



**PASHUPATI
GROUP**

— Quality • Innovation • Sustainability —

Pashupati Recyclates Closed Loop Solutions for Waste to Wealth



DIVERSITY



QUALITY



TRACEABILITY



CREDIBILITY

working today for a better tomorrow



At Pashupati, we are your collector, segregator, aggregator and recycler, all unified under one name. This unified approach allows us to showcase to you with utmost transparency, the integrated systems for traceability of your recyclates to the last mile! While offering EPR compliance on one side, to a diverse range of recyclates on the other; we truly extend our products and services, guided by our credible governance, to sheer brand owners' delight!

CERTIFIED EXCELLENCE IN RECYCLING

PNC 2561



PCR-PET for Food Contact Applications
Food and Drug Administration



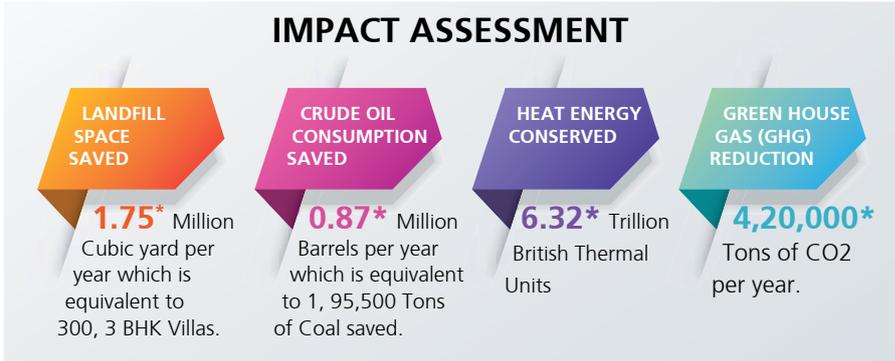
CORPORATE ENVIRONMENTAL RESPONSIBILITY (CER)

Environment care is the sheer fabric of the organisation, be it the products offered, technologies implemented or, for that matter, even in the approach to conduct business. Manufacturing facilities of the Group maintain a zero liquid discharge, controlled stack emissions, implementation of power reduction solutions as well as renewable power sources, swiftly moving towards being established as a 'A Zero Waste Group of Companies'... well chartering the agenda of CER!

CORPORATE SOCIAL RESPONSIBILITY (CSR)

Gratitude has been the fundamental building block of the corporate belief. The products manufactured itself are a reflection of its societal values. Under the aegis of the **Goenka Welfare Society**, the Group has undertaken extensive social activities with the singular agenda to leave the world in a better place than it found it. This is not in response to mandates, but a responsibility to execute in areas such as education, healthcare, infrastructure development, tree plantation and more.

The Group, thus, distinctly contributes to circular economy, positively influencing our ecosystem while addressing very critical environment issues that face the world today.



* With execution of our current expansion plan by end of 2022.

CERTIFIED EXCELLENCE IN RECYCLING

Certificate of Compliance (GRS) Version 4.0



Recycling Process Compliance
CU Inspections & Certificate India Pvt. Ltd.



Experience today plays perhaps the most critical role in the successful implementation of a recycling business; at Pashupati, we are not only one of the biggest, but also one of the oldest recyclers of PCR PET waste in India with 8 manufacturing facilities and 20 network offices. An experience that has been the source of a lot of our learnings. As a result, we have our own collections centres, besides a reliable network of 240+ aggregators who are supplying waste to Pashupati Group from over 20 states of India. So much so that our 'Waste Management Vertical' provides expert advice and we work even with waste pickers for efficient and effective pick-up and collection of waste.

To add, the suppliers, most of who are an exclusive supplier to Pashupati, supply the PCR feedstock in compliance to standards and norms laid down by Pashupati. The feedstock received is segregated based on different polymer families, food contact and non-food contact background, and colour separated. So, what goes on our lines in a very classified crude. The process thus produces, for example, very high quality rPET flakes even suitable for limited food contact applications as per FDA LNO.

Numbers that only a few can match and are testimony to this experience:

- Till March 2021, the Group has recycled over 15,000 million PET bottles.

CERTIFIED EXCELLENCE IN RECYCLING

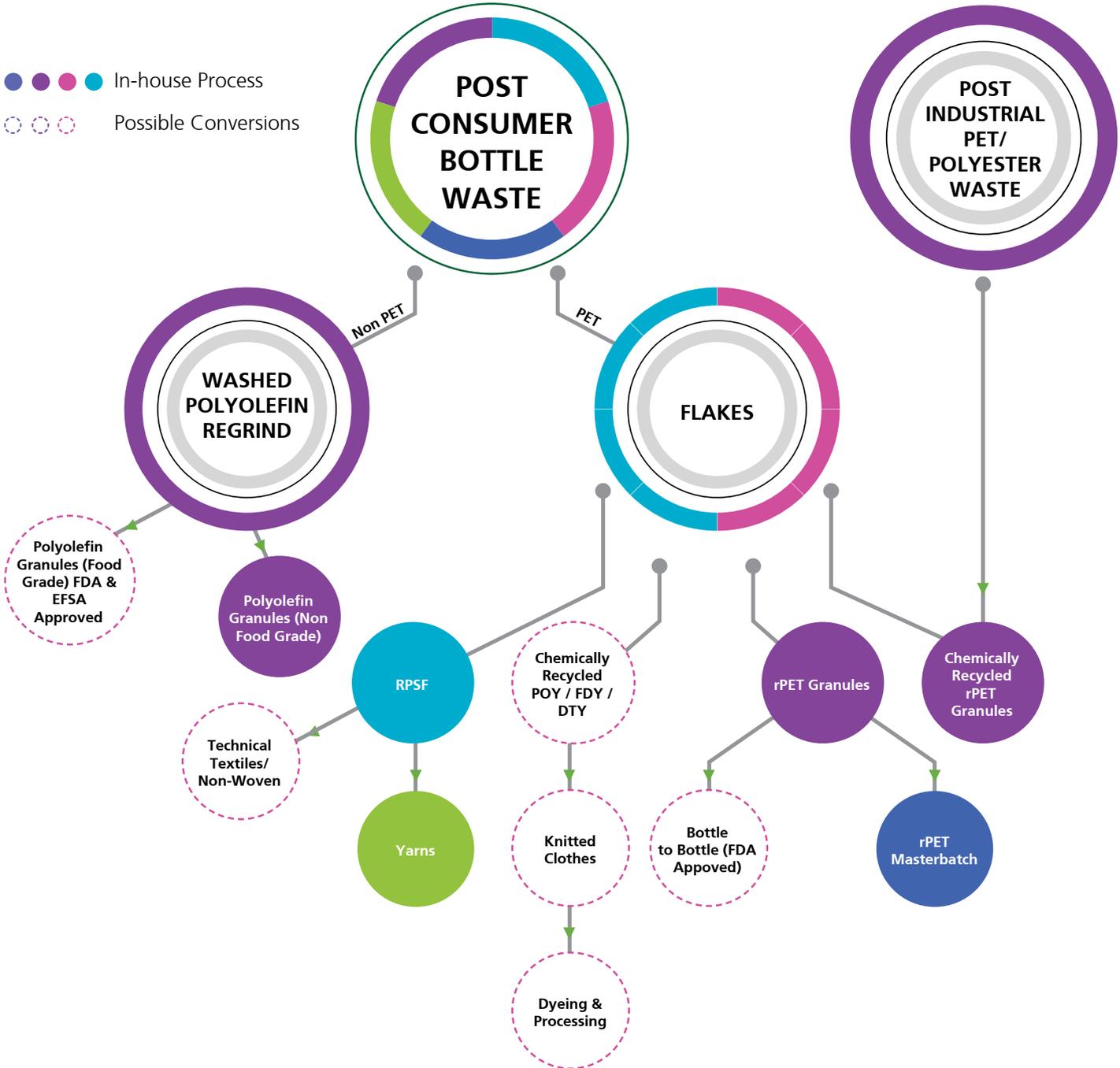
OEKO-TEX® Certificate



Conformity Declaration
According to ISO 17050-1
Hohenstein Textile Testing Institute,
Germany

Proven Experience of PET Business

An Outline of our In-house Processes



- Current recycling capacity: 11.5 million PET bottles per day.
- Target for 2021: Reaching a recycling capacity of 2,00,000 tonnes per annum and a turnover of Rs. 9,000 million.

To sum, what you can source from Pashupati Group is probably the widest range of recyclates under one roof with batch-to-batch consistency for minimal change of processes at your end, products customised to your specifications while remaining compliant to global guidelines.

Finely blended with this experience are the young and energetic 'skilled experts' in the team who have always strived to adopt innovation and enhancement, sustainability of businesses, maintaining impeccable quality standards, while rising up to timely supplies of large quantities that customers demand.

CERTIFIED EXCELLENCE IN RECYCLING

REACH Compliance Certificate



Compliance in Relation to Substances of Very High Concern
 CDG Inspection Limited

Qualified Processes



The qualified processes are substantiated by investment in A-line technologies that present themselves as a big industry differentiator while being a reflection of the management approach to its recycling business. Some of the significant technologies housed by the Group include:

- India's first, single, longest and biggest PET wash line with an intake capacity of 6.5 tonnes/hour.
- Partial chemical recycling to recycle the post-industrial and post-consumer waste to produce rPET granules, thereby avoiding landfills and

CERTIFIED EXCELLENCE IN RECYCLING

Certificate of Compliance (RCS)



Recycled Claim Standard (RCS) Version 2
CU Inspections & Certificate India Pvt. Ltd.



incineration. The Group has been successful in diverting burnt, degraded and discarded post-industrial and post-consumer PET waste from dumping sites to our partial chemical recycling and glycolysis plant.

- German make Bottle, Polymer & Color Sorters and reputed brand's eddy current sorters to separate ferrous & non ferrous materials are installed in our Washing lines
- A 5-stage sorter to purify the input and separate PET and non-PET waste, flake sorters for separating coloured and natural flakes and polymer sorting with an eddy current separator to separate ferrous / non-ferrous materials.

This technology trend only continues with the upcoming German polyolefin recycling plant and chemically recycled POY / DTY / PTY and European bottle to bottle technologies continue to provide a distinctive edge to business.

The infrastructure of the Group is manned by a team of experts on recycling technologies and concepts having the ability to manufacture some customised recycling machinery indigenously so as to enhance the value addition in the products offered.



CERTIFIED EXCELLENCE IN RECYCLING

Regal Certificate of Compliance
(Council Directive 94/62/EC)



Essential Requirements to
Packaging and Packaging Waste
Regal Register (UK) Limited

RECYCLED POLYOLEFIN GRANULES

The Non –PET contents like PP/HDPE/PVC/LLD/BOPP etc are segregated, grinded, washed and granulized to produce high quality recycled Polyolefin Granules and contribute to 100% recycling of PCR waste contents and take us towards waste neutrality.

Molded furniture, household items, Trays & crates, Automotive & Luggage etc.



Parameter	Unit	HD	PP
Ash	%	<1	<1
MFI	g/10 Minutes	0.25-1.6	2-8
Colour		White/Black/Many Colors	White/Black/Many Colors
RoHS(Restriction of Hazardous Substance)	mg/Kg	Not Detected	Not Detected
Moisture	%	<1	<1



OUR PRODUCTION PROCESS



CERTIFIED EXCELLENCE IN RECYCLING
Regal Certificate of Compliance
 (Commission Directive 2002/72/EC)



Applicable Essential Requirements
 of Commission Directive
 Regal Register (UK) Limited

PCR HOT WASHED PET FLAKES

Post-consumer PET bottle bales are debaled, contaminations other than PET like ring / cap / label / soil etc. are segregated by the latest German optical and polymer sorters. The PET is grinded and washed through many stages and passed through eddy current separators to separate ferrous / non-ferrous materials from PET, producing fine quality of hot washed PET flakes.

We have received NOL from FDA for our rPET Flakes.



PET film, PET sheet, filament yarn, beverage bottles, containers, door and furniture, strapping, mono filament and PET resin.

Parameter	Unit	Standard	Result 1	Result 2
PVC	ppm	50	40	10
Metal	ppm	60	20	10
PP	ppm	20	5	5
Wrapper	ppm	20	10	10
Moisture	%	0.7 - 0.8	0.8	0.8
HD / Low Melt	ppm	50	50	20
Flake Size	mm	8 - 12	8 - 12	8 - 12
ASH	ppm	100	100	100

CALCIUM FILLER MASTERBATCH

These masterbatches are manufactured with CaCO₃ and base polymer like PP / PE / HD. Their advantages are cost reduction, slip property introduction, increase in output, printability and stiffness, while promoting ease in processing.

Type: PP Filler / PP Lam Filler / LLD Filler / HD Lam Filler

Base: PE / PP

Melt Flow Index (gm/10 min): 01 - 05

Bulk Density (gm/cm³): 1.20 ± 0.05

Filler Content (%): 20 - 80

Moisture (%): 0.10 (Max)

Chips/Gram (Nos.): 35 ± 5

Recommended Dosage: 10 - 50%

Film lamination, injection moulding, blowing, woven sacks, PE and PP tapes, pipe, extrusion etc.



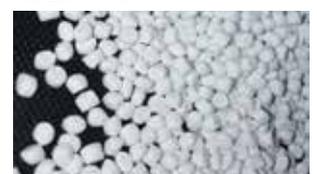
PP Filler



HD Lam Filler



LLD Filler



PP Lam filler

WOVEN FABRIC

PP / HD woven fabric is available with and without lamination. These fabrics are light in weight and ideally suited for packaging. **We also manufacture PP/HDPE woven fabrics from 100% recycled contents and offer sustainable packaging solutions.**

These are used in industries like sugar / cement / chemical / fertilizer / food packaging / grains.



Base Polymer: PP / HD

GSM without Lamination (GSM): 36.5 to 117

GSM with Lamination (GSM): 46.25 to 138

Colour: White / Milky / Yellow

Type: Tube, Side Cut, Centre Cut, Flat Role

Width: 12 - 54 Inch/Tube
24 - 108 Inch/Flat

Diversity in Products /

CHEMICALLY RECYCLED PET CHIPS

PET and polyester waste (PCR and post industrial) are first mechanically process (if required) to remove external contaminations from the feedstock. The clean and sorted feedstock is then processed through partial chemical recycling to remove internal contamination and passed through fine filtration to manufacture fine quality of rPET granules.

Monofilaments, PET sheets, PET films, PET bottles, synthetic resins, POY, FDY, polyester staple fibre, PET straps, masterbatches etc.



rPET Chips Bright



rPET Chips Semi Dull



rPET Chips Semi Dull



rPET Chips Dull

Grade	Chemically Recycled				
	Feedstock	Post Consumer Recycled (PCR)		PCR + Post Industrial Waste	
		Type	Bright	Semi Dull	Semi Dull
IV (dl/gm)		0.630 ± 0.010	0.630 ± 0.010	0.640 ± 0.020	0.630 ± 0.010
Ash (ppm)		300 ± 100	2,000 ± 500 (TiO ₂)	2,000 ± 500	2,000 ± 100
COOH (Meq/Kg)		30 ± 5	30 ± 5	40 ± 5	-
Chips per gram (Nos.)		50 ± 05	35 ± 05	30 ± 05	30 ± 05
Melting Point (°C)		248 ± 3	245 ± 3	245 ± 5	245 ± 5
Moisture Content (w/w%)		< 0.3	< 0.3	< 0.3	< 0.3
Bulk Density		800 ± 50	800 ± 50	800 ± 50	800 ± 50
'L' Col. Value (CIE)		55 ± 5	70 ± 5	-	-
'b' Col. Value (CIE)		8 ± 2	8 ± 2	-	-

COLOUR MASTERBATCH

It is a concentrated form of pigment and additives, and allows the user to colour the base polymer economically during plastic processing.

Base Polymer: LD / LLD / PVC

Colour: Silver / Black / Navy Blue / Violet / Red / Green / Golden Yellow

Melt Flow Index (gm/10 min): 10 - 50

Bulk Density (gm/cm³): 0.75 - 1.2

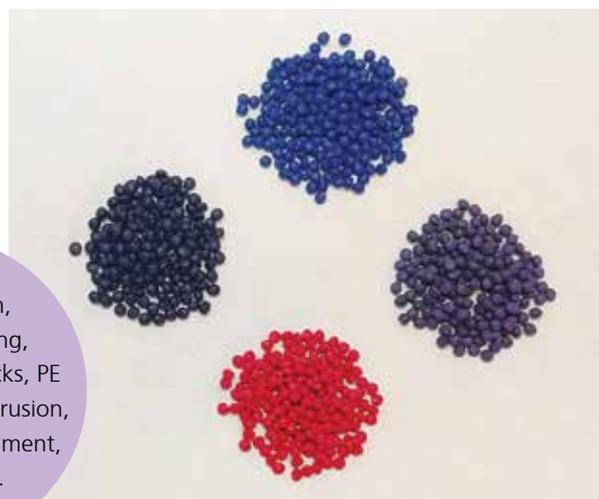
Loading (%): 40 - 60

Moisture (%): 0.10 (Max.)

Chips/Gram (Nos.): 35 - 50

Recommended Dosage: 1 - 5%

Film lamination, injection moulding, blowing, woven sacks, PE & PP tapes, pipe, extrusion, strapping, monofilament, containers etc.



rPET MASTERBATCH

It is a concentrated form of pigment and additives, and allows the user to colour the base polymer (PET) economically during the manufacturing process. The masterbatch is made from rPET contents.

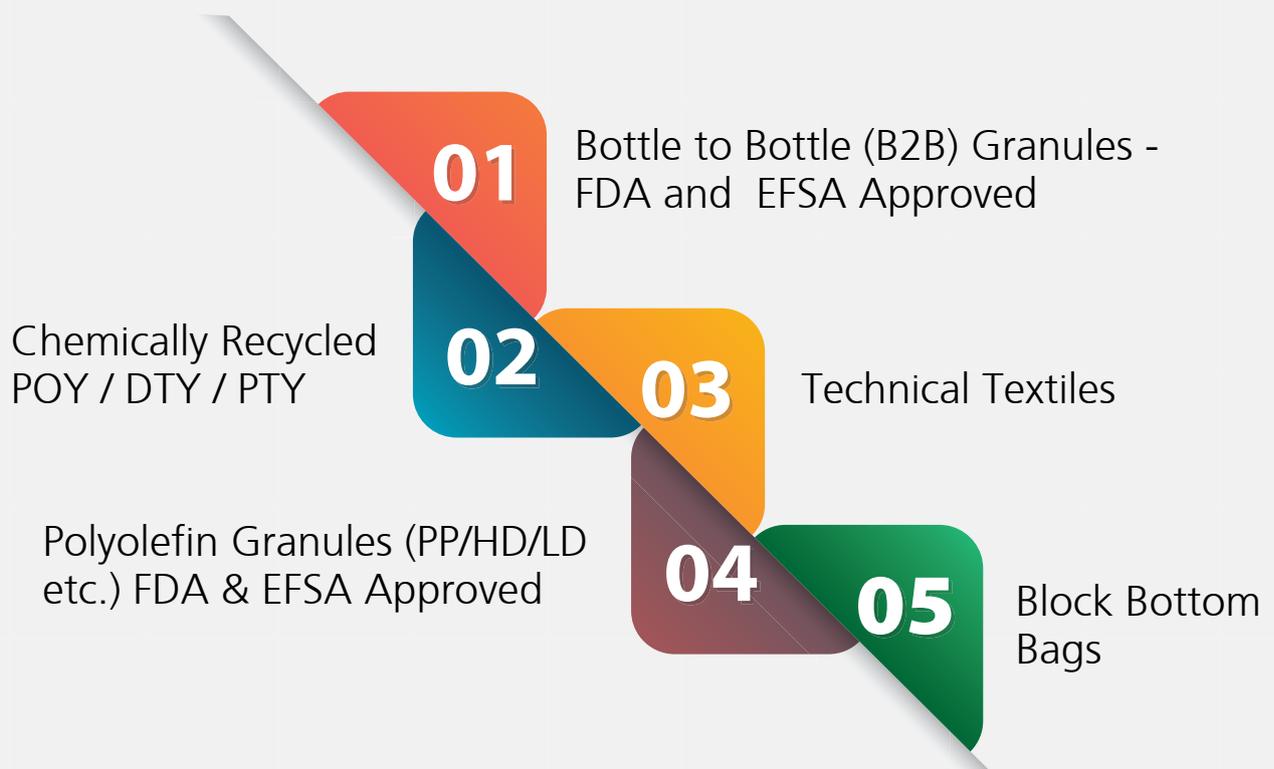
rPSF, POY, strapping, containers, monofilament, PET sheets etc.



	Masterbatch	Masterbatch
Grade	M-243	M-241
Colour	Black	Black
IV of Base Polymer (dl/gm)	0.70 ± 0.005	0.70 ± 0.05
IV of MB (dl/gm)	0.34	0.35
Ash (%)	0.15	0.12
Carbon Content (%)	27.5	27.5
Chips Per Gram (Nos.)	25	25
FPV @ 10 Micron Mesh (Br/gm)	4.60	1.80
Moisture Content (%)	≤ 0.25	≤ 0.25
Bulk Density	0.90	0.90

UPCOMING PRODUCTS

The coming months will see a slew of innovative products



RECYCLED POLYESTER STAPLE FIBRE - SOLID

Recycled polyester staple fibre is a synthetic man-made fibre made from PET flakes which is manufactured from post-consumer PET bottles by chemical / mechanical recycling.

Grade: Solid (Medium / High / Super High) Tenacity Fibre

Shrinkage: Low / Normal

Denier: 1 DN to 15 DN

Cut Length: As per requirement

Colour: White / Off White /

Optical White / Various Colours



Generally used in spinning to make polyester spun yarn, which is then knitted or weaved into fabrics, and then to ready-made garments. Different qualities are manufactured as per the demand of different types of yarn industries.

RECYCLED POLYESTER STAPLE FIBRE - HOLLOW & CONJUGATED HOLLOW

Recycled polyester staple fibre is a synthetic man-made fibre made from PET / polyester waste and post-consumer PET bottles. Pashupati produces this fibre by chemical / mechanical recycling.

It is used in non-woven carpets, wadding, filtration industries, acoustic sheets, as a polyfill for stuffing cushions, pillows, soft toys, quilts etc. It is also used for spinning yarns and making geotextiles, diapers, reinforced materials like road, construction items (for protection and strength), roofing, shelves, insulation materials, shoe uppers, upholstery, railway sheet, mattresses etc.



Grade: Hollow and Conjugated Hollow

Finish: Siliconised / Non-siliconised

Variety: UV Stabilised / Super Soft / Low Shrinkage

Denier: 6 DN to 15 DN

Cut Length: As per requirement

Colour: White / Off White

RECYCLED POLYESTER STAPLE FIBRE - REINFORCEMENT



On seeing the great demand in domestic and international markets, and analysing its benefits, we developed this fibre. This unique fibre finds better anchoring with concrete.

It is specially designed to form an internal support system for concrete because concrete is relatively brittle and lacks flexural strength and there is always a chance that the concrete cracks.

This fibre is widely used in RCC and PCC slabs, beams, columns and lintels, construction of basement, flooring, roads, footings, foundations, tanks, bridges and airport runways. It is also used in pre cast concrete structures, water retaining structures, plain concrete and wall plastering.

Grade: Reinforcement

Denier: As per requirement

Cut Length: As per requirement

RECYCLED POLYESTER STAPLE FIBRE - ANTI-BACTERIAL

With growing health awareness, there is an increasing need for anti-bacterial fibres. The fibre has strong anti-bacterial resistance and its killing effect lasts from a few weeks to few years with long-term efficiency. When the anti-bacterial agent is washed off the surface, there will be an over flow of new anti-bacterial agents causing formation of a new zone of inhibition. Therefore, this fibre clothing allows excellent washing ability.

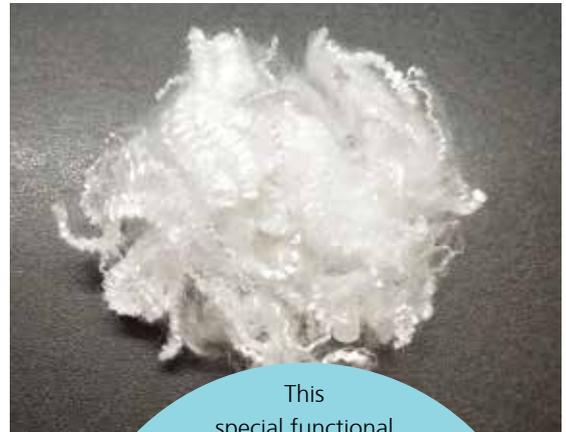
Grade: Anti-bacterial (Solid/Hollow)

Denier: 1 DN to 15 DN

Cut Length: As per requirement

Colour: White / Off White

Thus, the special fibre inherently possesses anti-microbial properties which inhibits the growth of microbes (bacteria and viruses) on textiles, and kills them to the extent of approx. 99%.



This special functional fibre is used in medical devices, healthcare, hygienic applications, water purification systems, hospitals, dental surgery equipment, sportswear, textiles (especially for the elderly, pregnant women and infant clothing), automotive textiles, thermal and mechanical protection item, heating, and water purification system and storage.

RECYCLED POLYESTER STAPLE FIBRE - FIRE RETARDANT



This fire retardant fibre is used in hospitality, transport, industrial work wear, uniforms for fire fighters and air force pilots, tent and parachute fabric, professional motor racing apparel etc.

Safety is the most important factor when choosing fabric for camping supplies, car seats and upholstery etc. These flame retardant fibres are developed to combine comfort and permanent safety without compromising on design. This fibre is produced with modified polyester that contains a flame retardant component which masterfully inhibits the spread of fire. Hence, the fabrics produced with our FR fibre are flame retardant for a long time while retaining the safety factor after repeated washing or drying and are not harmful for body contact.

The fire retardant fibre produced from the polyester is excellent in dry heat shrinkage and applicable to non-flammable materials such as curtains and the like.

What makes Pashupati stand out from the crowd is that the fire retardant properties are 'built in' into the fibre at the molecular level.

Grade: Fire Retardant (Solid/Hollow)

Denier: 1-15

Cut Length: As per requirements

Colour: White / Off White

Speciality Fibres

RECYCLED POLYESTER STAPLE FIBRE - HYDROPHILIC

'Hydro' is a Greek word which means 'water'. The later portion is 'philic' which means 'attraction / loving'. Thus, hydrophilic means water-loving.

Hydrophilic material attracts and holds water. Hydrophilic materials are used for products that are made for absorption of liquids and moisture, but must retain the original strength and form.

Despite the fact that polyester fibre is extremely hydrophobic, we manufacture hydrophilic fibre from PCR waste which increases the water hydrophilicity of fibre and provides comfortable wearing. It has a bright future, as consumers increasingly are attracted by its easy-care properties.

Grade: Hydrophilic
Denier: 1.5 DN - 30 DN
Cut Length: 5 - 102 mm
Colour: White / Off White



The hydrophilic fibre is used in manufacturing of baby care products like baby diapers, women care products like sanitary napkins, pillows, facial wipes, adult nursing products, cleaning wipes, and medical and health supplies.

MODIFIED RECYCLED POLYESTER STAPLE FIBRE - EASY DYEABLE CATIONIC

This type of modified fibre is manufactured from polyester by mixing of few additives during the manufacturing process. These fibres easily mix with acrylic, cotton and other types of fibre. It is easily dyeable also on lower temperatures with cationic properties.

It is widely used in the spinning industry, both ring and open-end type spinning mills.



Grade: Easy Dyeable Cationic Fibre
Denier: As per requirement
Cut Length: As per requirement
Colour: Off White / White

MODIFIED RECYCLED POLYESTER STAPLE FIBRE - ACROFIL

The Acrofil fibre is offered in off-white and dyed (many colours) and replaces acrylic fibre. It increases bulkiness and is used to make bulk yarns. The cloth made from these yarns are fluffy, soft and bulky.

Grade: Acrofil Fibre
Denier: As per requirement
Cut Length: As per requirement
Colour: Off White / White



It is also used in various spinning industries, other than natural / man-made fibre, for more glossiness and brightness.

RECYCLED POLYESTER STAPLE FIBRE - MICRO

This fibre is a high quality product that absorbs water equivalent to 7 times of its weight and is more effective than traditional fibre.



The Micro Fibre is used to produce micro fibre cloth for cleaning screens, lenses & non scratchable

Grade: Micro Fibre
Denier: As per requirement
Cut Length: As per requirement
Colour: Off White / White

POLYPROPYLENE (PP) FIBRE

Polypropylene is the lightest fibre, even lighter than water. It is 34% lighter than polyester and 20% lighter than nylon. It provides more bulk and warmth for less weight. This polypropylene staple fibre is made from polypropylene (PP) by the melting, spinning, drawing, crimping, heat setting and cutting process.

It has high strength, good elasticity, wear resistance, good fluffiness, good antifouling ability and good hand feel. Also, the PP fibre comes with good electrical insulation and warmth. It is non-toxic, hence is not harmful.

Grade: PP

Denier: 2.5 - 15 DN

Cut Length: As per requirement

Colour: White

Tensile strength (gf/den): 3.5 to 5.5

Elongation (%): 40 to 100



Application	Industry
Cigarette Filter	Cigarette
Technical Filters	Wet filtration, chemical resistance, used in water, milk, paints, coatings, petrochemicals, pharmaceuticals, filtration
Ropes and Twines	Agriculture
PP Bale Warp	Synthetic Fibres
PP Tapes	Construction material like asphalt and concrete
PP Construction / Industry Fabrics	Construction materials like asphalt and concrete
Substrate Fabrics	Furniture fabrics as backing material. Also used for wall covering, luggage, table cloth, tarpaulin and automobile
Outdoor Applications	Sports
Non-electric Fuses for Initiating Explosives	Mining industry
Medical / Surgical Disposable Fabric	Hospital

Brand Owners' DELIGHT

For many, it's building a business that is sustainable; for us, it's making sustainability our business! For records, with initiation of its latest venture, the group accomplishes a signature performance of 100% utilisation of all contents received in PCR-PET business.

Pashupati Group's well-crafted solution system

with EPR compliance,
with the widest diversity in recyclates,
with systems imbedded for
detailed traceability,
with pan-India presence,
with decades of experience,
with quality that is well-accepted,
with a capacity that few can match,
with credibility that is proven

**surely adds on to enhancing
Brand Owners' delight!**



**PASHUPATI
GROUP**

— Quality • Innovation • Sustainability —

Corporate Office

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