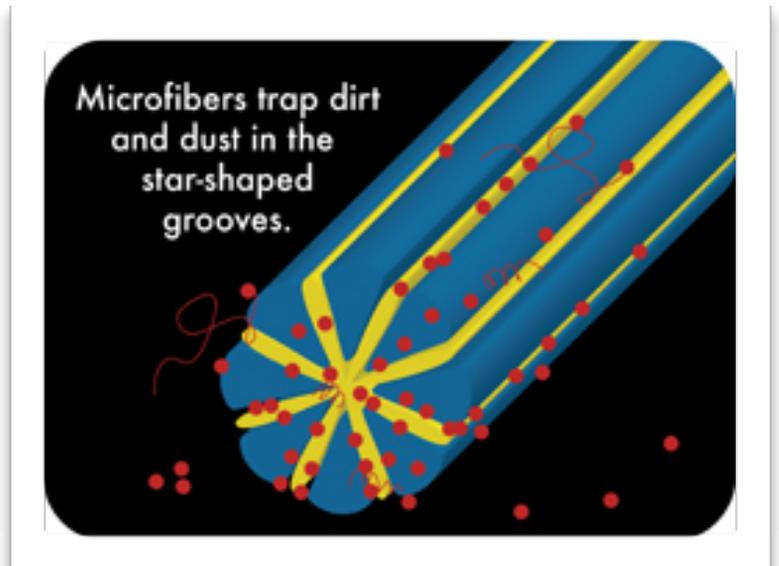
The Science Behind The Magic



“According to how it is designed and engineered, microfibers can be very different from each other.” Cutting edge research and development continues to bring new and improved combinations of microfiber to the market.



Cleaning microfibers have what are referred to as “pie wedge” cross sections, created from splitting the nylon star shaped core from the polyester wedges that divide it into 9 different strands.

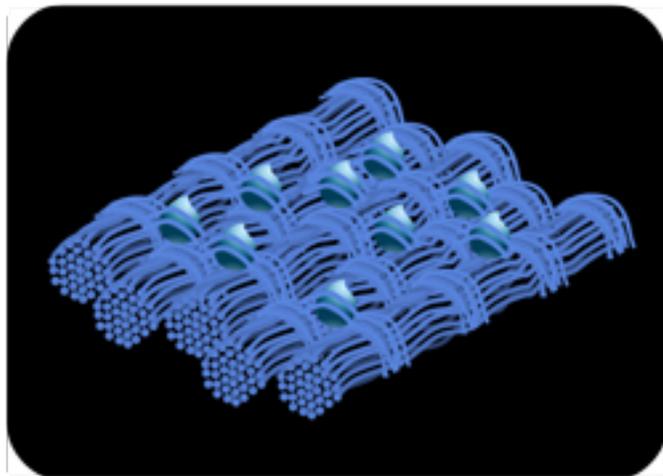


As a result, the fibers have a greatly increased capacity for trapping dust and absorbing water.



* Water Absorption

Cleaning microfibers are designed specifically to make them very sensitive to the capillary effect. By splitting the microfiber it dramatically increases the total surface available to wick, thus increasing the total amount of absorption possible.



The weaving patterns are important as tightly woven microfiber can at first prevent water from absorbing.

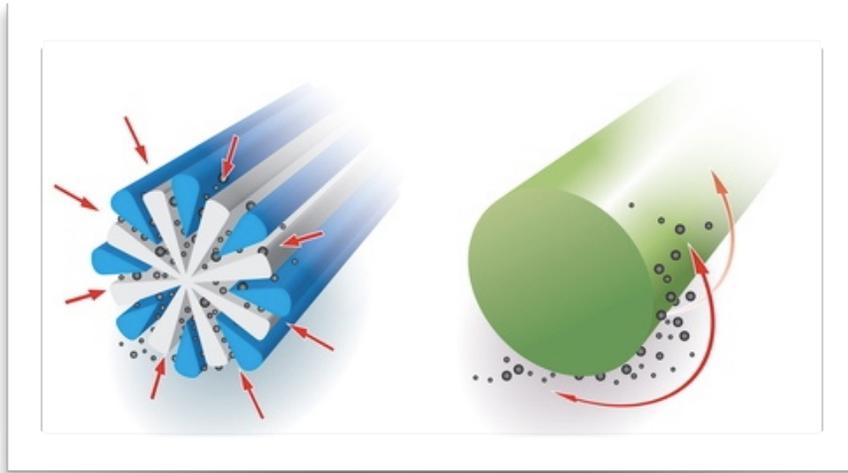


This is why microfiber mops are woven to have an extremely high exposure of the fibers, particularly their core to maximize absorption. Interestingly, the scrubbing action during cleaning mechanically increases the capillary action as the polyester distributes the water evenly inside the microfibers.



Polyester is rather hydrophobic and won't allow water to accumulate on it's surface. This creates a material that will internally hold up to 8 times it's own weight in fluids and is easier to dry since water on the fabrics surface evaporates more quickly. This also helps prevent bacterial growth inside the fabric as well as allows for the spreading of a very thin layer of water on the surface which evaporates and dries almost immediately.





* Dust Trapping

Splitting the microfibers also create angular forms that have a much more efficient collecting effect than those with rounded shape fibers such as cotton, silk, wool, and others. The added angle of microfiber lift and trap even the tiniest of dust particles and even some large bacteria.



When wetting a surface that has dust particles the surface tension created by the water allows for damp dust particles to stick and be trapped between the strands of microfiber.

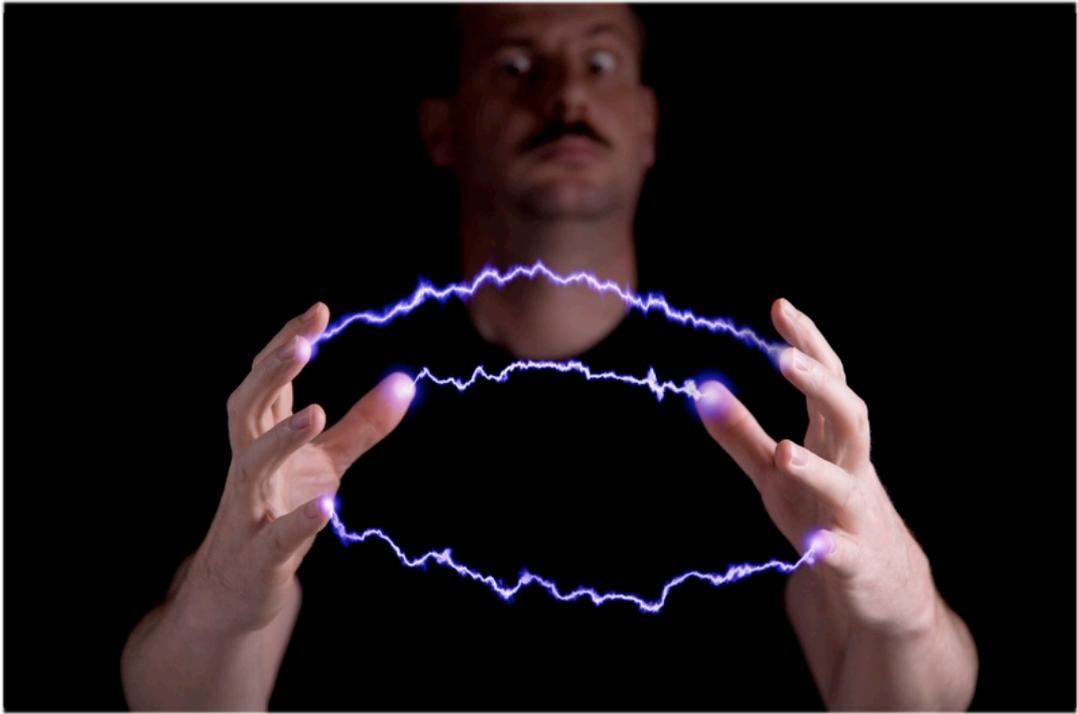


A little cleaning solution can help to gather dust particles for microfiber to remove.



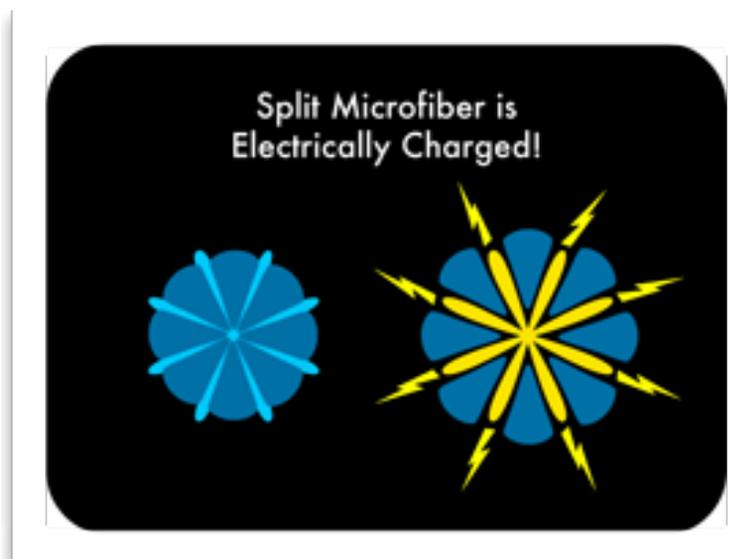
CHAPTER 3:

Static Electricity “The Magic”



Static electricity is the key behind what is often referred to as “the magic of microfiber”.

A split microfiber cloth or mop gains its charge by way of the polyester and nylon having what is called triboelectric properties.



Polyester fibers acquire a positive charge while the nylon fibers acquire a negative charge creating an efficient electric field.



The increased surface area also enhances the electrostatic properties as the movements over the surface will further increase the electrostatic potential.

| POSITIVE CHARGE | NEUTRAL | NEGATIVE CHARGE |
|-----------------|---------|--------------------------------------|
| Dry Human Skin | Cotton | Wood |
| Leather | Steel | Amber |
| Rabbit Fur | | Hard Rubber |
| Glass | | Nickel, Copper, Brass, Silver, Gold, |
| Quartz | | Platinum |
| Human Hair | | POLYESTER |
| NYLON | | Saran Wrap |
| Wool | | Polyurethane |
| Lead | | Polyethylene |
| Fur | | Polypropylene |
| Silk | | Vinyl |
| Aluminum | | Silicon |
| Paper | | Teflon |

It is also interesting to note that wet microfiber will lose its electrostatic charge as water is conductive and when spread on the surface prevents the concentration of electric charges.



CHAPTER 4:

Microfiber Summary



So now you know! What next?

Great, now you have a good foundation to understand how microfiber is designed to adapt to multiple specific needs. You understand that their structures and properties are carefully constructed to create precision cleaning tools and great care must be taken to create and manufacture them properly. It is also important to understand that since so many variations can be produced not all microfiber is of the same quality.



Coastal Wipers puts all of its products thru the industries toughest quality performance tests and offers only those that pass the test. We hope this helped if you kind of knew microfiber was a better cleaning tool but weren't really sure why. If you're interested in improving how you clean contact us to try the finest cleaning tools on the planet.

To test the best microfiber visit

