* **Pla.to Technology:** **First industrial solution for bottle-to-bottle recycling of body detergent bottles made of high-density polyethylene** **(HDPE)**
* **Joint water-saving project with** **Beiersdorf and Fraunhofer Institute**

*Görlitz, 19 May, 2022.* Pla.to Technology has just presented the first industrial technology solution for the bottle-to-bottle recycling of detergent bottles made of high-density polyethylene (HDPE). The clients for this project were Beiersdorf AG and the Fraunhofer Institute for Process Engineering and Packaging.

Used shampoo and shower gel bottles have been almost entirely reprocessed without any loss of quality in a water-saving process at the Pla.to technical facility in Görlitz. The rHDPE granulate obtained from bimodal high-density polyethylene was completely reintroduced into the production cycle, producing new detergent bottles solely from recycled granulate, that meet the quality standards of new products.

With this, Pla.to offers the technology for a closed HDPE cycle – without the addition of virgin granulate necessary in other processes. “Our solution is a sustainable and water-saving method to fully recycle HDPE in large quantities”, explains Pla.to Managing Director Heinz R. Schnettler.

**Plastic for the Cosmetic Industry with High Stability**

HDPE is very suitable for numerous applications due to its high stability and tensile strength. In the detergent industry, bottles are typically manufactured by extrusion blow molding and have a label attached. The cap is usually made of polypropylene (PP).

**Efficient Recycling with Minimal Wastewater**

In its in-house demonstration center, Pla.to has reprocessed the used bottles using its own equipment. Before recycling, they are first sorted by color with the caps and crushed using a granulator. A dry cleaner then removes residual ingredients inside the bottles without any wastewater. Stubborn contaminants are first soaked and then removed from the plastic using friction and hot water. The label adhesive is then removed and the material is mechanically and thermally dried. Finally, the air stream of the zig-zag separator separates the bottles and caps from labels particles according to their bulk density.

In order to separate the HDPE from the other components for reuse at the end, the polypropylene is separated using near-infrared spectroscopy (NIR). After compounding, it is regranulated into rHDPE and can be directly reused to produce new bottles.

**Just Like HDPE Bottles Made from Virgin Material**

In the project, Pla.to was able to produce 20,000 bottles through this method for recycling rHDPE. These bottles have passed all the necessary tests: They are dimensionally accurate, stable, odorless and have no imperfections such as specks or inclusions. Just like containers made from virgin material, they can be labeled and close tightly with a newly applied PP cap.

“This proves that HDPE can be fully, efficiently and sustainably recycled with low wastewater on an industrial scale,” emphasizes Managing Director Heinz R. Schnettler.

**About** **Pla.to Technology**

Pla.to GmbH develops, manufactures and sells machines and systems for recycling plastics. The main focus is on low-wastewater cleaning, washing and separation of waste material. Systems from Pla.to Technology are typically customized special machines.

With its innovative and efficient solutions, the company contributes to the sustainable and resource-saving use of plastics in industrial production. It supports processors in optimizing their production in a circular economy.

Headquartered in Görlitz, Saxony, the company employs 14 people and is active globally, including in the UK, the USA and the Czech Republic.

**Photos:**

Ein Bild, das drinnen, Boden, blau enthält.

Automatisch generierte Beschreibung

Photo 1:

With the help of a dry cleaner, contaminants such as paper labels and residual contents are defibered by high acceleration and impact forces. The system operates without wastewater (Photo: Pla.to Technology).

Ein Bild, das Boden, drinnen enthält.

Automatisch generierte Beschreibung

Photo 2:

In the zigzag separator, an air stream separates different plastic parts according to their bulk density. Light plastics are sucked upwards, heavy ground material falls downwards. (Photo: Pla.to Technology).

Ein Bild, das draußen enthält.

Automatisch generierte Beschreibung

Photo 3:

PET labels after zigzag sorting (Photo: Pla.to Technology).

Ein Bild, das Gans, Menge enthält.

Automatisch generierte Beschreibung

Photo 4:

HDPE and PP flakes before sorting by near-infrared spectroscopy (NIR) (Photo: Pla.to Technology).

Ein Bild, das drinnen, gefüttert, weiß, Zähler enthält.

Automatisch generierte Beschreibung

Photo 5:

rHDPE bottles with new PP cap (Photo: Pla.to Technology).

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