Styrenics Circular Solutions

Press Release
26 September 2022

SCS members and their partners show closed-loop recyclability of foamed polystyrene food trays

- **High-purity recyclability of foamed polystyrene trays proven in practice in Italy**
- **The quality of the mechanically recycled material allows its use in food contact applications, enabling tray-to-tray recycling**

Styrenics Circular Solutions (SCS), the value chain initiative to realise the circular economy for styrenic polymers, today confirmed the recyclability of foamed polystyrene (PS) trays, which had been proven in practice by SCS members in close collaboration with the entire value chain. The high purity mechanical recycling process was successfully adapted to extruded polystyrene (XPS) food trays, which now enables extending closed-loop recycling to XPS food trays.

This closed-loop, tray-to-tray recycling scheme was made possible by the close collaboration of actors across the value chain: consortium Corepla, which already routinely collects post-consumer foamed PS trays in Italy, created a sorted fraction of foamed PS in its sorting centres. SCS member Tomra, and Zimmermann then performed the high-purity mechanical deep sorting, hot washing and flake sorting. Forever Plast S.p.A. developed the dewatering and finishing into PS recyclate. SCS member Versalis (Eni) verified the high purity of the PS recyclate in a quality assessment and converter Magic Pack, a member of ProFood (Unionplast), integrated the recyclate in new foamed PS food trays.

The suitability for use in food contact articles is ensured by using recycled PS (rPS) in the middle layer of a so-called ABA structure with virgin PS as a safe functional barrier.

The foamed PS trays produced with this innovative process contain 50% rPS, are 100% recyclable themselves and can be recycled multiple times over again. The use of rXPS content behind a PS functional barrier has already been commercialised by ProFood.

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Jens Kathmann, Secretary-General of SCS, said: “This success story has positive implications far beyond Italy. The proof that XPS food trays can be effectively and efficiently sorted, recycled and returned even to its original food contact applications, should inspire accelerated scale-up. It also confirms the market demand for rXPS trays, which should encourage others to follow the example of Italy.”

Claudio Bilotti, Polystyrene Marketing Manager of Versalis (Eni), commented: “The results confirm that XPS trays are fully circular: they are already today widely collected in Corepla’s collection system in Italy. The trays are easily sortable in Corepla’s existing sorting facilities and now have proven in practice to be recyclable in a closed loop thanks to the innovative high-purity mechanical recycling process adapted from rigid PS to foamed PS. The entire value chain is driving the rapid establishment of a high-purity recycling channel for all major PS applications and the uptake of rPS including from foamed PS trays into new products, including food packaging.

Note to Editors

Further examples of XPS collection, sorting and recycling across Europe:

- Foamed polystyrene (XPS) packaging can be effectively and efficiently separated/sorted with existing technology, SCS member Tomra has confirmed: “Styrenic compounds have a unique signal that enables easy and very precise sorting, an advantage which some of the other polymers do not have”.
- In France, “PS25”, a consortium including food manufacturers and producer responsibility organisation (PRO) Citeo, has agreed to finance a recycling scheme for polystyrene in order to recycle yoghurt pots and meat or fish trays, which explicitly includes XPS.
- Swedish Plastic Recycling, a co-owner of the PRO FTI, has announced the building of facility ‘Site Zero’ until mid-2023 to 2025, to double its sorting and recycling capacity and sort all household plastic packaging waste for recycling, including PS and foamed PS.
- Ireland has announced the extension of the separate collection of plastic household waste, including XPS applications like meat trays.
- Belgian household packaging PRO Fost Plus has extended its separate collection in the ’blue bag’ to XPS food trays, among other items, since January 2021 also in Brussels.

Register here for our panel discussion:

Full Circularity. Food Contact.
Inspired by Design. Powered by Styrenics.

K 2022 trade fair, Duesseldorf, Germany, 21 October 2022, 13:30.

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About Styrenics Circular Solutions

Styrenics Circular Solutions is the value chain initiative to realise the circular economy for styrenics. The initiative engages the entire value chain in the development and industrialisation of new recycling technologies and solutions. It aims to strengthen the sustainability of styrenic products while improving resource efficiency within the circular economy.

For more information visit www.styrenics-circular-solutions.com

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