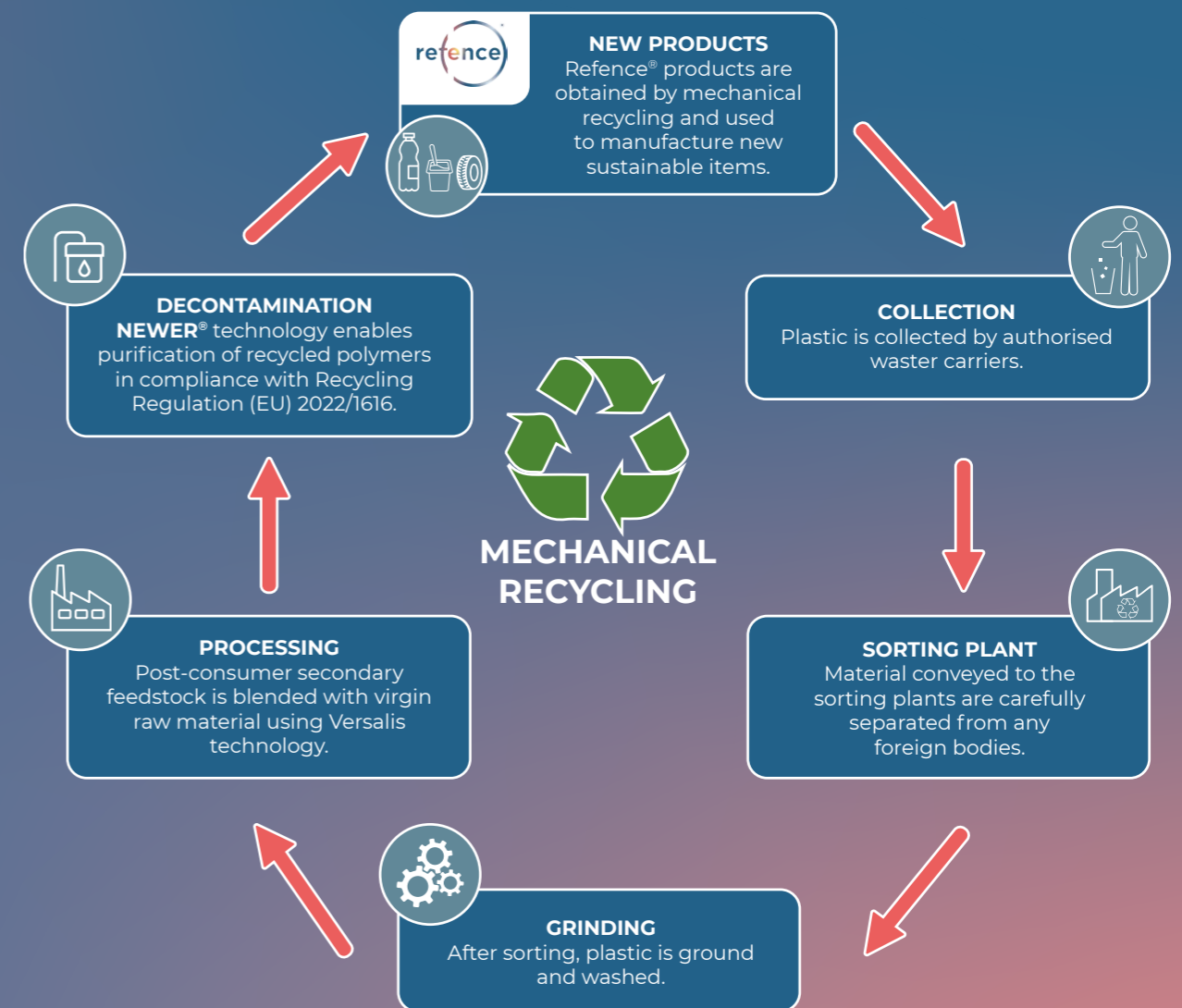




REFERENCE[®], THE RANGE OF MECHANICALLY RECYCLED POLYMERS DESIGNED FOR PACKAGING FOR DIRECT FOOD CONTACT

REFERENCE[®] is the range of mechanically recycled polymers designed for packaging for direct food contact, developed alongside Versalis Revive[®], the range of products with different polymer bases (styrenics, elastomers, polyethylene and polypropylene) containing recycled raw material.

Developed in collaboration with Forever Plast, a leading company in post-consumer plastics recycling, REFERENCE[®] grades are produced using Newer[®] technology, which ensures the purification of recycled polymers in compliance with EU Regulation 2022/1616 on recycling.



The Reference[®] product family expand and complement the corporate portfolio, offering customers innovative grades with varying levels of recycled content to ensure high-quality applications.

REFERENCE®

NEWER®

Decontamination technology for mechanical recycling

NEWER® is the technology developed at Versalis research laboratories in Mantua that enables purification of recycled polymers in compliance with Recycling Regulation (EU) 2022/1616. Implemented on an industrial scale at the Forever Plast plants in Lograto (Brescia), as a result of a co-development agreement between Versalis and Forever Plast, **NEWER®** technology has received a No Objection Letter (NOL) from the US Food and Drug Administration (FDA).

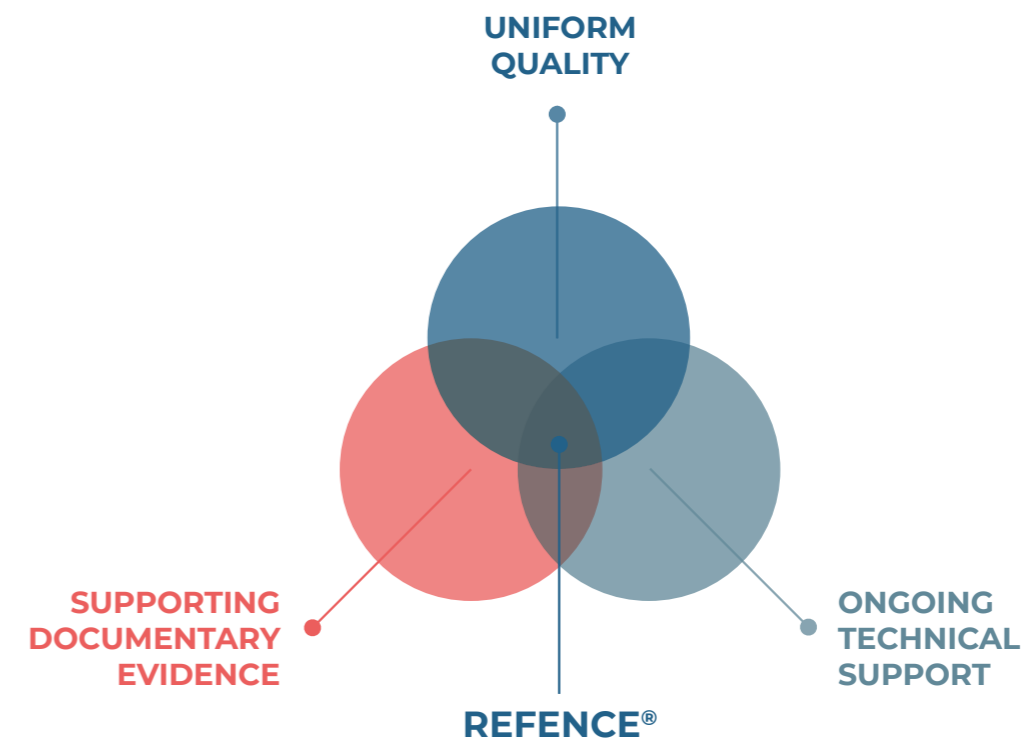


REFERENCE®

The right choice for a sustainable future

Refence® products represent an innovative solution for those seeking more environmentally sustainable, circular materials.

- An advanced production process allows us to guarantee **uniform end-product quality** by managing a secondary raw material (SRM) with naturally variable properties.
- Every material includes complete **certifications and technical documentation** for full transparency, regulatory compliance, and traceability.
- We provide **specialist technical support**, assisting customers in material choice and optimisation for their specific applications.
- As a **European mechanical recycling hub**, we guarantee a continuous and reliable supply of materials, meeting the needs of an increasingly sustainability-driven industry.



FOOD PACKAGING - REFENCE®

REFENCE® is the innovative range of mechanically recycled polymers designed for **direct food-contact applications**. This family enhances the Versalis Revive® portfolio, increasing the opportunities for mechanical recycling, and is suitable for both rigid and expanded polystyrene food packaging.



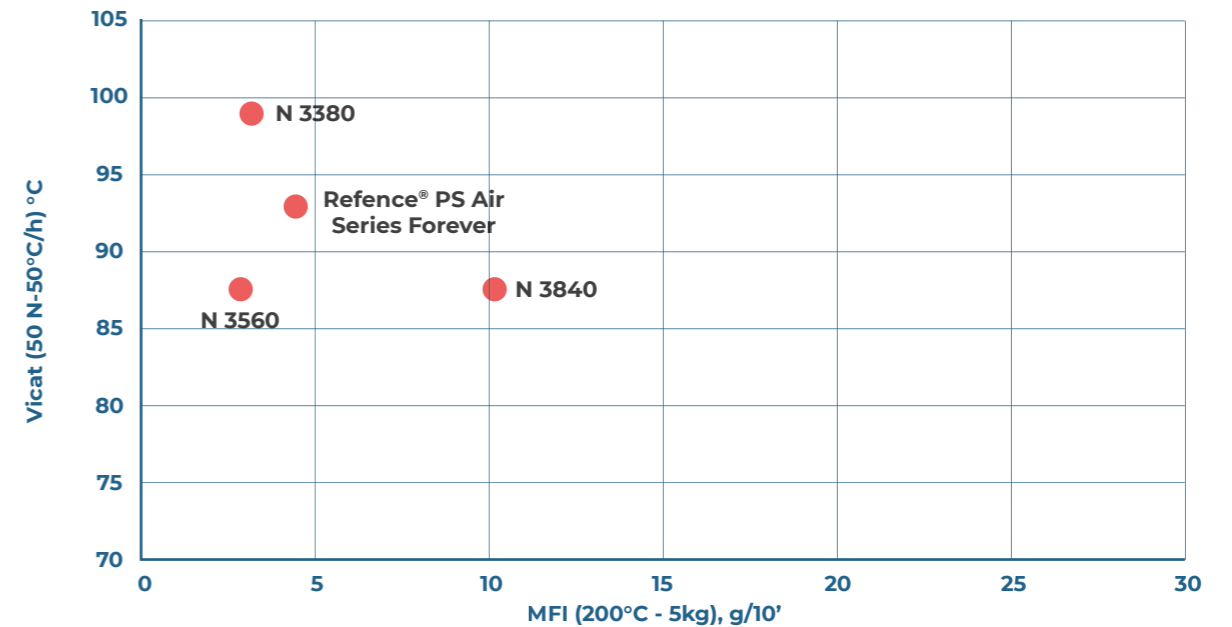
Developed in partnership with the Italian company **Forever Plast**, Lograto (Brescia), a leading post-consumer plastic recycler, REFENCE® grades are produced using **Newer® technology** that ensures purification of recycled polymers in accordance with Regulation (EU) 2022/1616.

In addition to the standard Edistir® food packaging range, there are: **Refence® PS Air-Series Forever** and **Refence® PS Land-Series Forever** with minimum 75% content of recycled polystyrene obtained from separate household waste collection.

Refence® PS Air-Series Forever has been specifically developed for the production of **semi-foamed food trays** (e.g. for meat and fish).



Versalis GPPS: rheological and thermal properties combination



Partnerships with various players in the polystyrene industry, such as **CoRePla**, have created an innovative, recyclable food-contact tray whose feedstock is recycled polystyrene.

Refence® PS Land-Series Forever is used in the manufacture of thermoformed food-packaging items with a steep draft angle such as **yoghurt pots, food containers and vending machine products**.

	R 850E	SR 550	ICE R 830D	RC(I) 600	Refence® PS Land - Series Forever
	Super Impact	High impact, high flowability	High stress-cracking resistant	High gloss	Sustainable HIPS with 75% recycled post-consumer polystyrene
MFI (200°C, 5 kg), g/10'	4	11	3	6	4.5
Izod un-notched (23°C, 4 mm), kJ/m²	10	9	10	5.5	6
Gloss (20°)	++	++	+	+++++	++
Vicat (50 N - 50 °C/h), °C	91	82	88	88	90

Refence® products are:

Commercial name	Refence® PS Air-Series Forever	Refence® PS Land-Series Forever
Direct food-contact	Yes	Yes
% recycled	75	75
MFI (200°C, 5 kg), g/10	4.5	4.5
Izod un-notched (23°C, 4 mm), kJ/m ²	3	6
Vicat (50 N – 50 °C/h), °C	93	90
Certification for recycled or bio-based content	PSV	PSV
Source of waste	Domestic post-consumer waste	Domestic post-consumer waste
Main Application	Foam tray	Yoghurt pots, vending machine products, food containers
Colour	Grey	Light grey

REFENCE® EPS

Following the circular economy approach **Refence® EPS 3000 PM** has been developed for a new era of sustainable EPS (Expanded Polystyrene) for food contact applications. Produced in **Porto Marghera plant**, the **Refence® EPS 3000 PM** contains Secondary Raw Materials (SRM) sourced from the collection of expanded polystyrene food packaging and domestic post-consumer waste, in accordance with UNI 10667/10 and certified Plastica Seconda Vita (PSV).

Refence® EPS 3000 PM has been specifically developed for the production of food Packaging: crates for fish, fruit/vegetables, poultry and cheese.

Commercial name	Refence® EPS 3000 PM
Dimensional range (mm)	0.7-1.1
Typical density range (g/l)	18-30
Certification for recycled or bio-based content	PSV
% recycled	10
Colour	White

Thanks to its peculiar cellular structure, Refence® EPS 3000 PM can be used with success in many applications requiring superior **thermal insulation** properties. Refence® EPS 3000 PM is able to preserve the content temperature for several hours. Fresh fish and fruit/vegetables are preserved everyday by their EPS packaging.





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