

Syensqo partners with TOMRA to advance the sorting of multilayer PVDC packaging waste

Joint project proves the feasibility of separating multilayer PVDC films from polyolefins in used packaging structures

Brussels, February 23, 2024 – 9:00 CET/CEST

Syensqo and TOMRA, a leading provider of sensor-based sorting technology and solutions for the circular economy, have joined forces to demonstrate the technical and economic feasibility of separating and sorting multi-component plastic structures in which polyvinylidene chloride (PVDC) serves as a barrier layer.

The partners developed a joint set of experiments with multilayer samples of commercial packaging waste consisting of low-density polyethylene (LDPE) and Syensqo's [Ixon® PVDC](#). The results have proven that multilayer films containing PVDC can be separated from mixed plastic waste using industrial sorting equipment to achieve clean-grade polyolefin and PVDC recycling streams.

"The overall target of this project was to challenge major industry standards which claim that multilayer PVDC films cannot be sorted out of multilayer packaging structures," explains Federico Baruffi, Global Marketing Manager, Specialty Polymers, at Syensqo. "Our experiments have demonstrated the contrary and are sending a clear message to the packaging and recycling industry that it can be done, notably with good accuracy and repeatability using existing industrial technology."

The positive results apply to markets that are currently generating multi-layer mixed plastic waste containing PVDC, such as shrink films in consumer and food packaging.

"One of the concerns in the recycling industry was the reliable identification of polymeric waste with PVDC content," adds Marco Gregori, Area Sales Manager Italy at TOMRA Recycling Sorting. "By combining our advanced optical and near-infrared detection systems, we managed to achieve a selectivity rate of more than 80% when sorting from post-consumer plastic mix and more than 95% when sorting from LDPE monolayer stream. This is yet another example of what today's technology, in this case our AUTOSORT™, can already do."

Altogether, these results have extended the scope of mixed plastic waste suitable for recycling to a wide range of multi-layer structures containing PVDC. The joint project between Syensqo and TOMRA is also considered a role model of advancing the circularity of the plastics industry through the dedicated research and development of industry partners who share similar values.

About Syensqo

Syensqo is a science company developing groundbreaking solutions that enhance the way we live, work, travel and play. With a diverse, global team of more than 13,000 associates in 30 countries, we bring great minds together to push the limits of science and innovation for the benefit of our customers.

Building on 160 years of legacy, our solutions contribute to safer, cleaner, and more sustainable products found in homes, food and consumer goods, planes, cars, batteries, smart devices and health care applications. Our innovation power enables us to deliver on the ambition of a circular economy and explore breakthrough technologies that advance humanity.

Learn more at www.syensqo.com

About TOMRA Recycling Sorting

TOMRA Recycling Sorting designs and manufactures sensor-based sorting technologies for the global recycling and waste management industry to transform resource recovery and create value in waste.

The company was the first to develop advanced waste and metals sorting applications use high capacity near infrared (NIR) technology to extract the most value from resources and keep materials in a loop of use and reuse. To date, more than 9,000 systems have been installed in 100 countries worldwide.

TOMRA Recycling is a division of TOMRA Group. TOMRA was founded on an innovation in 1972 that began with the design, manufacturing and sale of reverse vending machines (RVMS) for automated collection of used beverage containers. Today, TOMRA is leading the resource revolution to transform how the planet's resources are obtained, used and reused to enable a world without waste. The company's other business divisions are TOMRA Food and TOMRA Collection.

TOMRA has approximately 105,000 installations in over 100 markets worldwide and had total revenues of about 12 billion NOK in 2022. The Group employs 5,000 globally and is publicly listed on the Oslo Stock Exchange. The company headquarters are in Asker, Norway.



For further information about TOMRA, visit www.tomra.com and follow TOMRA Recycling Sorting on [LinkedIn](#), [X](#), [Facebook](#) and on [Instagram](#).

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