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Your belief, Our future.

Passion for innovation and Sustainable living

Growing and Exploring since 1976

Environmental protection begins from little changes we make.



## \* 1 / OUR MISSION

**We seek to produce high-quality products through constant R&D and innovative challenges towards future value.**

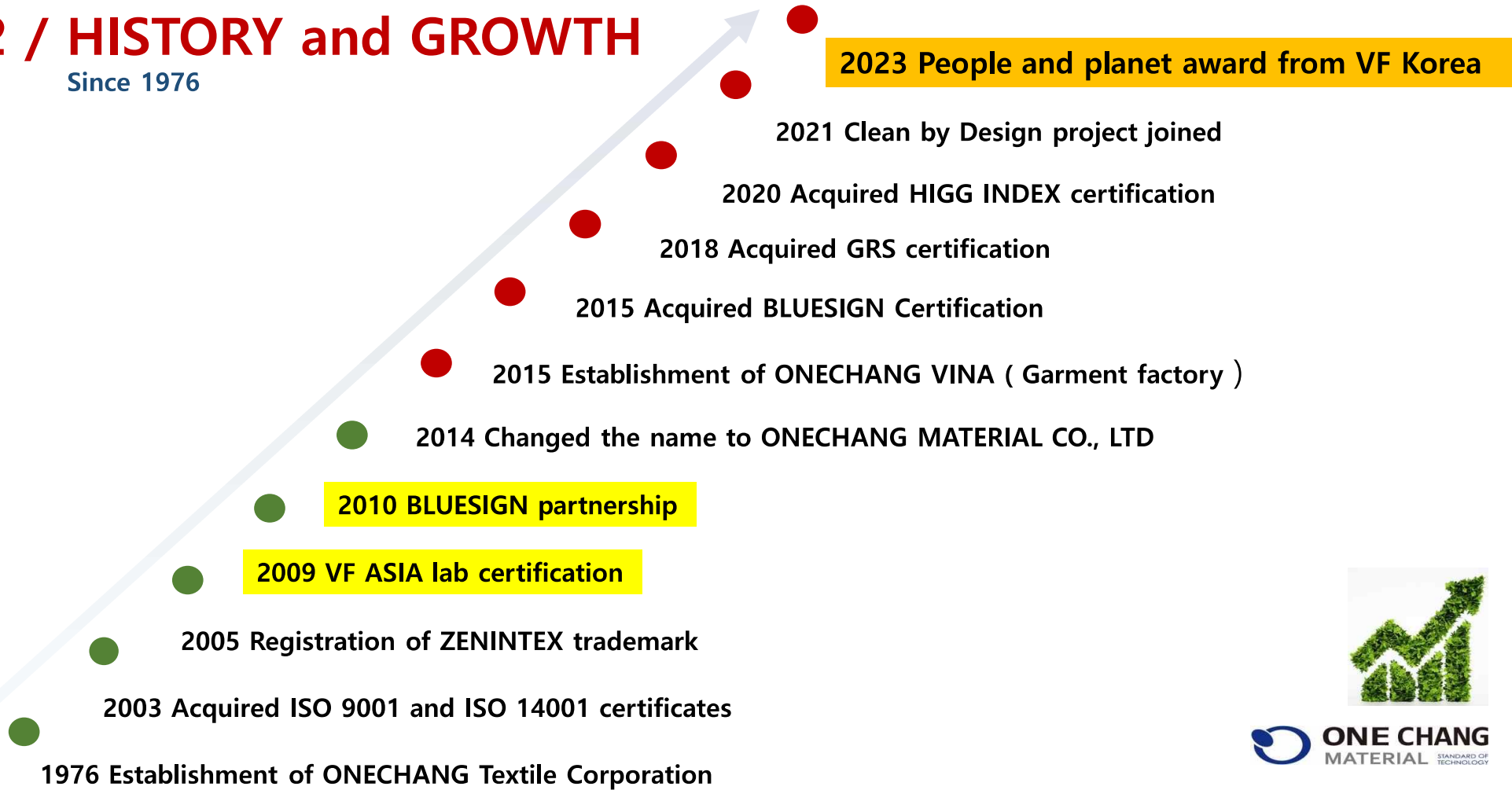


**Quality is our priority. We grow continuously over innovative ideas and manpower with expertise in fashion business.**

**We maximize the efficiency of our business with constant material development and active customer service. Our enterprising spirit pursues the improvement of society and the environment.**

## \* 2 / HISTORY and GROWTH

Since 1976



# \* 3 / BUSINESS STRATEGY

## 01. Textile Goes Greener

Continue to scale up our impacts to improve people's life  
 Under the banner of creation of future-oriented values and trust, we are devoted to better human life by sustainable business environment.  
 It is not only for value-added fashion products but our mutual growth with prospective strategy, now and into the future.



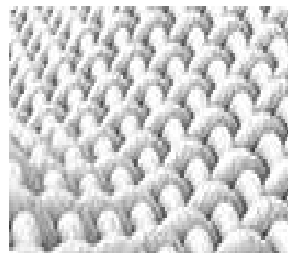
## 02. Production Goes Faster

**ONECHANG** pursues **ONE STOP** solution for fashion business. From textile weaving to garment making from our own mills, we could create vertical innovation to catch up speedy trend and customer's diverse requirement.

**CREATE**  
**ONE STOP solution !**  
**VERTICAL Innovation !**



Trend Research



Textile making



Eco finish



Garment making



## \* 4 / FACILITIES & CAPABILITY

### WEAVING MILL

Factory	No. of Machines	Maker/Type	Annual Capacity ( As standard 20 denier )
Building#1	99	Tsudakoma / W.J.L	6,200,000 YDS
Building#2	140 (Including <b>12 Double warp Beam Machines</b> )	Toyota / A.J.L	8,700,000 YDS
Building#3	81	Tsudakoma / W.J.L	5,100,000 YDS
Total	<b>320</b>	Sub Total : about 20,000,000 YDS ( 20 Denier ) 24,000,000 YDS ( 30 Denier ) 30,000,000 YDS ( 50 Denier )	

### DYEING MILL

Machine list	No.	Annual Capacity
Unpacking Machine	5	16,000,000 YDS
Washing Machine	2	
Jigger Dyeing Machine	17	14,000,000 YDS
Rapid Dyeing Machine	11	11,000,000 YDS
Total	32	25,000,000 YDS

### FINISHING MILL

Machine list	No.	Annual Capacity
Laminating & Bonding machine	2	3,500,000 YDS
Tension control Calender (Cire) machine	3	20,000,000 YDS





## 4-1 / FACILITIES and CAPABILITY in WEAVING

Factory	No. of Machines	Maker/Type	Annual Capacity ( As standard 20 denier )
Building#1	99	Tsudakoma / W.J.L	6,200,000 yds
Building#2	140 (Including <b>12 Double warp Beam Machines</b> )	Toyota / A.J.L	8,700,000 yds
Building#3	81	Tsudakoma / W.J.L	5,100,000 yds
Total	<b>320</b>	Sub Total :	about 20,000,000 yds ( 20 Denier ) 24,000,000 yds ( 30 Denier ) 30,000,000 yds ( 50 Denier )



## 4-2 / FACILITIES and CAPABILITY in DYEING MILL

Integration of technology and design

Creating the best in optimal production environment



Machine list	No.	Annual Capacity
Unpacking Machine	5	16,000,000 YDS
Washing Machine	2	
Jigger Dyeing Machine	17	14,000,000 YDS
Rapid Dyeing Machine	11	11,000,000 YDS
<b>Total</b>	<b>35</b>	<b>25,000,000 YDS</b>

## 4-3 / FACILITIES and CAPABILITY in FINISHING MILL

Special finishes towards high quality production



**TENSION CONTROL CALENDER MACHINE FOR  
DOWNPROOF FABRIC**



**HOTMELT TYPE LAMINATING MACHINE**

Machine list	No.	Annual Capacity
Laminating & Bonding machine	2	3,500,000 YDS
Tension control Calender (Cire) machine	3	20,000,000 YDS



# **ONECHANG international co., ltd.**

## **< APPAREL DIVISION in Vietnam >**



## **FACILITIES and CAPABILITY in Garment factory**

ONECHANG VINA produces woven wears such as outdoor jacket, down coat, sportswear and pants. We export special garment to the whole world including USA, Europe and Asia area. Vertical manufacturing fabric and garment.

<b>CAPACITY</b>	<b>700,000PCS / YEAR</b>
<b>PRODUCTION LINE</b>	<b>14 LINES</b>
<b>WORKS</b>	<b>800 EMPLOYEES</b>
<b>AREA</b>	<b>15,000 M2</b>

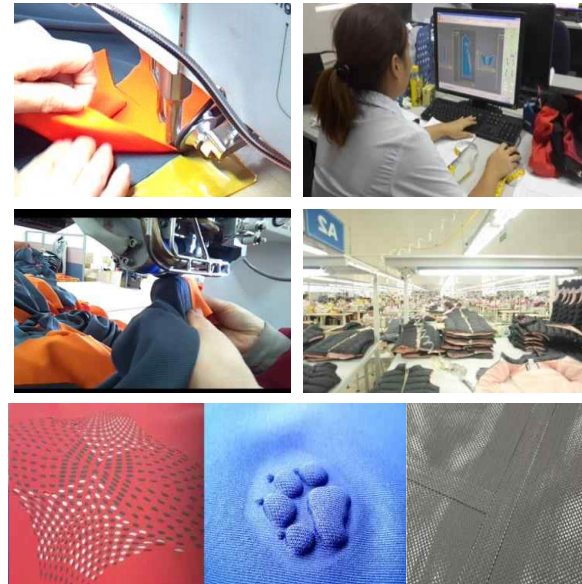


# GARMENT MAKING KNOW-HOW & SPECIALITY

Our creativity in the garment technology is our greatest asset.

- HIGH TECHNIQUE FOR DOWN JACKET
- LASER CUTTING
- PATTERN FORMER
- HIGH TECH WELDING
- SEAM SEALING MACHINE
- SEAMLESS GARMENT MAKING

- IN HOUSE PATTERN & SAMPLE ROOM
- ONE-STOP PROCESSING



# ECO FRIEND ENVIRONMENT

We are doing our best to build eco friendly environment

We comply with the laws and regulations of local authorities



## \* 5 / TEXTILE PRODUCT



BRAND	CATAGORY	BRAND	SUB BRAND	CHARACTERISTIC
ZENINTEX <sup>®</sup> <small>OUTSTANDING TECHNOLOGY</small>	DOWN PROOF	DRF	+UTR	7D,10D Ultra light weight
			+AIRZENIN DRF	12D ~ 30 Light weight Down
			+ZENIN DRF	40D & over Heavy Down
			+TUBUS DRF	Fine denier Double / Triple layer Down
	PROTECTION	AQUA-S	+AQUA-S	Lamination / coating for waterproof & breathable
			+NANO-SHELL	Electrospun membrane / high breathability
			+AQUA-LITE	10 denier light backer used
			+AQUA-OUTDRY	Face Lamination for waterproof
	STRETCH	TECHNO STRETCH	+PU	Elastane( PU )
			+MS	Mechanical Stretch
	LIFE STYLE	CASUAL MIXTURE	+NATURAL	Cotton-like, Wool-like
			+MELANGE	N/P mixed, CDP and TTD
			+PRINT	Sublimation, Screen, Pigment and DTP
	Eco-Friendly	RE-GREEN+	+UNIQUE TEXTURE	Special Texture & 3D effect
			+RECYCLE	Recycled Nylon & Polyester
	TECHNOLOGY	HYPER-TEC	+PFC FREE	Non-fluorine DWR
			+VOLT FREE	Anti-static special Yarn & Chemicals
+EXOHEAT			Warm biz product	
+BLACK HEAT			Warm biz from carbon compounds yarn	
+BREEZEN UV SHIELD+			UV CUT function	
		+BREEZEN	Cool biz product	



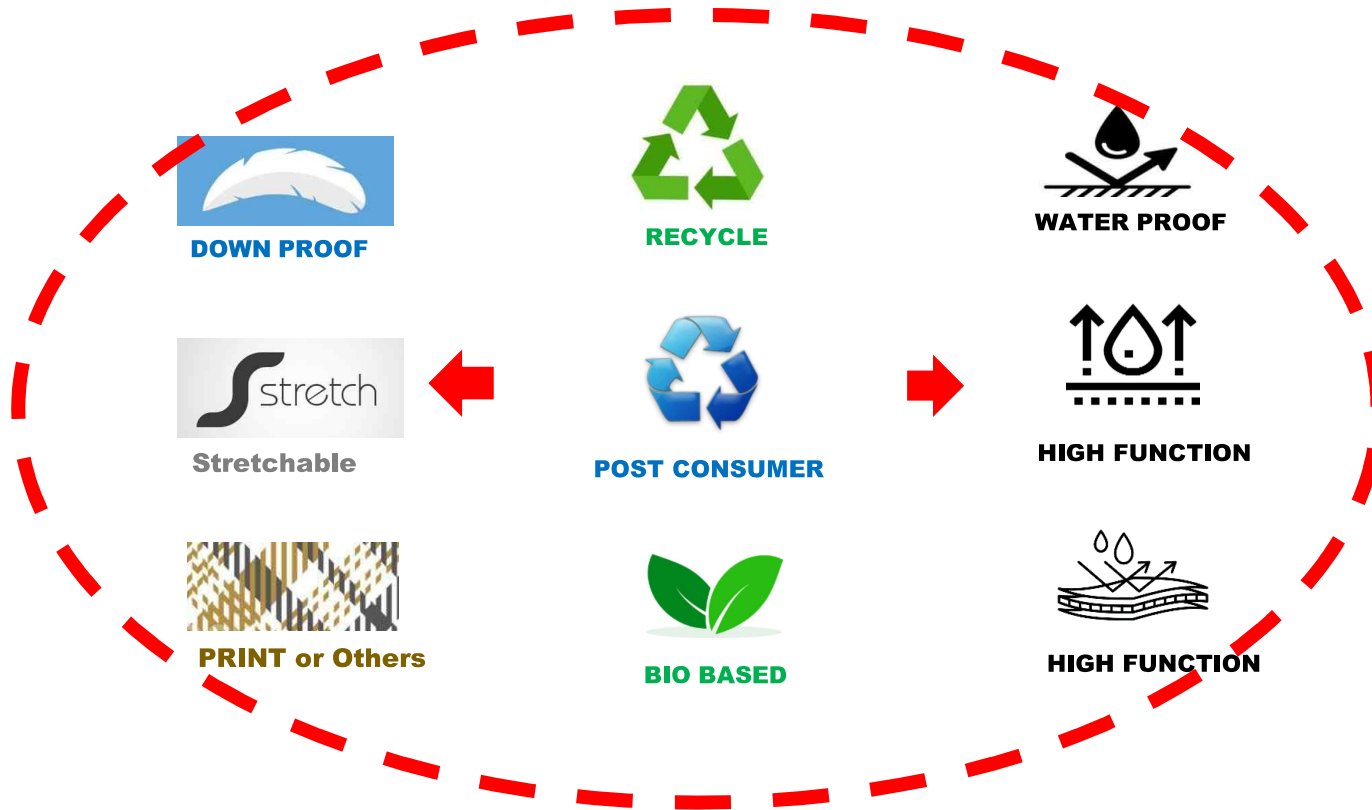
# 2025 FW Development Concept Map

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**< Strategic Product Map >**

Development of eco-friendly materials towards high quality production



# DRF + UTR ( ULTRA LIGHT )



**Back to the classic  
Premium down jacket**

< VALUE >

7D & 10D downproof / windproof  
with or without coating

Soft touch and air permeable

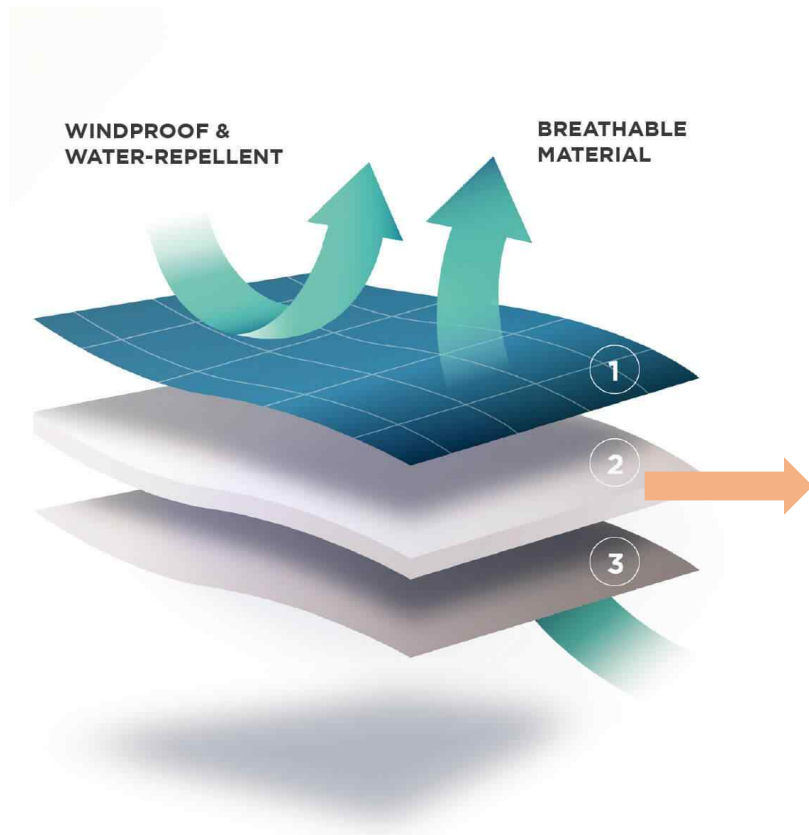
**Maintain tear strength ( > 2.0 lbf )**

**All PFC free DWR treatment**  
( over 70 points after 10 x wash)

**Control air permeability**  
Under 1.0 cfm initial & 4.0 cfm after  
10 x wash



# AQUA-NANO



\* **PFC FREE NANO web** high functional product

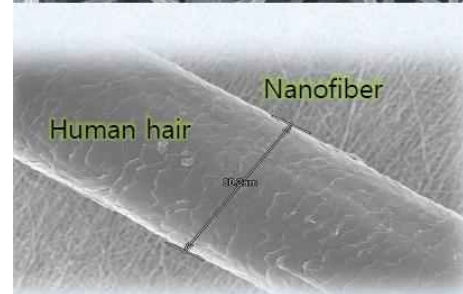
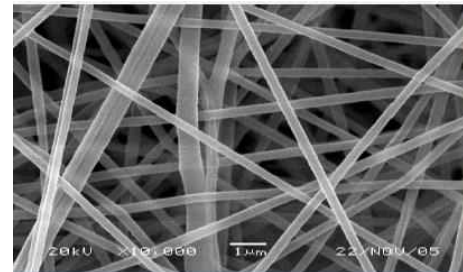
\* WP(ISO 811):  $\uparrow$  10,000 H<sub>2</sub>O (initial)

\* MVP(JIS L 1099 B-1):  $\uparrow$  40,000g/sqm.24hrs

• **A.P.(ASTM D737-18:2018):  $\uparrow$  0.17 cfm**

• **Weight: 5, 6, 7g/sqm**

< Nano membrane: electrospinning method >

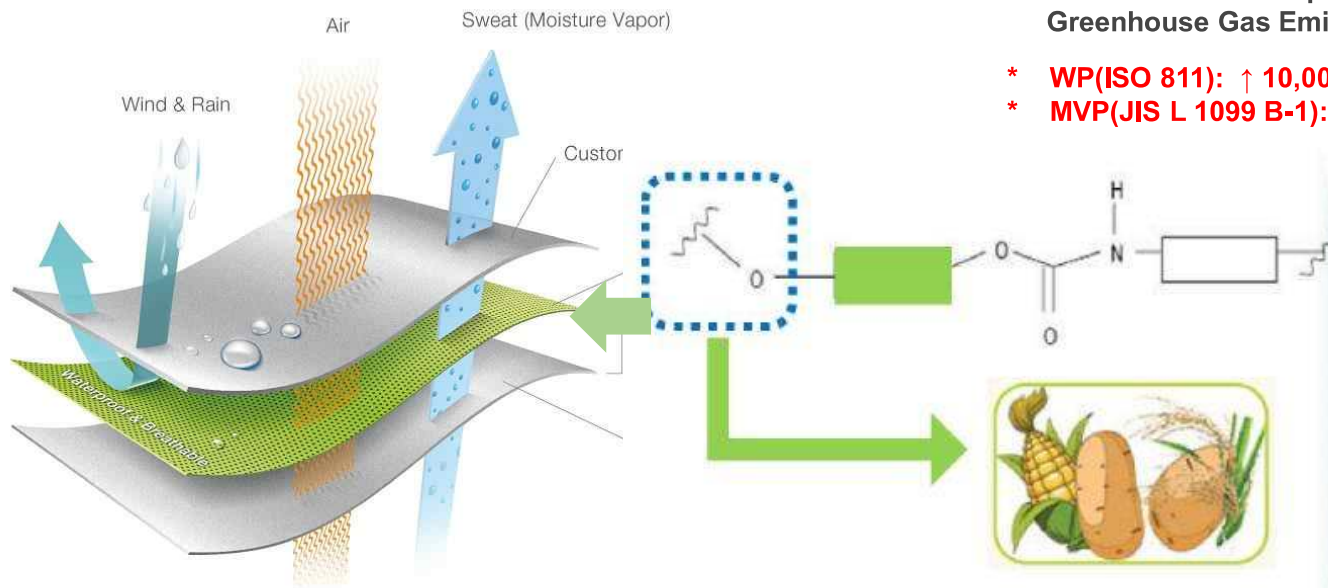


# AQUA-BIOZENIN (27, 44, 70%)



< VALUE >

- \* Bio-based PU membrane
- Bio-based carbon content: 25~ 44%
- The low carbon footprint helps make the product more sustainable & Greenhouse Gas Emissions.
- \* **WP(ISO 811): ↑ 10,000 H<sub>2</sub>O (initial)**
- \* **MVP(JIS L 1099 B-1): ↑ 10,000g/sqm.24hrs**

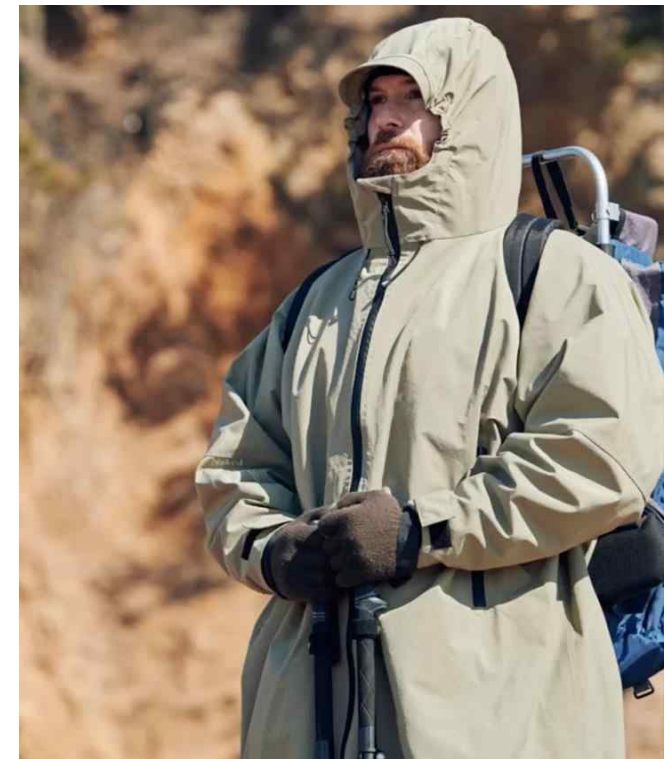


# HYPER TEC + CODURA RECYCLE

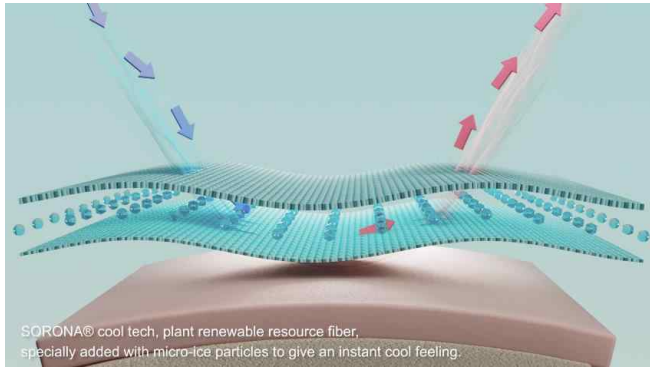
## Maintaining High Tenacity & Durability with sustainability



- Made from reclaimed pre-consumer waste materials during manufacturing process
- Rugged- excellent resistance to abrasion and scuffs
- Strong- excellent resistance to tearing
- 100% pre-consumer recycled nylon-6,6
- Any woven construction- typically plain, ripstop, dobby
- Ideal for use in variety of productions including apparel, reinforcements, outerwear



# HYPER ICE



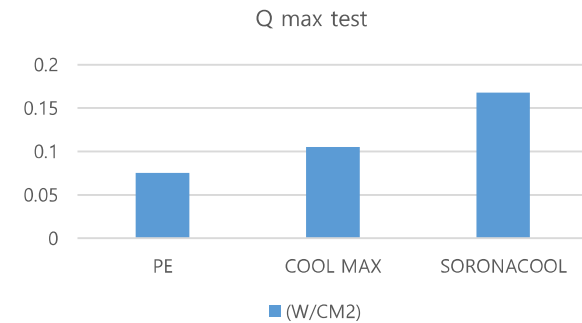
- \* Long – Lasting stretch and recovery
- \* Dry and comfortable



Cool touch fabrics with Sorona polymer offer exceptional stretch and recovery, added ultra-micro particles give you an instant cool touch while you exercise

< Qmax Test result >

1. 2023-143-AW (NORMAL PES)- 0.075 (W/cm<sup>2</sup>)
2. CPS8038 (COOLMAX) – 0.105 (W/cm<sup>2</sup>)
3. 2023-135-AWSF (SORONAL COOL) – 0.168 (W/cm<sup>2</sup>)



# TECHNO STRETCH



TECHNO STRETH / CREORA COLOR+ has unique property with excellent dyeability and colorfastness in blends with nylon, which is dyed with acid dyestuff. It can reduce uneven color on textile product, and make color of fabrics deeper and more vivid.



< VALUE >

- Extraordinary color reflection
- deeper & darker color shades in blend with Nylon
- **Better colorfastness after washing**
- Elimination of grin-through
- Available use Creora bio-based



# SILENT + BREATHABLE DOWN PROOF COATING ( ULTRA SOFT )



Premium down jacket  
DTY, Stretch down

< VALUE >

Soft , Silent, Breathable downproof /  
windproof with micro porous  
coating

Soft touch and air permeable

Maintain tear strength ( > 2.0 lbf )

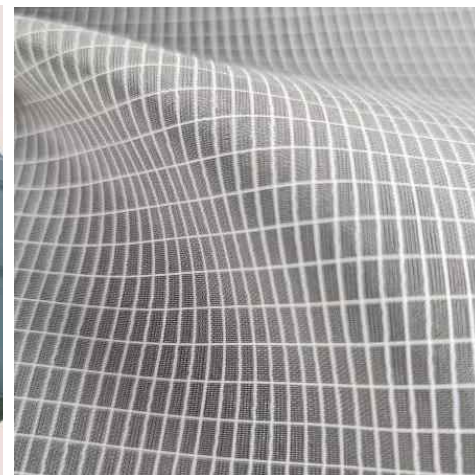
All PFC free DWR treatment  
Micro Porous soft coating  
( over 70 points after 10 x wash )

Control air permeability  
Under 1.0 cfm initial & 4.0 cfm after  
10 x wash



**SOFT DOWN PROOF COATING**

# DURABLE + LIGHT 2024 NEW



Proposal of high-tenacity light weight materials suitable for outdoor activities

**Low-denier ( 20,50) grade materials** can be supplied, compared to ROBIC ( 70,100,210), RARAMID( 400,840 ), DYNEEMA 200, 305, 392)

	Item	Finish	Yarn Spec	Tear strength
PE ( MOS6 )	2023-198-CA	C0 DWR / Calendering	N/DTY 20/7 SD+P/DTY 50/72 SD(Recycle) X N/DTY 20/7 SD+P/DTY 50/72 SD(Recycle)	<b>2.9 / 2.1bf</b>
UHMWPE mixed	2023-229-BC	C0 DWR / Back Heavy Cire	N/F 20/6 FD+ <b>PE</b> /F 50/30 BRT X N/F 20/6 FD+ <b>PE</b> /F 50/30 BRT	<b>6.9 / 6.3bf</b>

< **STRENGHT COMPARISON** > \* UHMWPE: Ultra High Molecular Weight Polyethylene

# COMFORT & STANDARD ( POLYESTER )



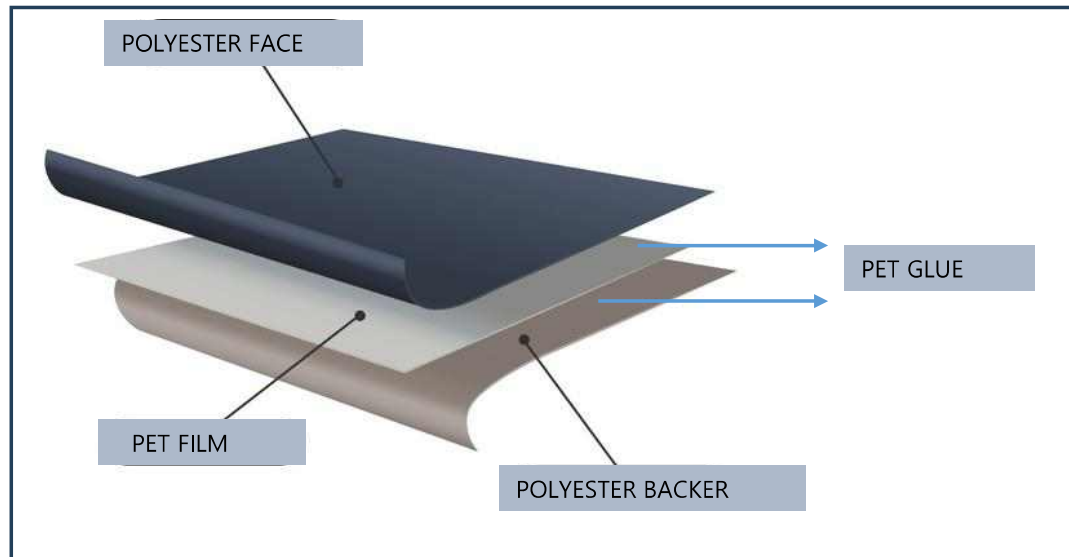
Materials with various textures and processing to increase the applicability to buyers' styles  
Comfortable, but up to the standard and for casual outdoor use

< Strength Properties Requirement ( UNIT : lbf ) >

Requirements	21- 40D	41 - 75D
Tensile Strength - Warp Direction	80	90
Tensile Strength - Fill Direction	70	80
Tear Strength - Warp Direction	2.8	3.3
Tear Strength - Fill Direction	2.5	3.0

# MONO CONTENT ( 100% TEXTILE RECYCLING ) 2024 NEW

MONOMATERIAL, Composed of recycle PES on the face and back, recyclable PET glue and membrane.

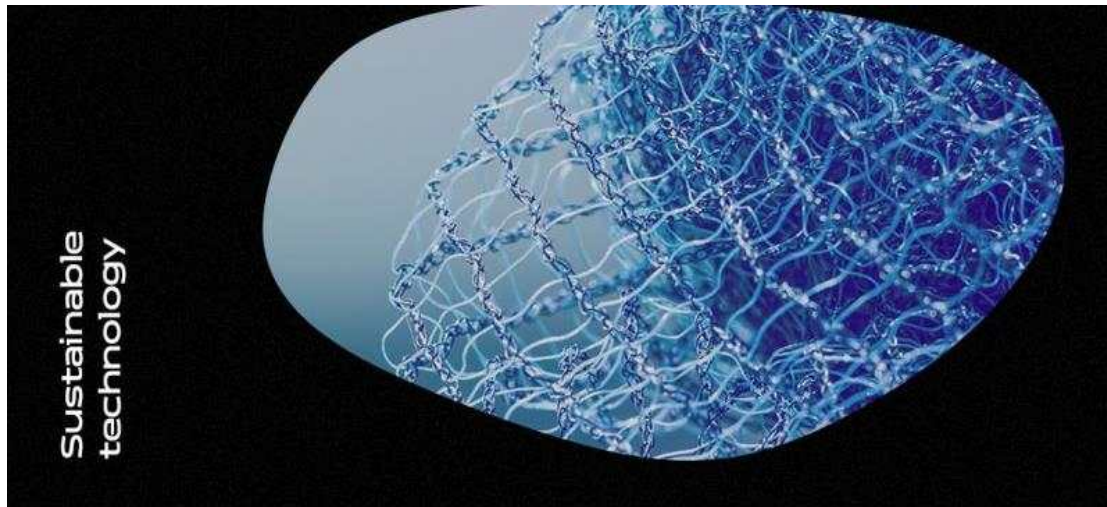


## Target Performance

Property	Test method	Performance
Water Repellency	AATCC 22	≥90 points (initial), ≥70 points (after 20 x wash)
Low Range Hydrostatic	AATCC 127	≥2,000mm (after 20 x wash)
High Range Hydrostatic	ASTMD751	≥25 psi (after 20 x wash)
MVTR (Upright cup)	ASTM E 96B	≥600g/sqm 24hrs (13mm & 19mm air gap)
MVTR(Inverted cup)	JIS L1099 B-1	≥3,000g/sqm 24hrs

# RE-GREEN+ POST CONSUMER

The 150 million tones of plastic are dumped into our oceans every year that include plastic lines, ropes and net used by the fishing industry



- GRS Certified
- Post-consumer recycled Nylon
- Using waste fishing nets from Ocean
- Depolymerized Nylon chip, same quality with virgin Nylon
- Collection – Chemical Recycling – Creation
- Clean up our oceans



# BIO ZENIN – BIO BASED **NEW**

## Bio based Nylon 5.10

- \* Nylon made from raw materials extracted from **corn and castor oil**
- \*100% renewable raw material**

Bio-based Nylon reduces carbon footprint by replacing petroleum-based raw materials with Sustainable materials and also reduces reliance on non-renewable resources

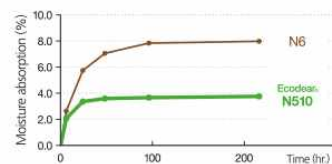


Bio-based Nylon is made from cadaverine(Corn) and sebacic acid (Castor oil) from 100% Bio-mass



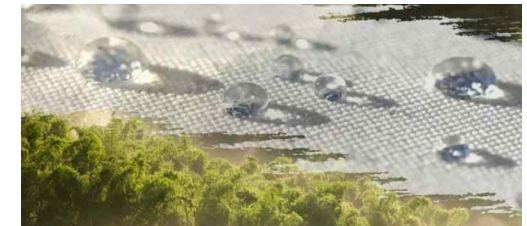
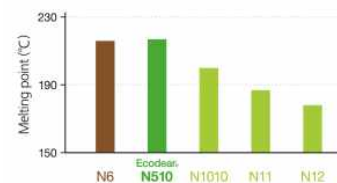
### Dimensional Stability

Low moisture absorption helps to keep dimensional stability.

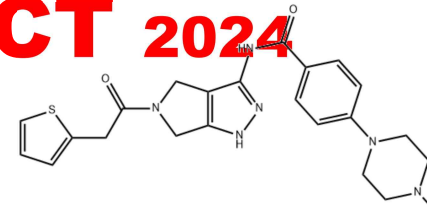


### Thermal Resistance

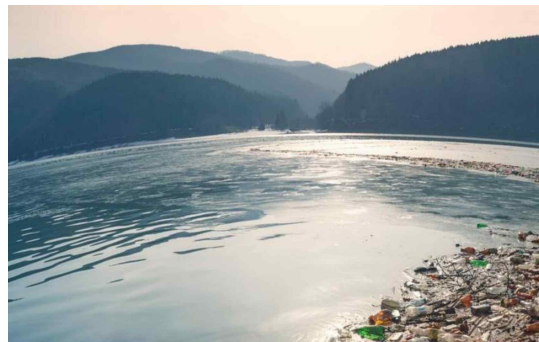
Ecodear. N510s heat resistance is much the same as the existing Nylon6.



# INNOVATION / RPRODUCT 2024



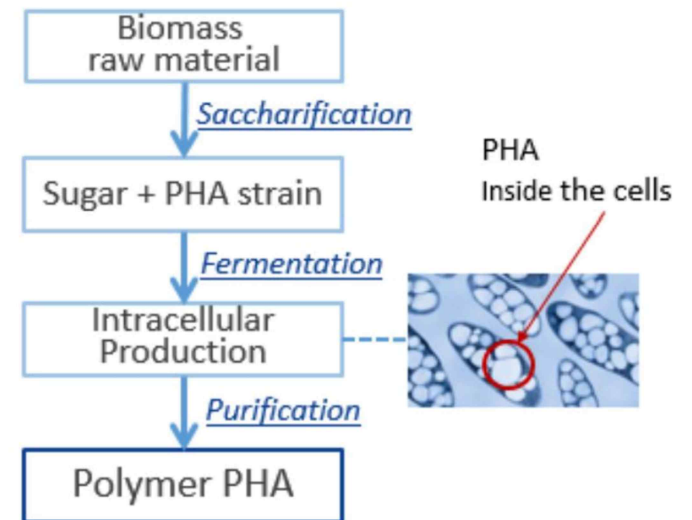
**PHA** : Natural polymers made through microbial fermentation



Biodegradable	PBS, PBSA	PHA
	PBAT PCL	Cellulose Starch
Compostable	PBS, PBSA	PLA, PHA
	PBAT PCL	
Non-Biodegradable	Conventional	Bio-PE
	Polymers : PE, PP, PS etc	PA11, PA6, PDO
	Petro-based	Bio-based

⬡ : 생분해성 플라스틱

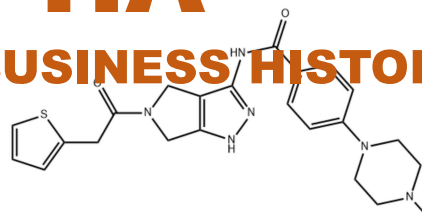
## [PHA Production]





# PHA

## BUSINESS HISTORY



**Compostable Biopolymer Solution**



**Establishing a platform that enables circular and sustainable solutions by combining world-class bioprocess scale and microbial metabolic engineering technology portfolio**

- **2016/ CJ**  
Acquired the technology and facilities of Matabolix in Massachusetts, USA, a leading company in PHA technology
- **2020 / CJ**  
Construction of a 5,000 ton/year PHA plant in indonesia
- **2023**  
developing PHA textile products through corperation between CJ and ONECHANG



# INNOVATION / PHA

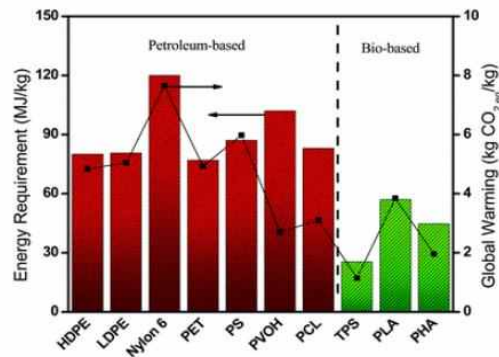
Only PHA can perform the marine biodegradation

✓ = yes / X = no

Product <sup>1)</sup>	Biodegradability			
	Industrial	Home	Soil	Marine
PLA	✓	X	X	X
PBS	✓	X	X	X
PBAT	✓	X	X	X
TPS	✓	✓	✓	X
aPHA	✓	✓	✓	✓
scPHA	✓	✓	✓	✓

Conditions of Biodegradability	
TYPE	CONDITIONS
Industrial	Composting facilities, Microbe, Oxygen at 58°C
Home	Backyard(Home) landfill, at 28°C
Soil	Field, forest, soil at 25°C
Marine	Sea at 30°C

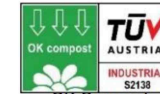
1) PLA (Poly Lactic acid), TPS (Thermoplastic Starch), PBAT (Polybutylene co-adipate co-terephthalate), PBS (Polybutylene Succinate), PHA (Polyhydroxy alkananoate, aPHA: amorphous / scPHA: semi crystalline)



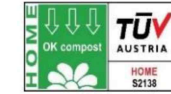
< GWP comparison >

## Biodegradability Certificate

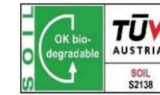
✓ Complete



OK Compost Industrial



OK Compost Home



OK Biodegradable Soil



OK Biodegradable Marine



BPI Compostable



Biodegradable Plastics  
JBPA (A46001)



Seeding / DIN EN 13432



Industrial compostable  
by DinCertco

## Bio based Certificate

✓ Complete

Biobased 100%  
by Vincotte

Biobased 100%  
by DinCertco

BioPreferred by USDA

In Progress

Biobased 100%  
by DinCertco

Biomass by JBPA

# INNOVATION / FACILITY 2024

	Renewal	Benefit
Weaving mill	set up one more Auto drawing-in machine ( current 1 --> 2 machines)	shortening weaving lead-time
	24 old water-jet looms were exchanged to new looms	decreasing greige defect rate and increasing weaving efficiency
	12 new water - jet looms with wider width(2,300 mm width type) will be prepared by July, 2024. 18 new air - jet looms with 2,300 mm width. <b>(current 20 --&gt; 50 wide width type machines)</b>	wider width <b>stretch fabrics can be available</b> (maximum 89 inches in greige )
Dyeing mill	3 new rapid dyeing machines replace old machines	lower water consumption (2.5~3KL --> 0.8~1KL / dyebath)
	<b>will set up a continuous scouring machine (boil off)</b>	<b>improving capacity, efficiency and more stable qualities, especially for stretch items</b>
	set up new CCK in tentering machines	automatically dispensing DWR, wicking, auxiliary agents and other chemicals.
Laminating mill	<b>polyester glue for polyester mono content including membrane</b>	<b>mono content for textile recycling</b>
Coating mill (subcontractor)	set up 3 low range Hydrostatic pressure testing machines (previous 2 machines)	maintaining the consistency of waterproofness in bulk production

\* 6 / Global Business Partner





**Go Green Business!**

