

Sustainable Solutions



Biobased Resins



Biobased Resins

Biorene® is a new generation of so-called biobased polymers that incorporate biomass in their manufacture. Their development has allowed to create new bridges between the agricultural and chemical industries as part of a responsible management of Earth's resources.

Our biobased resins are produced by mixing traditional plastics and starch:

- Polystyrene (PS) + Starch
- Polypropylene (PP) + Starch
- Polyethylene (PE) + Starch

The starch comes from **corn** crops used for **industrial applications**. Some Biorene grades are certified as "OK-biobased" by TUV-Austria.



Biobased products:

Base-grade polystyrene

- Biorene HA-25 (It replaces GPPS for foaming)
- Biorene HA-40 (It replaces GPPS for injection)
- Biorene HF-40 (It replaces HIPS for injection or extrusion/thermoforming)

Base-grade polypropylene

- Biorene HI-40 (for injection)
- Biorene HP-40 (for extrusion/thermoforming)

Base-grade polyethylene

- Biorene HE-40 (for blown film)

Applications and Markets

- > Disposable or single-use products: Cutlery, straws and bags. Thermoformed lids, plates and glasses. Foamed plates and trays
- > Packaging and containers for ready-to-eat or take-away food

Compostable Resins



Compostable Resins

Plastics made with compostable resins can biodegrade under controlled composting conditions, and are the only ones approved in countries where there are current prohibitions.

Compostable resins can be processed in standard equipment and they may totally replace traditional plastics. They are suitable for sheet extrusion, blown film, cast film, injection and blowing by using conventional equipment without having to make large investments.

Applications and Markets

One of the multiple markets where compostable resins play a role is flexible packaging. Compostable-resin bags are a perfect alternative to current non-biodegradable products of fossil origin, as they offer all the positive features of traditional bags plus biodegradation and compostability.

These resins provide consumers with solutions for all their tableware and single-use plastic food containers (Plates, cutlery, cups, straws and chopsticks). They may be collected together with food scraps and managed through organic recycling.

Product portfolio



Opaque film

Biorene BF-20LC
Biorene BF-25LC
Biorene BF-40LC



Injection

Biorene IM-70A
Biorene IM-72 MS



Clear film

Biorene BF-05LR
Biorene BF-55LR
Biorene BF-85LR



Thermoforming

Biorene TF-72 M





15% of UBQ cuts HIPS
environmental impact in half

HIPS with $\approx 30\%$ of UBQ is
NET-ZERO

Resirene and UBQ Materials became partners in order to produce the first circular-grade high-impact polystyrene (HIPS) compound, which makes it the most sustainable polystyrene on Earth.

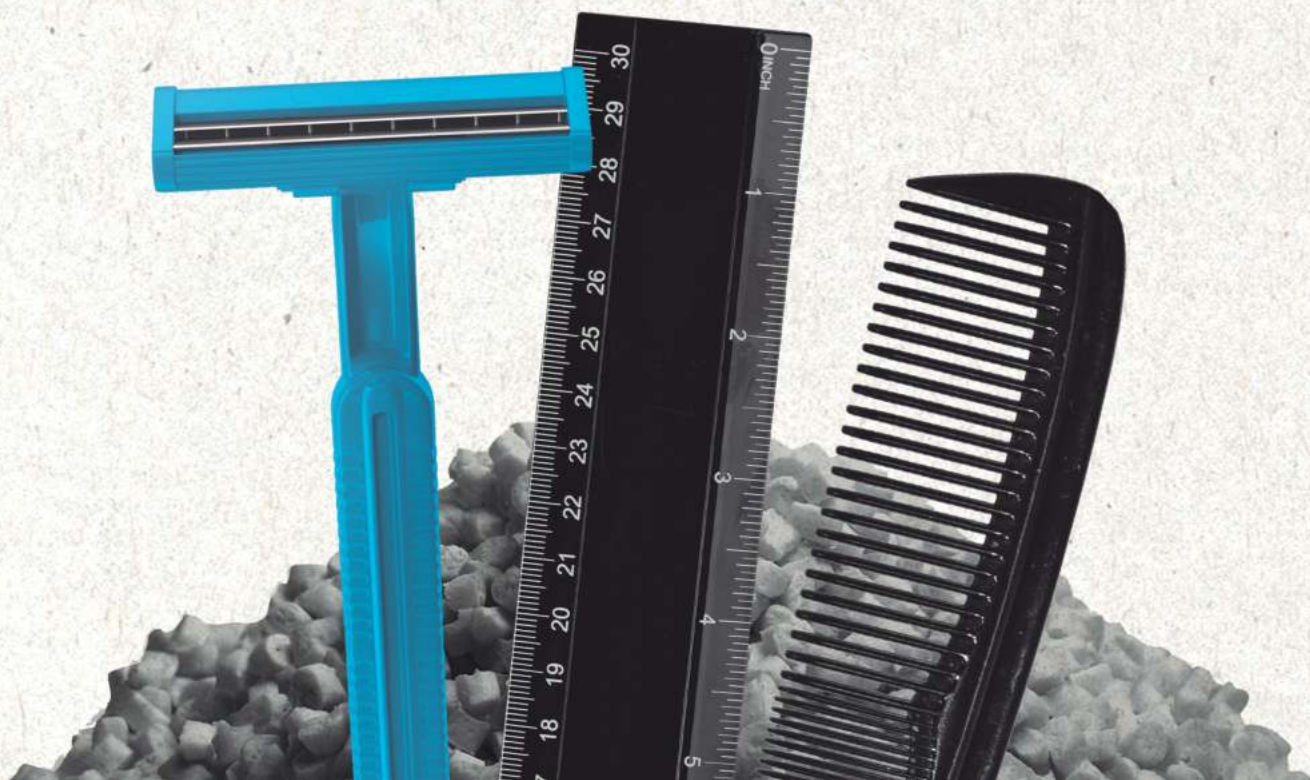
- Collaboration with UBQ Materials
- Sole provider of HIPS UBQ®
- Significantly reduced environmental impact:

Carbon footprint (CO₂ kg equivalent)

HIPS 5,500

UBQ™ -11,500

Grade	Flow (200°C/5.0 kg) g/10 min	Slotted Izod Impact (1/8 in – 3.175 mm)	Processability	Markets
9201	10	1.3 ft-lbf/in (6.8 kJ/m2)	Injection molding	- Institutional consumption
9202	8.5	1.9 ft-lbf/in (9.9 kJ/m2)	Injection molding	- Household items
9401	3.6	1.9 ft-lbf/in (9.9 kJ/m2)	Extrusion Thermoforming	- Advertising items





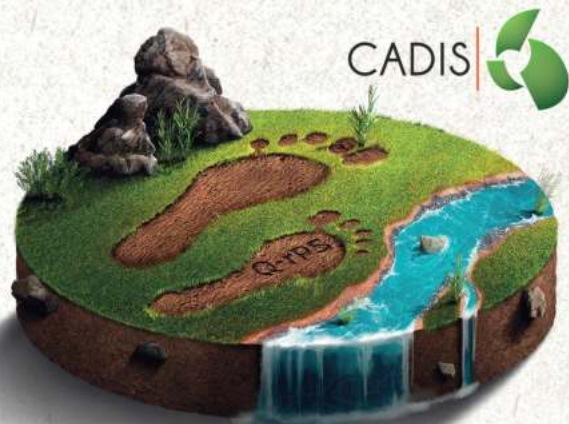
25% Certified Postconsumer Recycled content

- SCS Recycled Content **Certification** independently verifies the percentage of a product made from recycled content or recycled materials.
- SCS is endorsed by the **US Association of Plastic Recyclers (APR)**.

Applications

- Our high-quality base material is versatile and can be used in multiple applications.
- We offer two specialized grades, one for extrusion and the other for injection molding.
- Moreover, the material is perfect for foamed applications.
- **FDA Approved:** 21 CFR 177.1640, so it can be used for packaging and products in direct contact with food, as well as for home appliances, among others.

Name	Q-rPS® 25 EX	Q-rPS® 25 IN	Q-rPS® 25 HI
PS grade	GPPS	GPPS	HIPS
Melt Flow Rate (200° C/5.0 kg)	2.4	8.5	3.0
Break Elongation (%)	3.0	1.6	52.0
Processability	Sheet Extrusion, Foaming, OPS	Injection Molding	Extrusion & Thermoforming
Applications	Lids, trays & takeout containers	Cups, cutlery	Lids, cups, cutlery



**Carbon Footprint
reduction by 24%**



MINIMUM 25% RECYCLED CONTENT
POST-CONSUMER

NEW

Q-rPS®

Polystyrene with recycled content

25% certified
postconsumer
recycled content



Carbon footprint
reduction by **24%**



Certified quality
and performance,
similar to a **virgin resin**

Food contact safe
(FDA Approved)

**AVAILABLE
NOW!**



 **Resirene**
Custom Solutions, **Solid Partnerships**

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CREATING VALUE

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