



PET recycling

Futurapet: “Sesotec is our partner in material sorting and analysis”



FUTURAPET

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Products:
VARISORT+
FLAKE PURIFIER+
FLAKE SCAN

Istanbul-based Engin Grup has built up various group companies over the past decades that are active in the marketing and distribution of cosmetic and household products for Turkey and the Caucasus region.

The establishment of Futurapet in 2020 was a logical step towards sustainability and environmental protection, values Engin Grup committed to. The recycling of plastic products is another building block for sustainable production, closing the recycling loop and reducing the burden on the environment. In a plant equipped with state-of-the-art (sorting) technology, Futurapet recycles plastic waste. The secondary raw materials obtained are returned to the plastics processing industry.

The requirement: Reliable production of pure PET

When Futurapet was founded, General Manager Oğuz Engin and his team were looking for innovative solutions that efficiently deliver high-quality end products. Only single-variety rPET can be used for a wide range of new products, thus conserving resources and the environment.

The solution: sorting and material analysis systems ensure material purity

Innovative solutions for the entire production line were a decisive factor in the selection of components. Somplast, Sesotec's sales partner in Turkey, was able to convince Futurapet as a competent partner and consultant of the function and quality of the Sesotec sorting systems in combination with the new material analysis system.

Futurapet relies on innovative Sesotec technologies: The new generation VARISORT+ units, equipped with the unique FLASH technology and a working width of 2816 mm, are used in the multi-stage preparation process for bottle sorting. The final sorting of the PET flakes is carried out by the FLAKE PURIFIER+ sorting systems. They deliver PET material of the highest purity and quality. The new FLAKE SCAN analysis system from Sesotec ensures the final inspection of each BigBag leaving the plant.



VARISORT+ for pre-sorting plastic bottles

VARISORT+ for pre-sorting of plastic bottles

Futurapet receives plastic bottles pressed into bales. The recycling process starts when the bales are broken up: First, light materials are separated by ballistic sifter and then non-ferrous and ferrous metals are separated. After washing and drying processes, the pressed bottles are sent over the Sesotec VARISORT+ sorting systems. These latest-generation units score with a working width of three meters and can thus handle particularly high throughputs in the respective sorting step.

On a VARISORT+ N, positive sorting separates PET bottles from all other types of plastic, such as non-PET bottles, labels, or films. This fraction then passes through a VARISORT+ FLASH CN unit, which is equipped with the innovative FLASH technology for the best possible color detection. The FLASH technology with reflected and transmitted light units, makes free-fall color detection possible for distinguishing the finest color nuances in transparent, non-transparent and semi-transparent materials. In the process, the VARISORT+ FLASH CN uses two valve bars to sort into three different chutes. The good material PET clear and light blue falls through the natural fall curve into the middle chute. Non-PET and PET colored fractions are selectively separated in the other chutes. This process is also known as negative sorting. All other components are specifically sorted out, the good material remains in the material stream.

The next sorting step is performed by another VARISORT+ FLASH CN sorting system. The special feature of this device is that by dividing the three-meter-wide conveyor belt and subdividing it into three chutes, sorting of six different fractions can be realized. On the left-hand conveyor track, the second sorting step is repeated in order to achieve a very high degree of purity in bottle sorting for the PET clear and light blue fraction. On the right lane, the material rejected from three sorting stages is returned via a re-sorting step to the first VARISORT+ N sorter. Futurapet thus achieves minimum material loss at maximum throughput rates.

Efficient fine sorting of PET flakes by FLAKE PURIFIER+

After pre-sorting by the VARISORT+ equipment, the clear PET bottles are shredded. Washing, drying, and air separation processes follow. Finally, fine sorting of the flakes is carried out by the Sesotec FLAKE PURIFIER+ sorting systems, which are equipped with three sensors. False colors, false polymer types, and metal contaminants are reliably and precisely separated from the PET flakes. An additional sorting track enables further purification of the rejected material, allowing the maximum amount of high-quality PET to be recovered. Pure and highest-quality rPET can be profitably fed into the cycle.



Efficient fine sorting of PET flakes by FLAKE PURIFIER+

Sesotec FLAKE SCAN material analysis system enables quality analysis within minutes

Futurapet is committed to ensuring that only the highest quality rPET leaves the plant. Each BigBag content is checked in the in-house laboratory by random sample analysis. For this purpose, Futurapet uses the FLAKE SCAN material analysis system from Sesotec. It enables efficient and precise quality analysis of the plastic flakes and quickly delivers reliable and reproducible results of the material sample. This means that a decision on the usability of the material can be made within a very short time. The integrated sensors reliably analyze material samples according to plastic types, colors and metal contaminants. Futurapet can supply the highest quality rPET flakes to the plastics industry and close the recycling loop.



Sesotec material analysis system FLAKE SCAN for quality analysis within minutes

The customer benefit: Highest quality rPET

Murat Yerli, Vice General Manager at Futurapet: "Sesotec is our partner when it comes to material sorting and analysis. The equipment works with the highest efficiency and delivers the highest quality. This is exactly what we are looking for. We don't just want to produce flakes, but the highest quality flakes in this area. On the one hand, this is our contribution to environmental protection and, on the other hand, our contribution to supplying the plastics processing industry with high-quality rPET."



Result: pure rPET

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Sesotec - an overview

The Sesotec group is one of the leading manufacturers of machines and systems for contaminant detection and material sorting. Product sales primarily focus on the food, plastics, and recycling industries.

www.sesotec.com



Metal detection systems



X-ray inspection systems



Sorting systems



Magnet systems