



GANESHA ECOSPHERE LTD.



PET ► FIBRE ► YARN



R-PET SPECIALITY FIBRE



Oeko-Tex Certificate



GRS (Global Recycle Standard)



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FLAME RETARDANT (FR) FIBRE

Sustainable Eco-friendly Permanent FR Fiber

Characteristics:

- *Produced from Post consumer PET Bottle Scrap.*
- *High-performance inherently flame retardant (FR).*
- *The FR properties are embedded in the polymer structure. Accordingly, FR properties will act in the composition of the fabric for an infinitely long time. This has advantages over the surface technique of coating FR fabric with agents.*
- *No deterioration during maintenance treatments.*
- *Colour and additives integrated into the fibre.*
- *Complete Safety for home and children's textiles. Smoke emission does not exceed the permissible limits.*
- *Phosphorous based flame retardants meet most of the requirements of the textile Industry and it breaks the burning cycle of Textiles.*

APPLICATIONS:

FURNISHINGS	AUTOMOTIVE/TRANSPORT	APPAREL/BEDDINGS	TECHNICAL
Curtains Furniture coverings Table cloths/Place mats Public contracts, Ship and Aircrafts	Upholstery Liners	Protective clothing Workwear Blankets Bed Spreads	Coverings Filters Netting

ECO-FRIENDLY FLAME RETARDANT (FR) PET FIBRES

Deliver Advanced Defense against Flame and Heat

(Protect your LIFE and PROPERTY from fire)

PRODUCT



TECHNICAL DATA SHEET

Sustainable Eco-friendly FR Fiber

Denier	1.5 DN x 38 MM (F/R)	1.5 DN x 38 MM (F/R)	3 DN x 64 MM (F/R)	3 DN x 51 MM (F/R)	6 DN x 38 MM (F/R)
Shade	White	Black	White	Black	Black
Average Tenacity (GPD)	4.70 - 5.00	4.30 - 4.50	3.80 - 4.00	3.60 - 3.80	3.50 - 3.80
Average Elongation %	30	35	50	50	55
Crimp Per Inch	8 to 9	8 to 9	8 to 9	8 to 9	6 to 7
Finish (OPU) %	0.23	0.24	0.23	0.23	0.23
LOI %	35%	35%	35%	35%	35%

1. Can be available in deniers 1.5, 3.0, 6.0 and 15.0 in different cut lengths.
2. Can be available in White, Black and dope dyed shades.
3. L. O. I. can be 30% to 35% as per customer requirement.

Disclaimer : The mentioned information and data is true to the best of our knowledge. The user of any information or data is advised to obtain the latest details from any of the offices of the company as the data is subject to change based on the research & development work undertaken by the company.

Coolfast

Coolfast is a new generation specialty engineered fibres with an unique combination of superior air flow and moisture wicking properties.

The performance of Coolfast is inherent in the fiber structure itself and requires no chemical treatments. The high-tech fabric instantly wicking sweat away from the body and prevents changes in body temperature.

This four-channel fibre forms a transport system which pulls moisture away from the skin surface to the outer layer of the fabric, air moves in through the fabric producing a cooling drying effect, then it dries that moisture faster than any other material.

Coolfast fabrics keeps users dry and comfortable. Coolfast fibre does not have the tendency to absorb moisture in core and has around 20% to 30% higher surface area than traditional round fibre. The fabrics made from cool fast fibre actively suppress the growth of bacteria which are the root cause of body odour and related smell and perfectly suitable for sportswear, socks, underwear and medical application.

How does it work?

Unlike other fibres, **Coolfast** fibres aren't round. They are four point star shaped in cross - section which style allows moisture / liquid to be drawn away quickly from the skin. The moisture wicks through the fabric via these channels and out to a wider surface area for a greater evaporation rate.



Stay
Cool

Coolfast

FEATURES



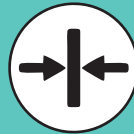
LIGHTWEIGHT



WICKS MOISTURE AWAY QUICKLY



SOFT ON SKIN



LIGHT COMPRESSION AND SUPPORT



CUSHIONS



BREATHABLE



DURABLE



DRIES FAST

APPLICATIONS & USAGE



CLOTHING



ACCESSORIES



**BED SHEETS,
CUSHION COVERS,
CURTAINS, ETC.**



**HOME
FURNISHING**



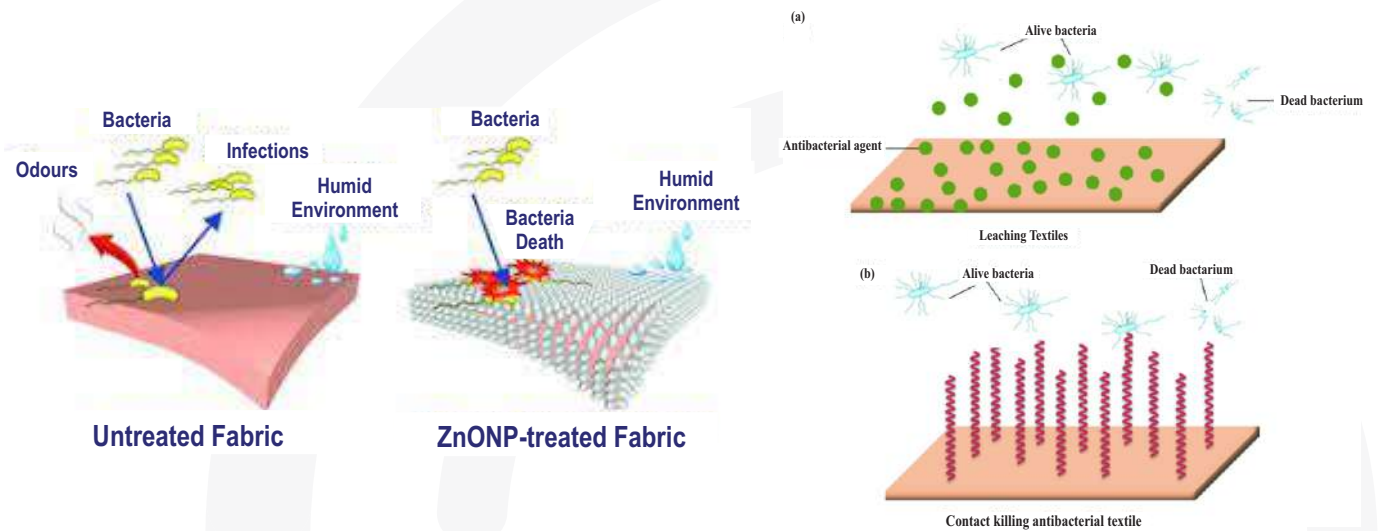
**SHIRTS, JEANS,
POLO SHIRTS, ETC.**



**BICYCLE SEATS,
SLEEPING BAG
LINERS, ETC.**

ANTIMICROBIAL FIBRE

Antimicrobial R-PET Fiber



Market Interconnections



Ganesha Antimicrobial Fibre

Ganesha Ecosphere adds into its product range a new- Hygiene and Sustainable Recycled Polyester Staple Fibre with Antimicrobial properties (with technical support and regulations from BASF, Germany). Ganesha Antimicrobial Fiber kills microorganism or inhibits their growth and forms the basis for fabrics with permanently bioactive properties killing 99.99% of Bacteria's / Virus.

Advantages at a glance:

- Contains an active substance with permanently antimicrobial effect with respect to durability, washing and dyeing.
- Anti odour and anti-fungal
- Inhibits the growth of bacteria in and on the fibre
- Proven to have no effect on the skin flora
- Tested for compatibility with the body
- Increases and improves cleanliness
- Lends a feeling of freshness
- Can be easily blended with Cotton, Viscose or Acrylic fibre.
- 100% activity retained when blended with cotton, viscose or acrylics. (With tailor made AB fibre depending upon the % of blending)

Up close and personal - Ganesha Antimicrobial products properties:

The familiar functions of fabrics, such as their low-pill, elastic, hard-wearing, breathable or heat-regulating properties, remain unchanged. The antimicrobial function is created through the use of bioactive GaneshaAntimicrobialfibres. The Bioactive textiles made with these fibres contain built-in protection against micro-organisms: GaneshaAntimicrobialfibre protect textiles through minimising the growth of bacteria in and on the fabric.

How it works:

- The bacteria is a single cell micro - organism.
- The ZNO or copper nano ions are embedded into the Fibre→Yarn→Fabrics.
- These ions from the antibacterial fabrics are released continuously.
- These ions come in contact with the bacteria's on the clothes.

- The ions attack and break down the bacteria cell bodies to prevent further growth of bacteria's / microbes and hence avoid odour.

NANO ZINC (ZINC OXIDE)

Zinc polyester fiber uses the antibacterial and skin caring effect of the essential trace element-- zinc for all kind of home textiles with a soft, regenerative effect. Since it is directly incorporated into the fiber, zinc is not only an important part of the human nutrition but also skin regenerating and antibacterial. It enhances the healing of inflammation and wounds of skin.

The transport mechanism of Zn from fiber to skin is activated when the moisture in the form of sweat is given off from skin. During a night of sleep, a human body gives off more than 2 liters of moisture on average. The fiber absorbs moisture and Zn is transported onto the human skin. In the presence of Zn, the metabolism of bacteria is disrupted and the resultant odor is reduced.

Main functions of zinc polyester fiber:

- Skin friendly & special care for skin
- Protect skin and good for wound healing
- Effective on anti-dustmite
- Antibacterial & deodorant functions

Feature:

- Good spinning ability, long or short polyester fiber, no obstacle;
- Remarkable effect of ammonia removal, also antimicrobial and bacteriostatic effect. Good compatibility, good dispersion performance, no precipitation.
- Safe and non-toxic, no pollution to the environment.

Application:

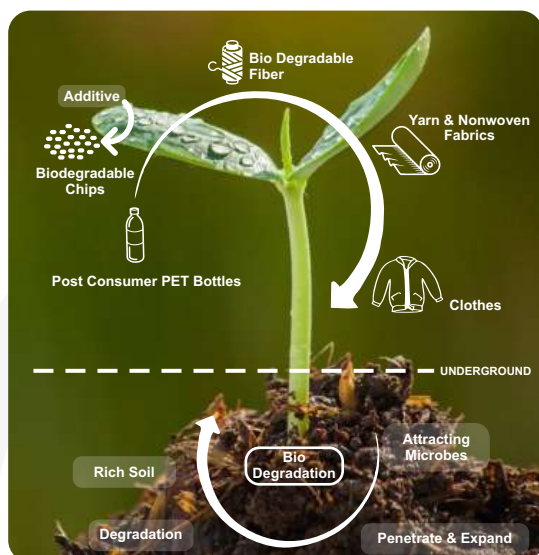
It is used for the development of antibacterial deodorization fiber or fabric, such as underwear, sportswear, socks, footwear lining, home textiles, such as curtains, carpets, etc.

ZNO is the most economical with good antibacterial properties. Universal for all areas of use.

BIO-DEGRADABLE FIBRE

Ganesha Bio-R

Biodegradable PET Recycled Polyester Staple Fibre



Ganesha Bio-R: Is fully biodegradable under Landfill & Ocean in 12 months. Soil left behind from the degradation process contains no plastic and remains perfectly suitable for plant growth.



Brief Summary

Bio-R produced by Ganesha Ecosphere uses the same raw materials-post consumer pet bottle scrap by incorporating a monomer in the polymer chain.

The oxidation phase reduces the polymer molecular weight and introduces oxygen into the structure and transforming the recycled PET from long strands to much smaller lengths. By reducing the chain length of the polymer the material loses its physical strength, making it brittle and non-plastic.

General Properties :

- Bio-R can be used in the same manner as regular Recycled Polyester Staple Fiber because of the physical properties and functions similar to regular Recycled Polyester Staple Fiber.
- Bio-R can be used in Yarn Spinning, Non Wovens and Fiber fill applications as like regular Recycled Polyester Staple Fiber.
- Bio-R can be most ideal for single use wipes and diapers with no recycling alternatives and ultimately heading for landfill making to degrade quickly and help the waste return the organic components back to the earth.
- Bio-R can be dyed and finished in the traditional way maintaining the properties in terms of the colour fastness. It will be resistant to dyeing process and will be effective regardless of subsequent

technical finishing procedures.

- Bio-R is as durable as regular Recycled Polyester Staple Fiber.
- Bio-R has same type of heat resistance and ironable.

Efficiency :

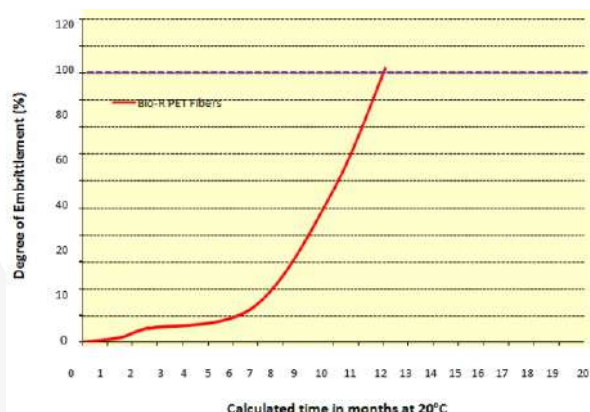
The embrittlement resulting from the Oxo-Biodegradation of the Bio-R is around 100% in 12 months at 20 °C.

Bio-R can be well decomposed in landfill/sea water and thus reduces textiles accumulation in landfills and reduces micro plastic pollution in oceans.

The thicker the fiber/ fabric the slower the visible start of the biodegradation process. But this will not effect the final process in any way and the results will be the same approximately.

The colour of the fiber is also important. For example in case of black fiber, the degradation process will be slowed down by around 10% in the initial stage but the final result / period will be the same more or less.

The landmark standard for testing the Oxo-biodegradable Pet fibers is currently ASTM D6954-04 (ISO-BS EN ISO 14855), standard guide for exposing and testing of Pet fiber that degrade in the environment by a combination of oxidation and biodegradation.



New option after use :

Bio-R is a Polyester material, but expands the range of options for waste treatment by proposing a new method of degradative treatment in a specified compost. Especially in a region where the capacities of landfill or incineration (final disposal of incineration ash) facilities are approaching the limit and as such contribute to the reduction of waste to be land filled or incinerated.

Objective :

“The articles made from Ganesha Biodegradable fiber will be subjected to Natural recycling into sand in 12 months after the end of its useful life and discarded into landfill / Ocean.”

Summing up :

Cotton and wool have great variability in the timing of biodegradation as this is directly related to the chemical treatment of these natural (cotton / wool) textile products. If they are dyed with textile dyes (for example: Vat dye, Reactive dye, Acid dye) the biodegradation process will be significantly slowed down.

However, In case of Ganesha Bio-R, the rate of biodegradation will not depend on the use of dyes or other treatment (antistatic agent and others). The Biodegradation process is well controlled within the DNA and everything works as a mechanism of the “Swiss watch.” The biodegradation process will be within 12 months despite various influences. This is a controlled and programmed process. There is no such high dependence on the oxygen content in the environment or microbes. Our biodegradation process starts after exposure to sunlight and does not depend on environmental conditions.

In the case of wool or cotton, there is no guaranteed time gradation of complete biodegradation.

TECHNICAL DATA SHEET

Bio-R

Biodegradable PET Recycled Fiber

TEST PARAMETERS	UNIT	1.5 DN X 38 MM
DENIER - Average	Dn	1.50
CUT LENGTH - Average	mm	38
CRIMPS	Per inch	8 to 10
TENACITY	gpd	5.20
ELONGATION AT BREAK	%	24%
FINISH	%	0.20%
Bio-degradable properties		Around 100% decomposed in 12 months under given climatic conditions

Conforming to the landmark standard for testing the Oxo-biodegradable Pet fibers ASTM D6954-04 (ISO- BS EN ISO 14855) standard guide for exposing and testing of Pet fiber that degrade in the environment by a combination of oxidation and biodegradation.

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SHORT CUT FIBRE FOR RE-INFORCEMENT

Ganesha Short Cut Fibre (SC 501)



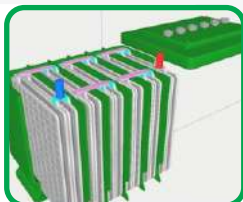
Asbestos Cement Sheets



Construction Industry -
Concrete Reinforcement



Paper Reinforcement



Batteries Reinforcement



Other applications



Ganesha Short Cut Fibre (SC 501)

Brief Summary

- State of the art reinforcing material which is used to increase strength in a variety of applications like Asbestos cement sheets, concrete and precast articles, paper and batteries.
- Non toxic sustainable recycled polyester staple fibre with an improved carbon foot print.
- Available in different deniers 1.2 DN to 6 DN in round or triangular shape.
- Uncrimped / Straight fiber available in cut length from 6 MM to 18 MM.
- High and uniform water dispersibility, uniform fiber cut length and thickness.
- Higher chemical stability and good light resistance.
- High breaking tenacity, low breaking elongation and good thermal stability.
- Environmental friendly manufacturing process.
- Can be available with GRS Certification from Control Union.

Asbestos Cement Sheets

- Asbestos cement sheets being a convenient roof products used as roofing materials in rural / semi-urban housing by industries and poultry units.
- Asbestos is a naturally occurring mineral found in underground rock formations which is recovered by mining and rock crushing.
- Chrysotile Asbestos fibre is 100% imported into India and as such the mixing of SC501 will also help to reduce the volume of Asbestos Imports.
- This SC 501 is helpful in increasing the productivity and sizable cost reduction from 7 to 10%.
- It is used as reinforcement agent for load bearing and flexural strength.

Construction Industry - Concrete Reinforcement

SC 501 provides high reinforcement to control shrinkage, settlement and other cracks.

Applications:

- All types of concrete, concrete road, infra projects, precast articles etc.
- SC 501 can be used in Asphalt mixed materials in road there by increasing the high temperature stability and low temperature flexibility of road, avoid the appearance of tracks, good thermal stability and equal intensity in both wetness and drying.
- The product is acid resistant with higher chemical stability, good light resistance and excellent dispersibility in asphalt.

MOST SUITABLE FOR PAVING THE HIGHWAY AND RUNWAY FOR AIRPORTS.

Paper Reinforcement

Scarcity in forest based raw material has prompted the paper industry to use short cut fibre in different proportion with pulp showing significant improvement in the properties of the paper produced especially the tear index, tearing severity of the paper and shape stability.

- The use of SC501 influence the wet strength, strengthen the paper so that it cannot be torn or optimize dimensional stability and processability.
- Shortcut UV version: This short cut fibre is with optical brightner which is added during the production stage. It makes the fibre visible in the UV spectrum making it useful in specialty paper security features.
- Special paper for special requirement: Most suitable for speciality papers such as security paper for bank notes, passport papers, Identity cards, decorative and wall papers or vehicle documents.

Batteries Reinforcement

Short cut fibers are used in lead acid batteries where it is added to pasted plate type lead acid batteries to help with reinforcement and to offer protection from wear and tear. These fibers are very helpful for reinforcing batteries as the fibers are resistant to chemical solvent, bases and high strength acids and less likely to be dissolved by acid or general use over time. The fiber provide reinforcement inside the pasting, prevent cracking of pasting, allow the pasting to better coat the lead plate and improve long term durability and wear of the battery.

Other Applications

Filters (air filters, oil filters) : Useful for production of filters which are very fine, uniform with small pore size suitable for specific applications like Nano-Filtration and tea bags etc.

SHORT CUT FIBRE

SHADE	RAW WHITE		
PRODUCT	1.5 DEN X 06 MM		
PROPERTIES	UOM	TEST METHOD	SPECIFICATION
DISPERSION IN WATER	~	GESL IN-HOUSE	Excellent dispersability in water
LEANEAR DENSITY	DENIER	ASTM D 1577	1.40 ~ 1.50
TENACITY	GPD	ASTM D 3822	5.0 ~ 6.2
ELONGATION	%	ASTM D 3822	25.0 ~ 40.0
CUT LENGTH	MM	GESL IN HOUSE	6.0 (+/-0.5mm)
MOISTURE (at 120° C For 45 min)	%	GESL IN HOUSE	≤ 8.0

* Can be available in 1.5 dn / 3 dn / 6 dn / 15 dn in 6 mm / 12 mm / 18 mm cut length.

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HYDROPHILIC R-PET FIBRE

Hydrophilic fibre attracts and holds water. Those products are used for absorption of liquids and Moisture but must retain original strength and form.

- Moisture regain and water absorptive properties.
- Affinity for water and air permeability
- Hydroentangled non woven fabric gives relatively high strength, softness, and comfortability.
- Extensively used for wipes, face masks and towels.
- Provide high washing durability, stain releasing anti static and soft handling to the fibre.
- Have low intermolecular force.

Applications

- Facial and cleaning wipes
- Face masks
- Medical products
- Personal hygiene products
- Diapers

HYDROPHOBIC R-PET FIBRE

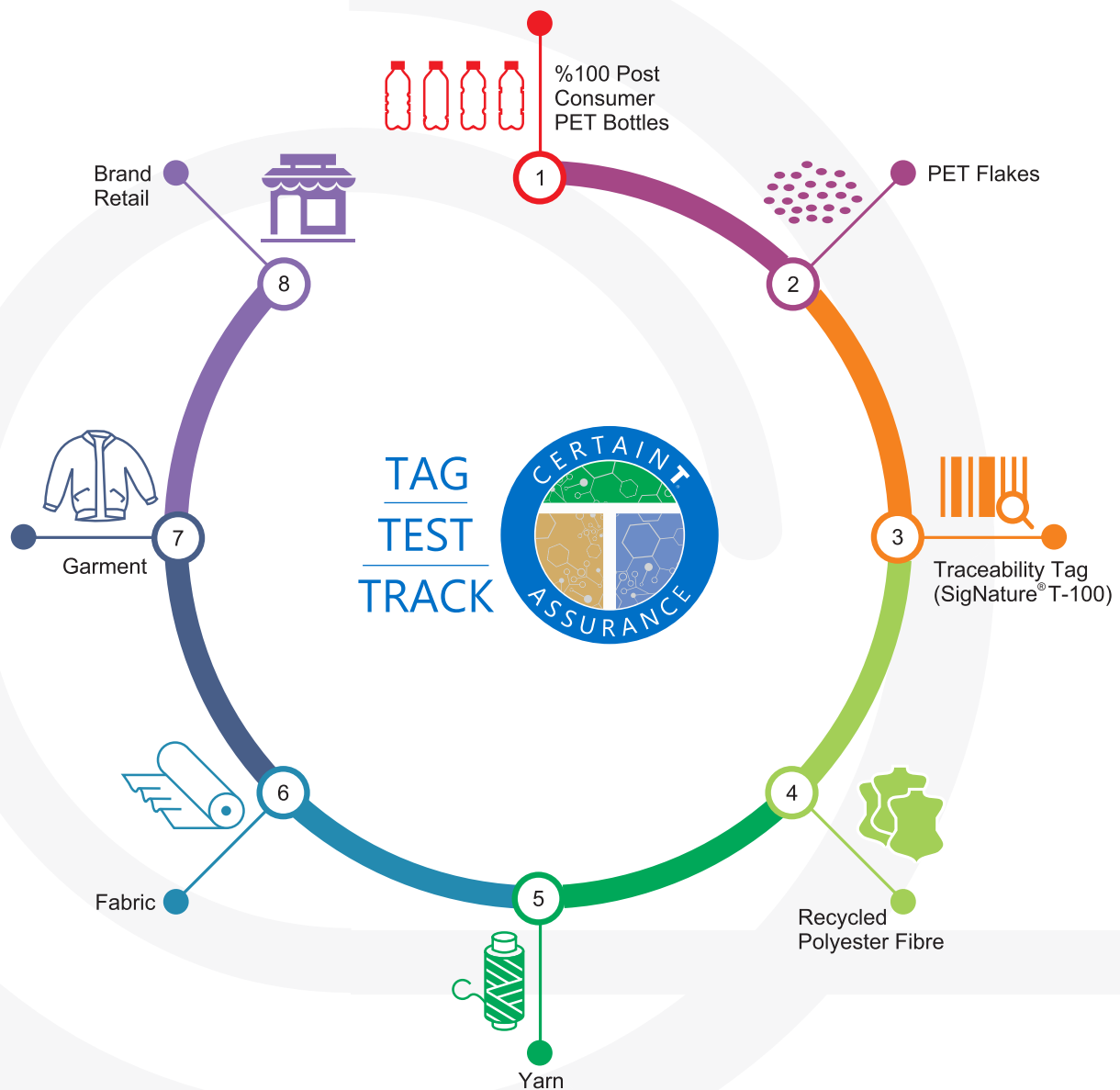
Hydrophobic fiber resists/repel water penetration with extremely low absorbency and high stability. Hydrophobic non wovens are used for products that are intended to provide a dry barrier while withstanding moisture.

Characteristics

- Water repellant
- Light weight and soft
- Have high intermolecular force.

DNA TRACEABLE FIBRE

Ganesha DNA-R fibre



Traceability and Transparency in the textile supply chain has become essential for achieving product sustainability. Brand owners must commit to a sustainability approach backed by science and technology.





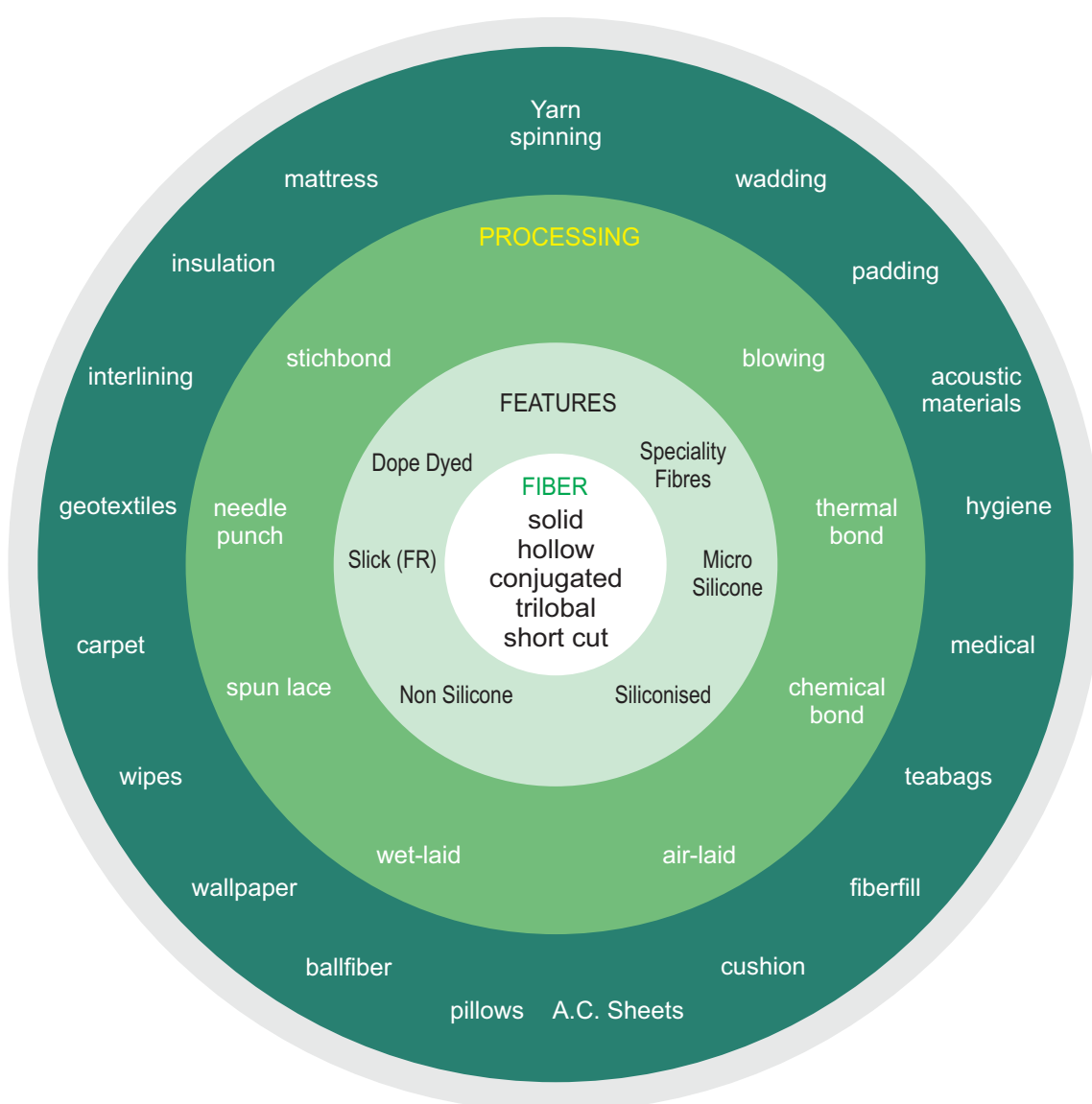
GANESHA ECOSPHERE LTD.



HIGH QUALITY REGENERATED POLYESTER STAPLE FIBRE PRODUCTION CAPACITY 1,11,600 MT PER ANNUM

PRODUCT SELECTOR

Polyester Fibre ▶ Feature ▶ Processing ▶ Applications



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