




**The Material Revolution Continues:  
Introducing UBQ's breakthrough  
Sustainability Product Portfolio**

**Reshaping how most things are made,  
in more ways than ever**





How can you achieve your  
sustainability goals in product  
development  
without unacceptable compromises on  
performance or profitability?

# UBQ can help **YOU**...



Remove and avoid GHG emissions, lowering the carbon and methane footprint of your products.



Replace more fossil-based plastics with bio-based, 100% PCR materials.



Maintain time to market with less formulation and implementation guesswork.



Deliver the added value of sustainability while managing material costs.



Create circular, recyclable and sustainable products within the performance ranges you require.

# Fresh New Ways to Solve the Sustainability Puzzle



# NEW UBQ™ Sustainability Product Portfolio

## The Material Revolution Continues – in more ways than ever

### Making sustainable product development more about upside opportunities

- A portfolio of materials with unique and complementary functionality and performance.
- All engineered to help you meet sustainability targets: waste diversion, increased PCR content, emissions removal and avoidance.
- Each formulated to help resolve performance compromises often found in incorporating sustainable materials.

#### Sustainability additives and material replacements



Higher GHG removal & avoidance



Proven material replacement



Suitable for operational uses

#### Supporting formulations for additional benefits



Odor-reducing modifier



Performance-compliant enhancer

With future products in continuous development – coming soon



- Sustainability additive
- Enhanced greenhouse gas removal and avoidance
- Helps achieve carbon neutrality
- Supports climate positivity

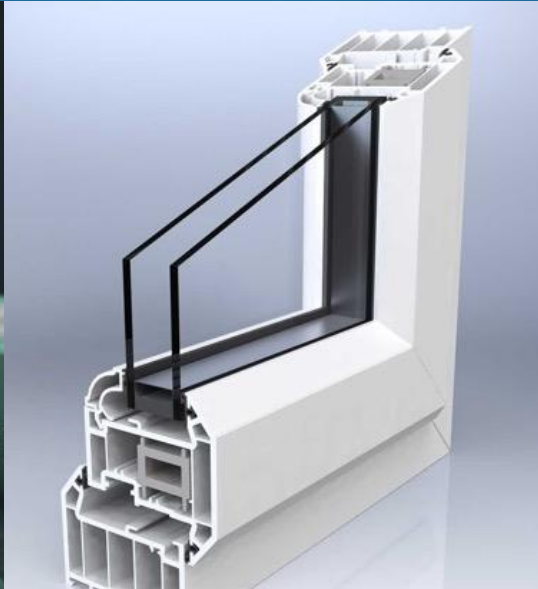


# Act on Your Ambition

# UBQ ClimaPos™ Applications



**SHEETS & SUBSTRATES**



**WINDOW PROFILES**



**PET HOUSES**



**POS DISPLAYS**



**BOTTLE CRATE**

As little as 5% can power your progress toward ambitious carbon-neutral or even climate-positive goals.



## A bio-based sustainability additive that enables enhanced greenhouse gas removal and avoidance as a formulation partner.

A little UBQ ClimaPos™ goes a long way toward achieving your sustainability targets. Made from PCR waste, it's a powerful partner in removing greenhouse gas emissions. Blending as little as 5% UBQ ClimaPos™ into your applications can power progress on your ambitious carbon-neutral to climate-positive goals.

### Processing Method

- Injection molding, extrusion, compression molding, 3D printing, rotomolding.
- Suitable for compounding/dry blending with polymers and elastomers.

### Storage

- UBQ ClimaPos™ is packaged in bags.
- Store the material in dry and cool conditions.
- In original packaging, can be stored up to 24 months under normal storage conditions.

### Compliances

-  ✓ EU REACH
-  ✓ UK REACH
-  ✓ SVHC
-  ✓ ROHS
- ✓ Conflict mineral avoidant
- ✓ Heavy metal avoidant

# ubq Q Series

- Versatile, proven, bio-based material replacement: circular, climate-positive, recyclable
- A straightforward material swap
- Blend with most Polymers



## Versatile Sustainability

# UBQ Q Series Applications



**SERVICE PANEL**



**WOOD COMPOSITE**



**SHOPPING BASKETS**



The widest variety of applications – bio-based, circular, climate-positive, recyclable.



## Our proven UBQ™ material with a wide variety of applications across industries

UBQ Q Series is our proven standard climate-positive material replacement (load levels from 25%), suitable for a wide variety of applications across industries. This is a bio-based, climate-positive plastic substitute compatible with most resins on the market, including PP, PE, PLA and PVC, among others.

### Processing Method

- Injection molding, extrusion, compression molding, 3D printing, rotomolding.
- Suitable for compounding/dry blending with polymers and elastomers.
- Suitable for use on its own where final product characteristics permit.

### Storage

- UBQ Q Series is packaged in bags.
- Store the material in dry and cool conditions.
- In the original packaging can be stored up to 24 months under normal storage conditions.

### Compliances



✓ EU REACH



✓ UK REACH



✓ SVHC



✓ ROHS

✓ Conflict mineral avoidant

✓ Heavy metal avoidant



- When function is more important than form or flash
- A straightforward material replacement
- High-value function and reliability across many operational uses



# The Power is in the Particle

# UBQ Industrial Applications



**BITUMEN ROOFING MEMBRANE**



**PIPES & TUBES**



**GARDENING COMPOSTERS**



**PALLETS & SHIPPING MATERIALS**

A bio-based thermoplastic workhorse – delivering sustainability in more ways and places.



## Circular, recyclable material replacement for sustainable function, reliability and value in operational uses

When function matters more than form or flash, turn to UBQ Industrial. Neutral in appearance and compatible with most resins on the market, this climate-positive plastic substitute delivers practicality and value in sustainable applications.

### Processing Method

- Injection molding, extrusion, compression molding, 3D printing, rotomolding.
- Suitable for compounding/dry blending with polymers and elastomers.
- Suitable for use on its own where final product characteristics permit.

### Storage

- UBQ Industrial is packaged in bags.
- Store the material in dry and cool conditions.
- In the original packaging can be stored up to 24 months under normal storage conditions.

### Compliances



✓ EU REACH



✓ UK REACH



✓ SVHC



✓ ROHS

✓ Conflict mineral avoidant

✓ Heavy metal avoidant

# Double Down on Sustainability: Combination brands deliver multi-functional properties



Remove and avoid GHGs as you boost odor mitigation with this climate-positive sustainability additive with modifier.



Hit your targets with a one-two punch: a bio-based sustainability additive with performance enhancer.



Sustainable innovation starts with this bio-based material replacement with performance enhancer.



When closeness counts: A bio-based, climate-positive material replacement with modifier for increased odor mitigation.



- Additive for highly effective odor mitigation
- Ideal for applications where neutral scent is a must
- A clear advantage over PCR material alternatives



# Odor Out, Future In

# UBQ Nclozur™ Applications



**FOOTWEAR**



**AUTO INTERIORS**



**LV FLOORING**



**RETAIL HANGERS**



**CARPET BACKING**

For scent-sensitive, indoor and interior applications with direct user interaction.



## Reduced-odor, bio-based modifier, for scent-sensitive applications

From toolboxes to auto interior pieces, UBQ Nclozur™ provides a high-performance advantage to PCR alternatives for any product with odor thresholds to meet. Preserve finite resources and achieve a more neutral scent with the most climate-positive bio-based thermoplastic on the market.

UBQ Nclozur™ is sold only as a modifier to our primary additives and replacements. Not sold separately.

### Compliances

-  ✓ EU REACH
-  ✓ UK REACH
-  ✓ SVHC
-  ✓ ROHS
- ✓ Conflict mineral avoidant
- ✓ Heavy metal avoidant



- Bio-based enhancer – blends with range of polymer matrices
- To meet conventional material impact requirements
- Built-in circularity and sustainability



# Make a Material Difference

# UBQ Impact Applications



**TRANSPORT BOXES**



**DECKING**



**CAR DOOR MIRROR**



**TRASH BINS**

Hit both your sustainability and performance targets, together.



## Bio-based enhancer to create circular, sustainable products within targeted performance ranges.

UBQ Impact blends with a range of polymer matrices to resolve bio-based material compromises, meet set impact standards and power product performance.

UBQ Impact is sold only as an enhancer to our primary additives and replacements. Not sold separately.

### Compliances

-  ✓ EU REACH
-  ✓ UK REACH
-  ✓ SVHC
-  ✓ ROHS
- ✓ Conflict mineral avoidant
- ✓ Heavy metal avoidant

# The Material **Revolution** Continues

Introducing UBQ's breakthrough Sustainability Product Portfolio

Reshaping how most things are made – in more ways than ever



- Made from waste
- Circular and recyclable
- Low-carbon production
- Removes and avoids GHG emissions
- Climate-positive impact
- Reduces use of fossil-based plastics
- Thousands of applications
- Straightforward implementation

# Standard Polymers

Applicable in a range of proportions without need to re

## COMPATIBLE MATERIALS

Thermoplastic Elastomer (TPE)

Thermoplastic Olefin (TPO)

Polyvinyl Chloride (PVC)

Polylactic Acid (PLA)

Polyethylene (PE)

Ethylene-vinyl Acetate (EVA)

Acrylonitrile Butadiene Styrene (ABS)

High Impact Polystyrene (HIPS)

Polypropylene (PP)

## COMPATIBLE MANUFACTURING PROCESSES

Extrusion

Injection Molding

Compression Molding

3D Printing

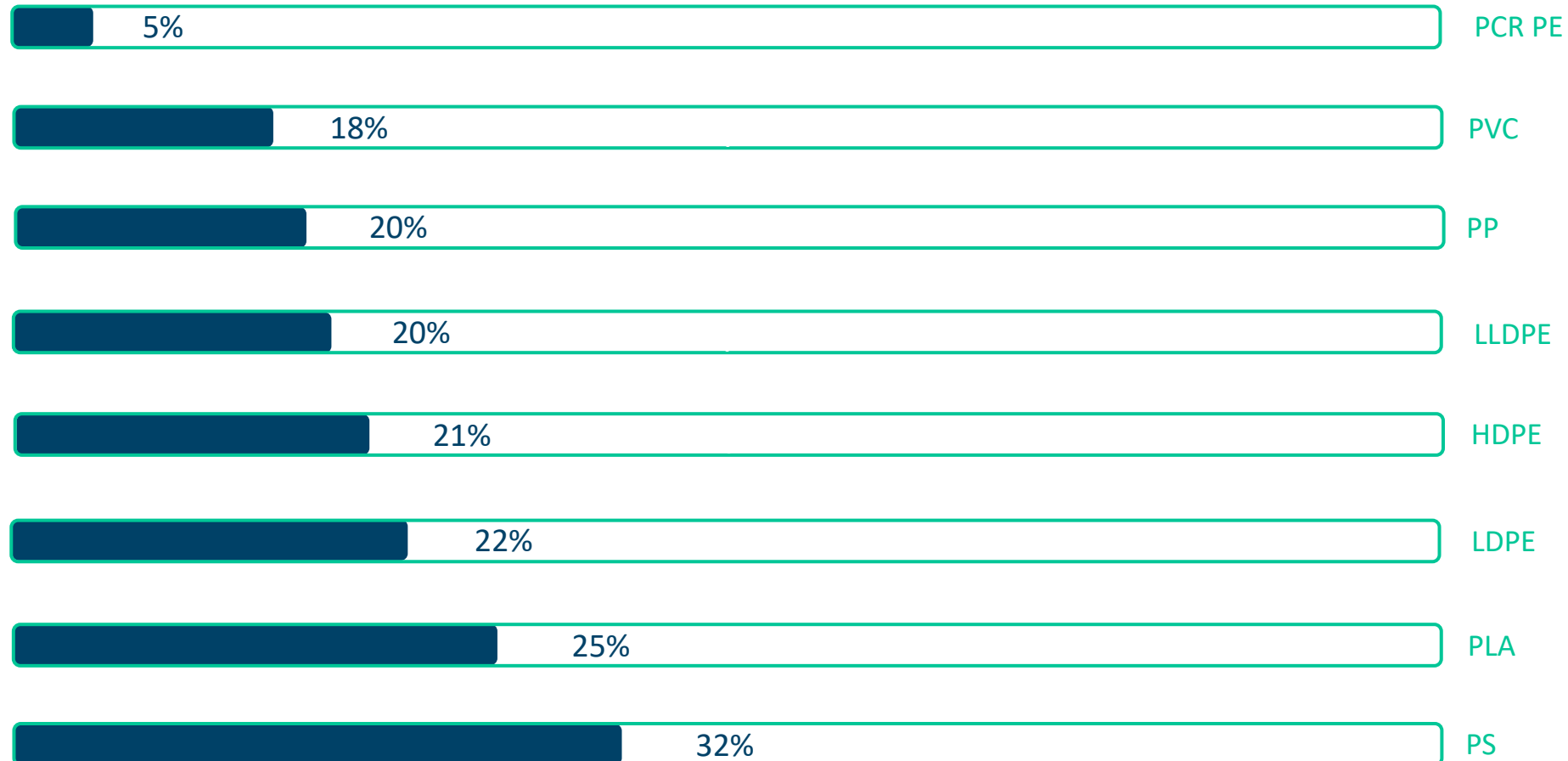
Rotomolding

# A Little Goes A Long Way

Add UBQ™ to offset the carbon footprint of base polymers

APPROXIMATE LOADING LEVEL OF UBQ MATERIAL (%) TO OFFSET FINAL PRODUCT CARBON FOOTPRINT

COMPATIBLE MARKET POLYMERS



# Choosing the best candidates for implementation

## UBQ PROPERTIES AND POTENTIAL APPLICATIONS



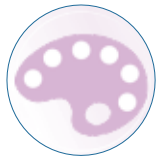
### Application

While UBQ™ is manufactured to the highest standards, some requirements apply. In general, any non-direct food contact, rigid, durable and semi-durable products



### Wall Thickness

UBQ™ basic particle size is up 1.4mm (d97). A wall thickness  $\geq 2\text{mm}$  in final product is recommended.



### Color

UBQ™ color is dark olive grey. Darker shades are more suitable: blue, red, brown, green, black, dark grey.



### Odor

The UBQ™ process may generate an aroma typical of recycled plastic. This fades after venting. It is important to observe working conditions to minimize odor generation. UBQ Nclozur™ additive can be used to further mitigate.



### Mechanical Properties

As a bio-based material, UBQ™ may affect some end product mechanical properties. UBQ™ may be adapted by customer to comply with product specifications. Our Technical Team is happy to support.



### Surface Quality

Surface quality may be affected by some UBQ™ products. Textured surface products are recommended, with UBQ Industrial best suited for applications where surface is less a priority.

# UBQ™ Implementation Process

An iterative process with potential customers

## INITIAL STAGE

Potential Partner



End-product Specifications

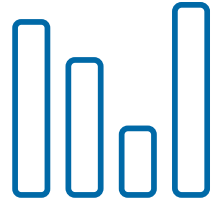


Feasibility Questionnaire



## FEASIBILITY STAGE

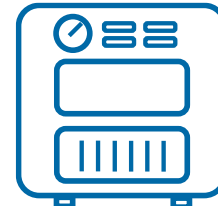
UBQ Simulation



YES

NO

Feasibility Trial Production

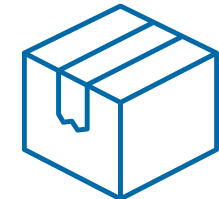


## LAUNCH STAGE

Technical & Commercial Closing



UBQ Commercial Production



### Required Inputs:

- TDS of client's current resin
- Current process parameters
- End-product specification

### UBQ Output:

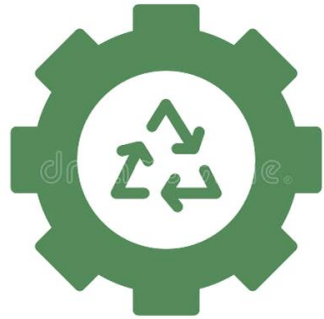
- Comparison results at different loading level percentage of UBQ™
- Samples of UBQ™ sent for trial

### Results:

- End-Product UBQ™ implementation
- Industrial supply
- Marketing & Sustainability support

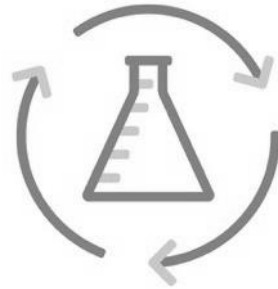
# The UBQ process is a step beyond mechanical or chemical recycling

## MECHANICAL



- Requires highly sorted and cleaned waste stream
- High levels of process loss
- Low recycling limits (3x)
- Variable quality
- Only a small proportion is circular

## CHEMICAL



- Energy-intensive – generating even more emissions
- Leaves toxic by-products
- Expensive



- Uses full residual household waste, including organics
- Low green energy, with zero combustion, water, residuals, or effluents
- Homogenous material, recyclable 5-10x in tests



Thank you

