Lamberti comprehensive approach to face the food contact paper challenge

IPACK-IMA MILANO 2025

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Product Manager Barrier Coating

Agenda

IPACK IMA MILANO 2025

01 **Lamberti expertise & solutions**

02 **The technology behind barrier coatings**

03 **Products and technologies**

04 **Inspired by nature**

01_Global Presence

01_Our technological expertise

Natural polymers

Carboxymethyl cellulose and hydrocolloids

Waterborne synthetic polymers

Acrylic and polyurethanes

Oleochemicals and fatty derivatives

Polymer beads

Acrylic and polyurethanes

Hydroxyapatite

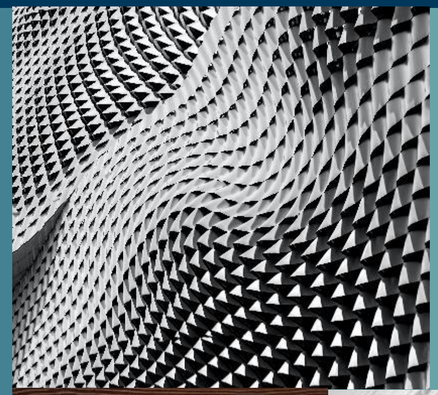
Active ingredients

For cosmeceuticals

01_Surface Treatment markets

Sustainability targets

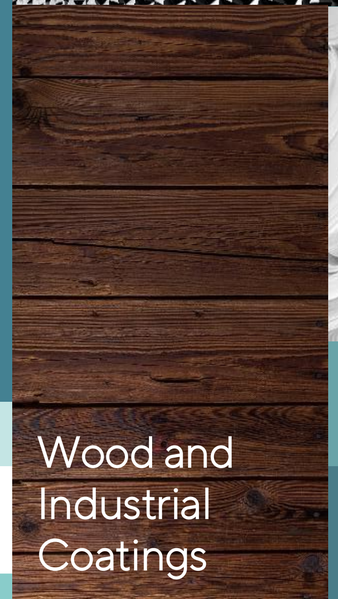
- Reduce the climate change impact: CO_2 emissions
- Avoid introduction of fossil Carbon and extend life of treated articles
- Reduce waste and impact on natural resources: water and microplastic
- Avoid toxic and polluting impurities releases (VOC, RSL, SVHC)



Architectural Coatings

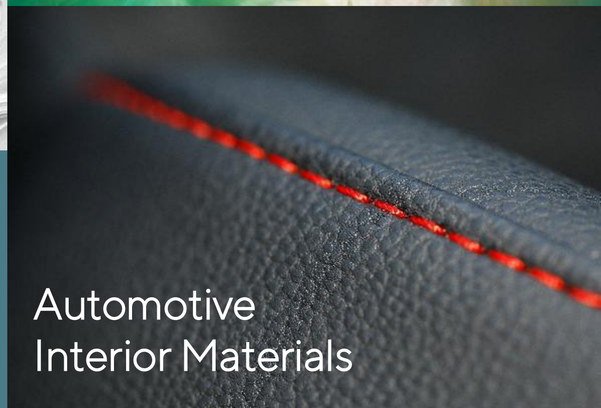
Leather Materials

Digital Inks



Wood and Industrial Coatings

Paper & Packaging



Automotive Interior Materials

02_Packaging materials challenges

Materials characteristics:

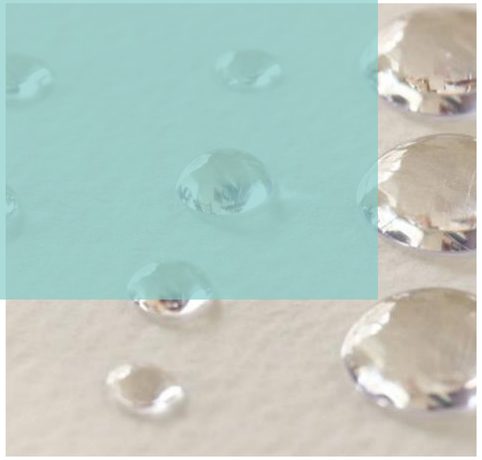
- Different material structures and performance: Cellulosic vs Plastics
- Different manufacturing processes: laminations, thermosealings, coatings, printing
- Shelf life and durability of goods, barrier performance to water, vapour, Mineral Oil, oxygen

Environmental challenges:

- Persistence in the environments: PFAS free, Microplastics
- Reduction of impact on climate change, LCA and Product Environmental Footprint
- EcoDesign: reuse, recycle, biodegradability or compostability as ultimate option

03_Products and technologies

Barrier Coating



FULLY SYNTHETIC
Esacote BC

Fully Synthetic

HYBRIDS: BIO+SYNTHETIC
Esacote BIO BC

Waterborne Biobased

From NATURAL raw materials & PLASTIC FREE

Fully natural & plastic free

Waterborne Biobased

03_Barriers segmentation

Water, oil and grease

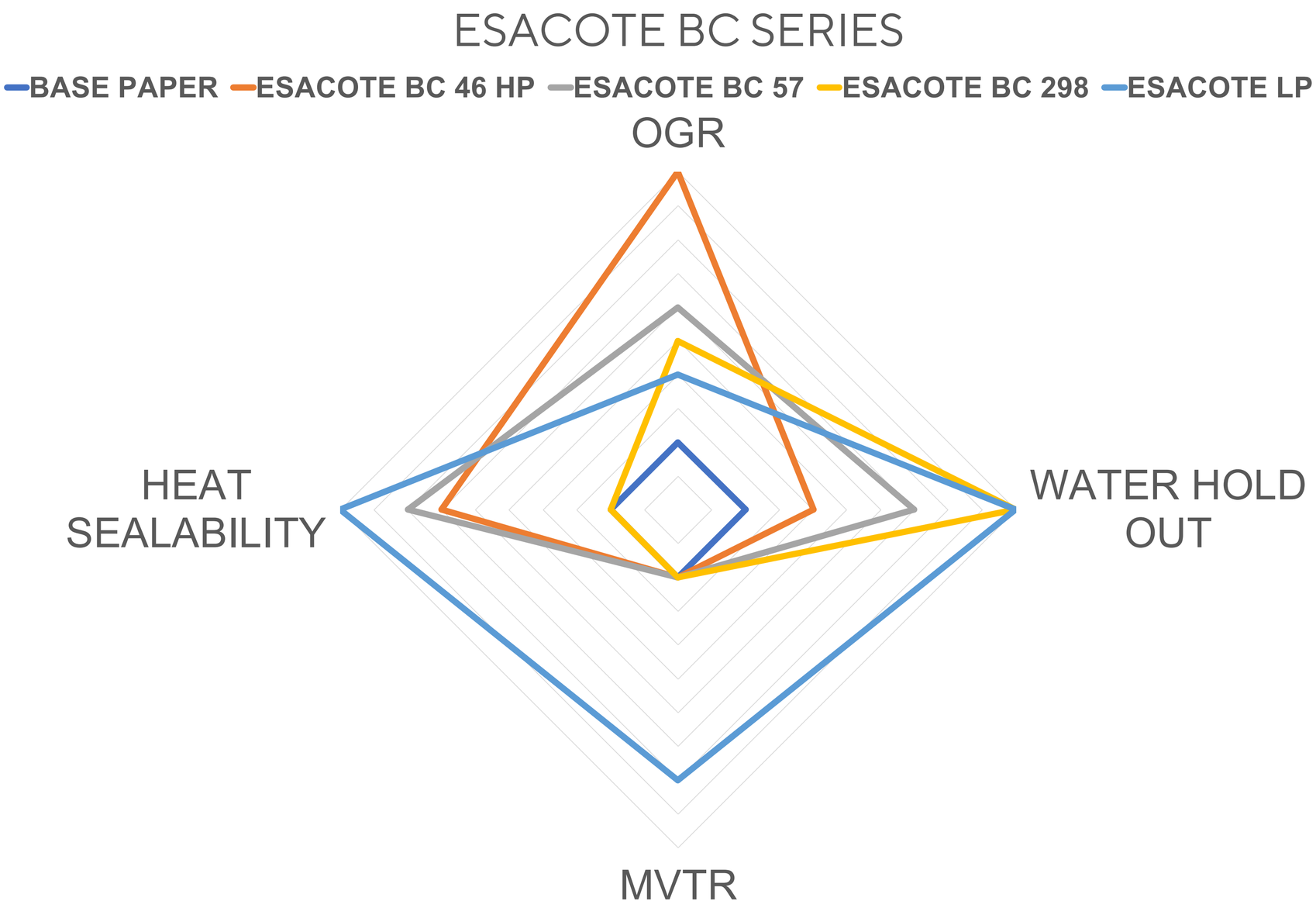
WVTR
MOSH/MOHA

O_2, Aroma

03_ Our Waterborne Family for Barrier Coatings

Product Class	Product Name	OGR	Water hold out	Water vapour	Mineral oil	Sealability
Synthetic	Esacote BC 46 HP	●				●
	Esacote BC 57	●	●			●
	Esacote SF 82	●	●			●
	Esacote BC 298		●			
	Esacote BC 577	●	●	●		●
	Esacote LP 11		●	●		●
Hybrid Bio & Synthetic	Esacote BIO BC 25	●			●	●
	Esacote BIO BC 50	●			●	
	Esacote BIO BC 5025	●			●	
Natural Material chemically modified	Esacote NT	●			●	
	Carbocel DP 100 N	●				
Plastic Free	Esacote BIO BC 100	●	●	●	●	●

03_ESACOTE BC SERIES: Properties & Barriers



03_Application tips

Full synthetic resins

Thickeners

PUD & PAC based

Defoamers

- Defoamers are mandatory

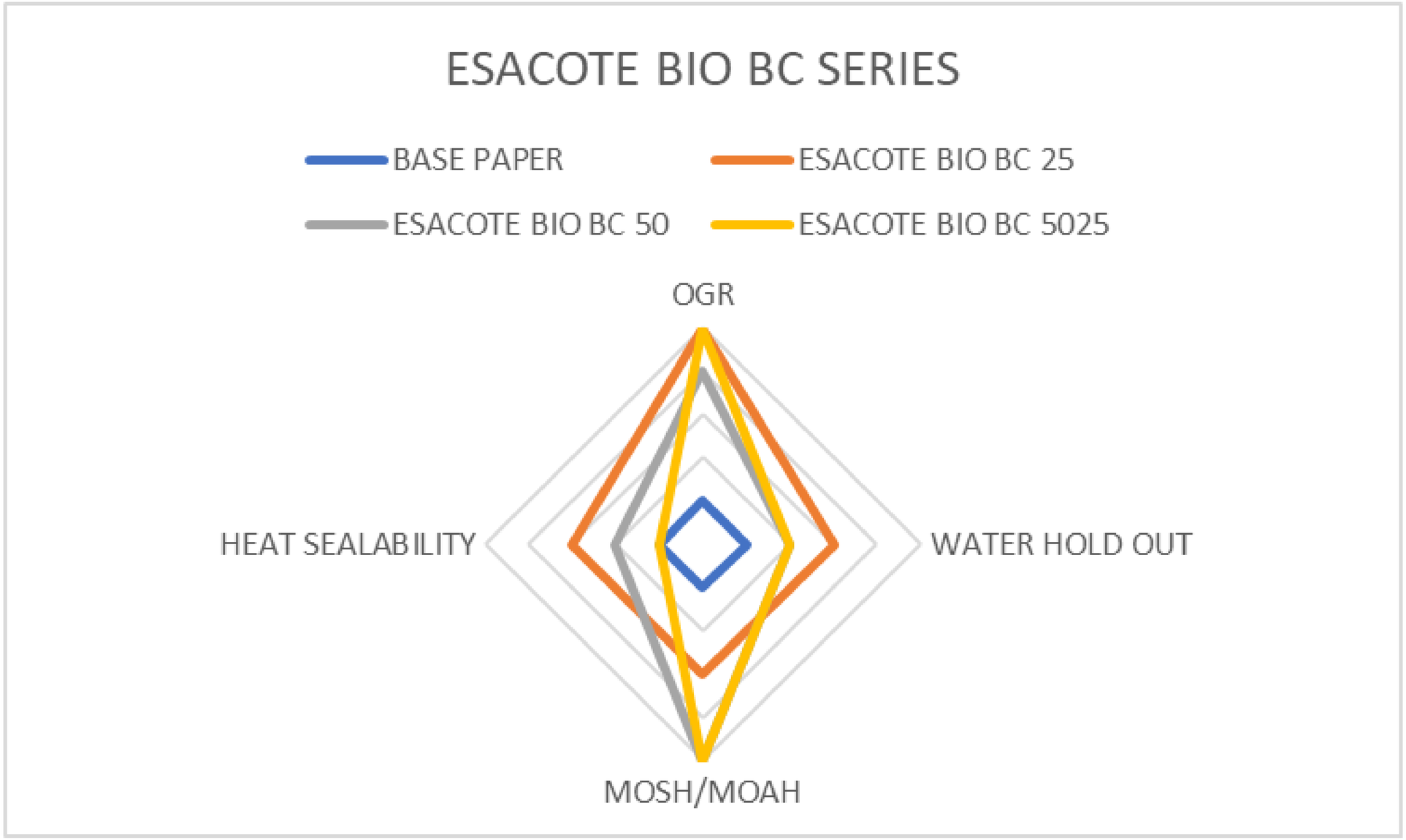
Additives

- Stable with fillers
- Compatible with co-formulants

- Easy to formulate
- Neutral – alkalyne pH
- Suitable for mostly all types of coaters
- Nice to have properties (sealability)

- Mostly not ready to use

03_ESACOTE BIO BC SERIES: Properties & Barriers



03_Application tips

Hybrid resins

Thickeners

- PAC based with pH shifted to alkaline
- Daicol LV 100 FG without any pH shift
- Carbocell DP 100 N with moderate shift (>5,5)

Defoamers

- Silicon- siloxane based not compatible
- Defomex 108
- Defoamers are mandatory

Additives

- Stable with fillers
- Shift of pH necessary for some additives

- From 25 to 50% of bio content
- Biocide free products
- Very effective on OGR and mineral oil
- Suitable for mostly all tipes of coaters

- Attention in the formulation step
- Mostly not ready to use
- Stability with other co-formulants

04_Inspired by Nature

Fruit skins or cuticles, are already performing to extend life of all organic matters and are primarily composed by cutin substance

Cutin can be extracted from fruits, vegetable, especially from tomato peels.

The tomato processing industry use 40 mil ton* of Tomato yearly, which makes tomatoes the world's leading vegetable for processing, and generates significative amount of tomato peels by-product.

*World Processing Tomato Council 2023

04_Tomato’s Skin Barrier Coatings

Lamberti patented an innovative solution to convert extracted cutin in **Esacote® BIO BC 100**, a waterbased fluid easy to be applied for all flexible packaging materials.

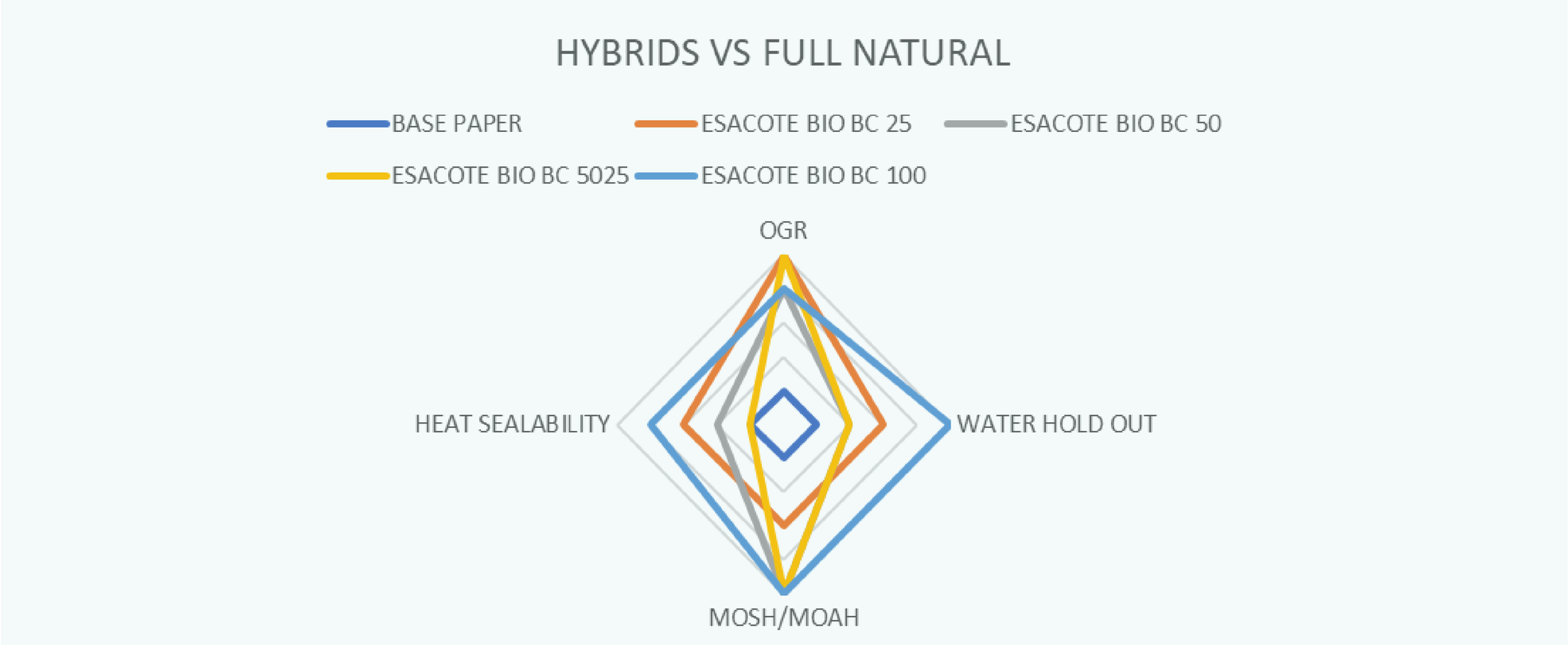
*Tested by Beta Analytics: ASTM D6866 C14/Ctotal
*Certified by Meyer Science

Esacote®
BIO BC
100
PLASTIC FREE

- 100% biobased
- Fully natural & plastic free
- Patented
- KM Ø
- Based on cutin from tomato peels

Biomimetic Design
Science Inspired by Nature

04_Esacote® BIO BC 100



Biomimetic Design
Science Inspired by Nature

Fully natural & plastic free

04_ Esacote® BIO BC 100: application tips

Thickeners

- PAC or natural if needed

Defoamers

- Defomex 108
- Defoamers are mandatory

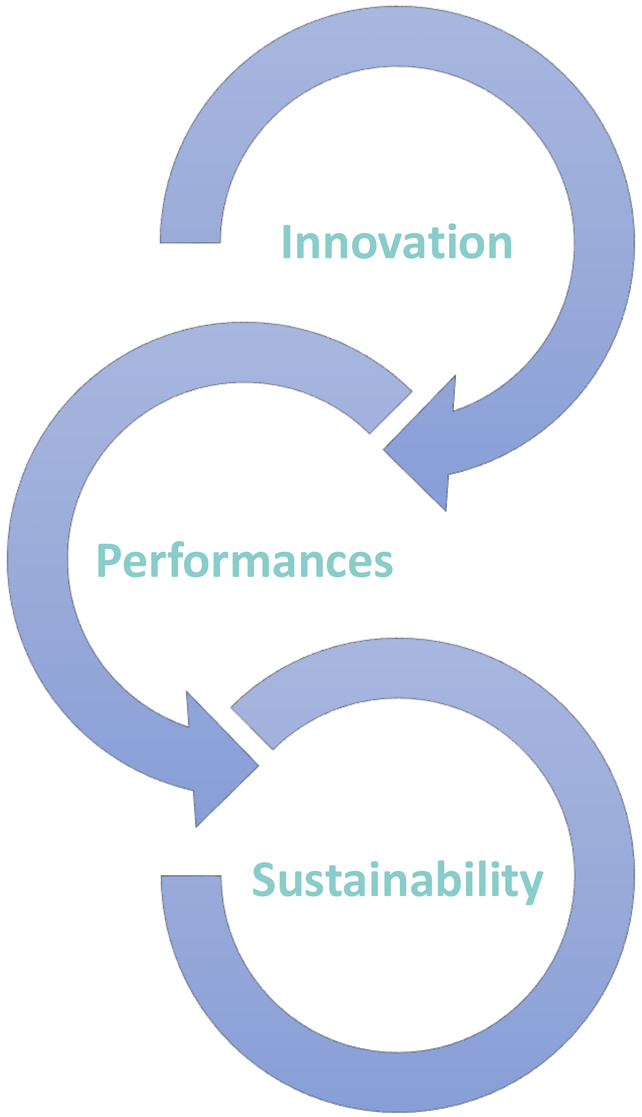
Additives

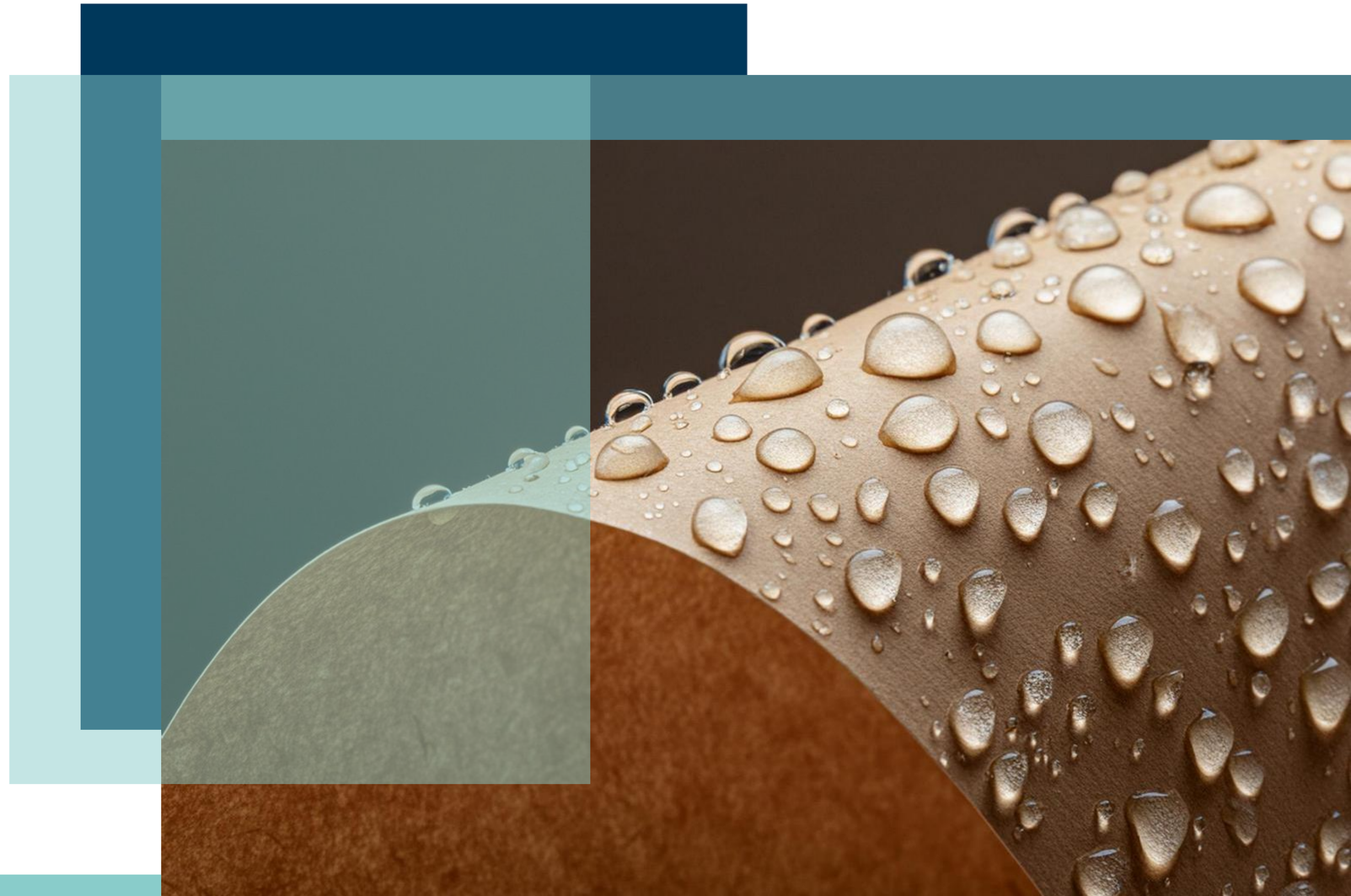
- Stable with fillers
- Wetting agent needed for some applications

- 100% Biobased carbon
- Plastic free
- Combine OGR and water hold out
- Suitable for off-line and in-line coaters
- Heat sealable

- Colour
- Formulation

Join Us





Lamberti

Sustainable Coating Makers

THANK YOU FOR YOUR ATTENTION

Q&A

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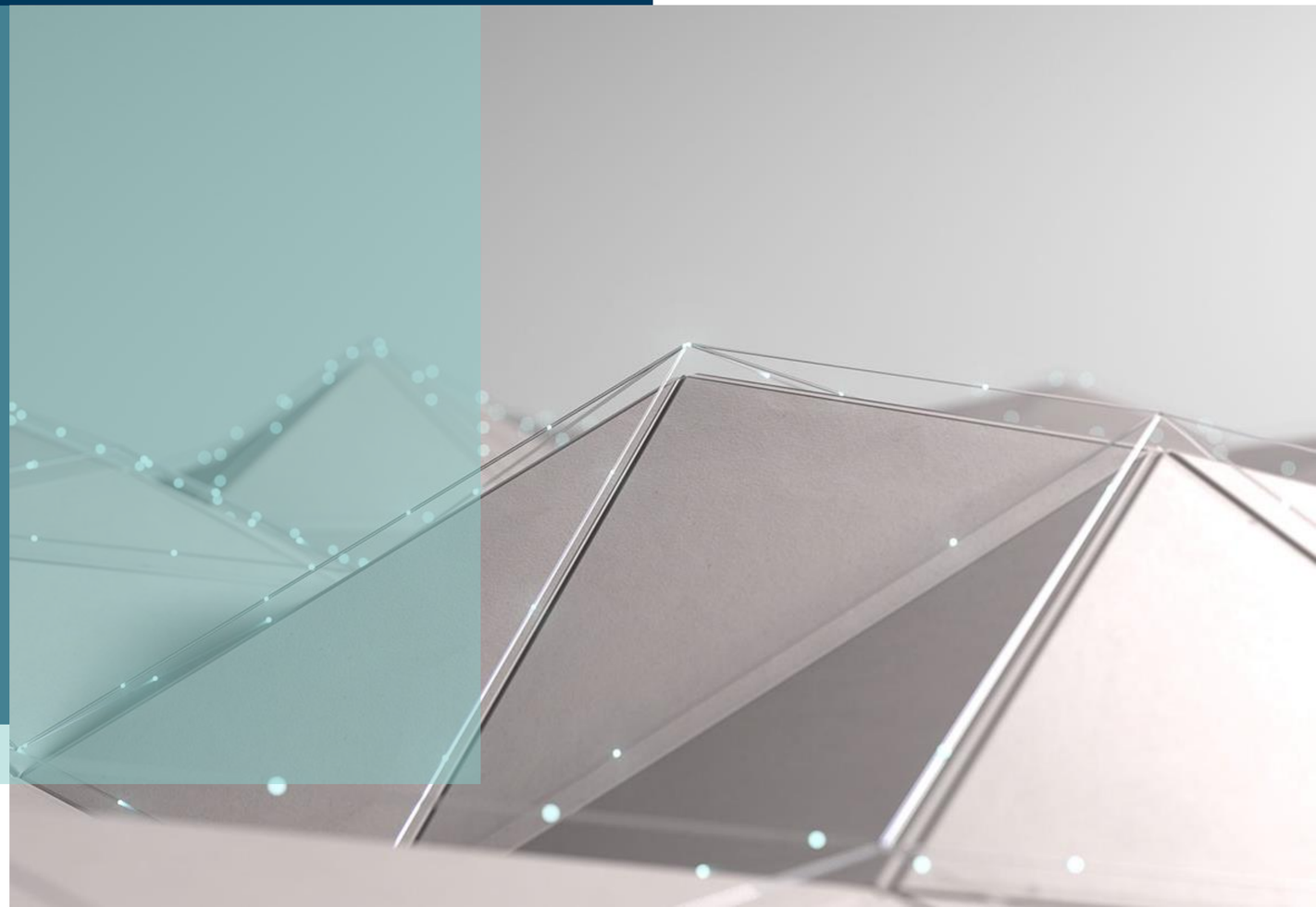
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