

The background is a close-up photograph of green grass blades, each with a small, clear water droplet at its tip. The lighting is soft, creating a bokeh effect in the background.

SEREFON

基 于 想 象      物 于 美 好





# Serefon™ - Perfect combination of Biobased and PU



**Serefon™**—A new biobased brand established by Huafon Group, committed to becoming a pioneer and leader in the biobased PU industry

## Brand Philosophy

Originating from nature, Embrace better future

## Core Value

Sustainable, Environmentally friendly, Biobased, Green Future

## Brand Vision

Become a world-class biobased PU material supplier



# R&D History



**2 years** of R&D exploration

**80 million** capital investment

**15** Engineers in R&D Team

More than **65%** of masters

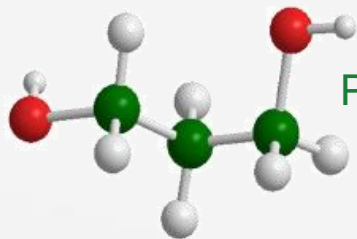
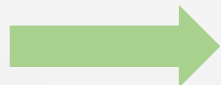


# Biobased Chain



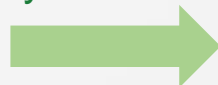
Industrial Corn

Fermentation



Biobased PDO

Polymerization



Biobased Polyols



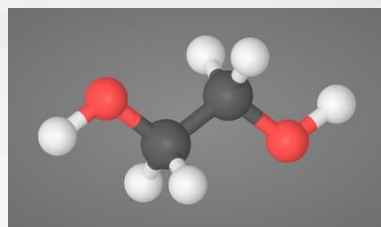
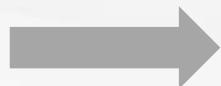
Replace



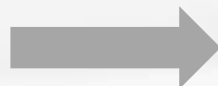
Biobased Sole



Petroleum



Chemicals



Polyols







# Industrial Chain

On June 1, 2022, Huafon Group officially acquired the bio-based product-related business and technology spun off by DuPont, and established **Covation Biomaterials**. Including Susterra® and Zemea® Production Sites (PDO) in Tennessee, USA and Sorona® Production Site (PTT) in North Carolina, USA.





# Serefon™ Technology Advantages



## Reactive Addition

- Biobased materials produce PU chemical bonds through polymer chemical reactions, and the product performance is more stable.

## Leading Technology

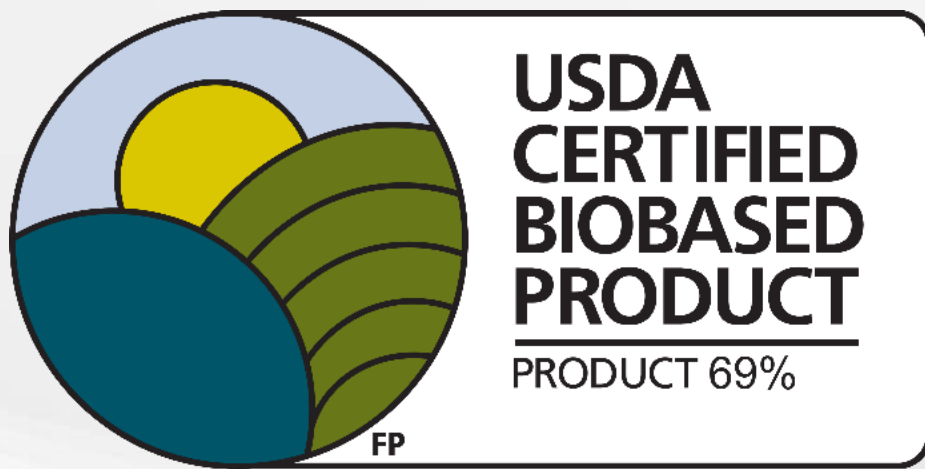
- Using the world's leading Susterra® biobased technology
- Sufficient R&D technology reserves

## High Quality Assurance

- Mature Serefon™ product system
- Stable raw material supply chain guarantee



# Biobased Certification



## USDA BioPreferred Program certificated

Serefon™ currently has **9** bio-based products with a biobased content  $\geq 22\%$  that have been certified by the USDA BioPreferred Program. **11** biobased products have been tested by the BETA laboratory and meet the product description.





# Serefon™-Insole



## Biobased Content

11%/25%/50%/65%

## High Rebound

Resilience is more than 30% better than traditional insoles

## Better Physical Properties

Tear strength is more than 30% better than traditional insoles

## High Formula Tolerance

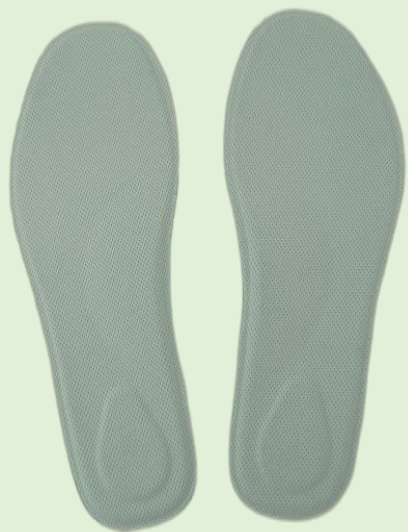
Both traditional production line and PP board line can be produced

**S**EREFON





# Serefon™ -11% Biobased Content



JF-P-586-11/JF-I-696

**Polyester based**

- Density: 0.30-0.35 g/cm<sup>3</sup>
- Compression Set: ≤5 %
- Hardness: Shore C 25-30
- Resilience: ≥35%
- Good operability

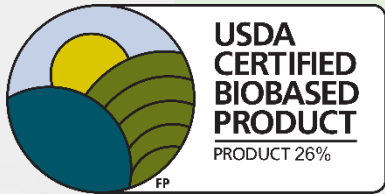


JF-P-596-11/JF-I-696-50

**Polyether based**

- Density: 0.27-0.30 g/cm<sup>3</sup>
- Compression Set: ≤5 %
- Hardness: Shore C 25-30
- Resilience: ≥40 %
- Lower Density, Better Rebound

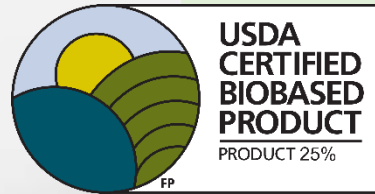
# Serefon™ -25% Biobased Content



JF-P-586-25/JF-I-696

**Polyester based**

- Density: 0.30-0.35 g/cm<sup>3</sup>
- Compression Set: ≤5 %
- Hardness: Shore C 25-30
- Resilience: ≥45%
- Good Physical Properties



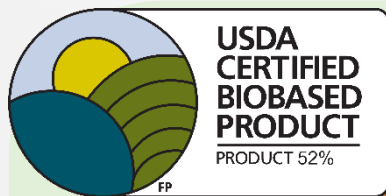
JF-P-596-28/JF-I-696

**Polyether based**

- Density: 0.27-0.30 g/cm<sup>3</sup>
- Compression Set: ≤5 %
- Hardness: Shore C 18-22
- Resilience: ≥40 %
- Brand preferred



# Serefon™-50% Biobased Content

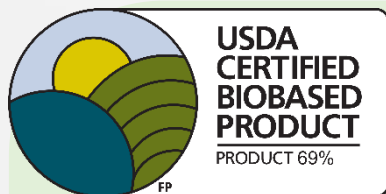


JF-P-596-50/JF-I-696-50

Polyether based

- Density: 0.25-0.30 g/cm<sup>3</sup>
- Hardness: Shore C 25-30
- Compression Set: ≤5 %
- Rebound: ≥50 %
- High value-added

# Serefon™ -65% Biobased Content



JF-P-596-65/JF-I-696-50

Polyether based

- Density: 0.26-0.30 g/cm<sup>3</sup>
- Hardness: Shore C 25-30
- Compression Set: ≤10 %
- Rebound: ≥50 %
- High Biobased Content





# Serefon™ - Open Cell Foam



## Biobased Content

11%/25%

## Low Deformation

Compared with traditional products, the compression deformation is increased by 50%

## High Toughness

Tensile strength and tear strength is more than 20% better than traditional products

## Good Rebound

Resilience is more than 20% better than traditional products



# Serefon™-11% Biobased Content



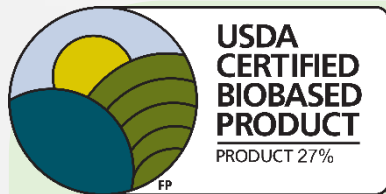
JF-P-716-10/JF-I-632+JF-I-635

Polyether based

- Density: 0.11-0.15 g/cm<sup>3</sup>
- Hardness: Shore C 25-30
- Compression Set: ≤5 %
- Rebound: ≥30 %
- Light and Breathable



# Serefon™ -25% Biobased Content



JF-P-716-25/JF-I-632+JF-I-635

Polyether based

- Density: 0.11-0.15 g/cm<sup>3</sup>
- Hardness: Shore C 17-35
- Compression Set: ≤5 %
- Rebound: ≥30 %
- Soft and skin-friendly



## Biobased Content

22%/25%/50%/70%

## High Rebound

Resilience  $\geq 50\%$

## Low VOCs

Lower VOCs than other midsoles

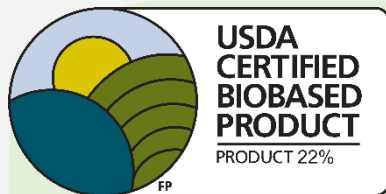
## Mature Formula

TPU Vacuuming Film

Spraying



# Serefon™ -22% Biobased Content



JF-P-586-25/JF-I-9020

Polyester based

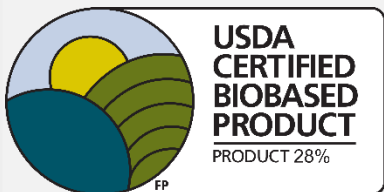
- Density: 0.35-0.50 g/cm<sup>3</sup>
- Hardness: Shore C 45-60
- Tensile Strength:  $\geq 2.3$  MPa
- Elongation:  $\geq 400$  %
- Angle Tear Strength:  $\geq 9.2$  kN/m
- Split Tear Strength:  $\geq 1.4$  kN/m
- Rebound:  $\geq 40$  %
- Good operability



# Serefon™ -25%/50%70% Biobased Content

JF-P-760-25/JF-I-860

25%/Polyether based



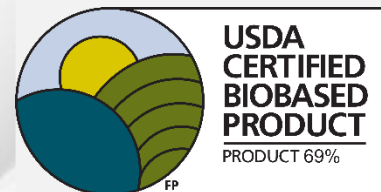
JF-P-760-50/JF-I-860

50%/Polyether based



JF-P-760-70/JF-I-860

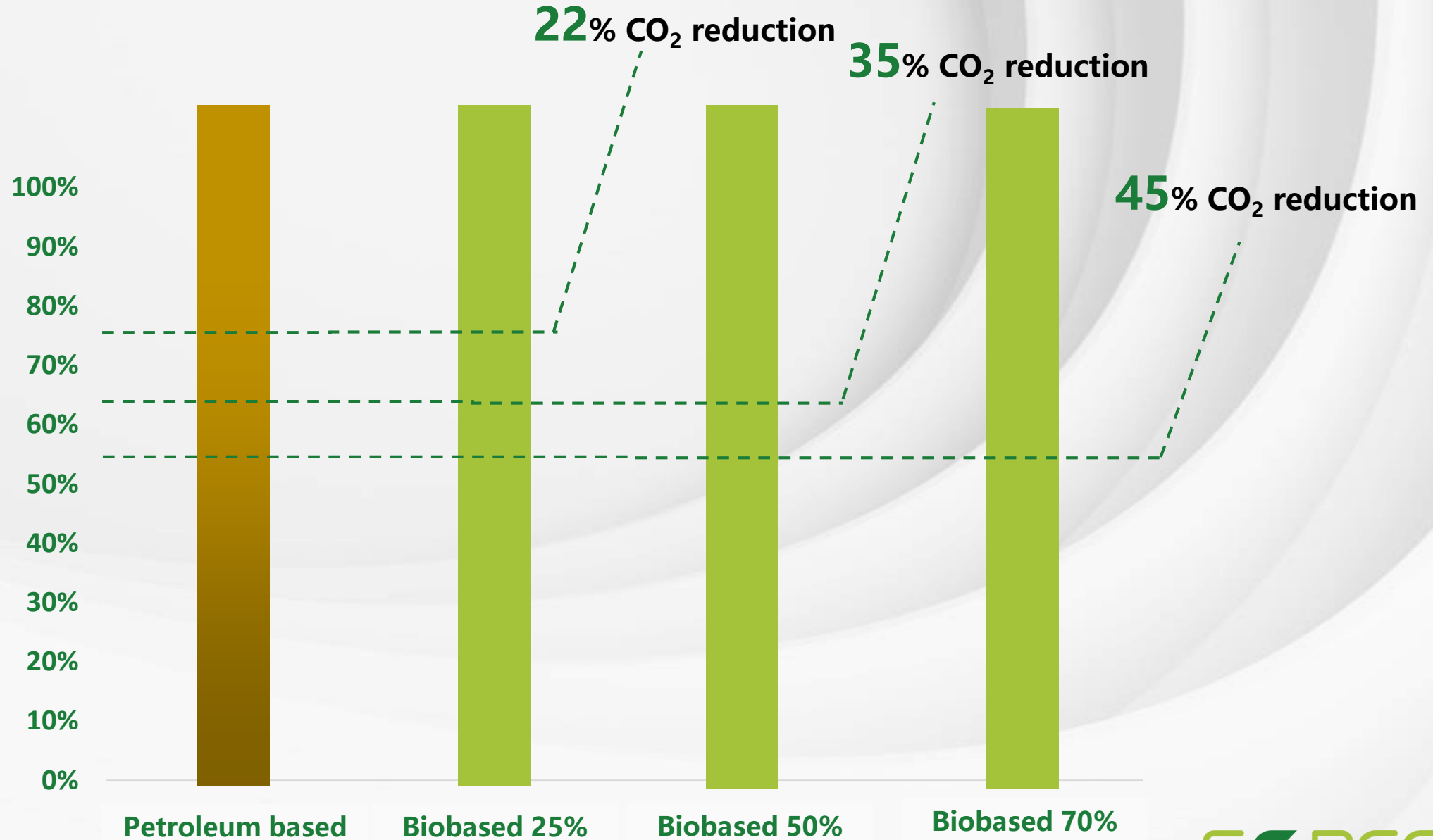
70%/Polyether based



- Density: 0.30-0.40 g/cm<sup>3</sup>
- Hardness: Shore C 50-60
- Rebound: ≥50 %
- Compression Set: ≤5.0%
- High Rebound



# CO<sub>2</sub> Emission Comparison



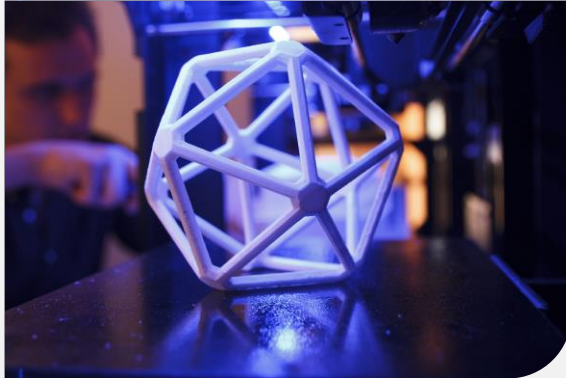




# Future Outlook

## 3D Printing

Healthcare  
Model



## Clothing

Underwear  
Swimsuit



## Automobile

Seat  
Pipe



## Spraying

Fully covered without  
air holes





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—— New Materials New Life ——