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Press Release

Highly economical process and technology solution for recycling PMMA

Coperion supplies plant for chemical recycling of PMMA to Renov8

Stuttgart, October 2022 – Coperion is supplying a complete system for the chemical recycling of PMMA (polymethyl methacrylate) to Renov8, a subsidiary of just right® based in JAFZA, Dubai, one of the leading manufacturers in plastics processing and manufacturing, specializing in sustainable solutions.

The Coperion system for the chemical recycling of PMMA will be installed at the KEZAD Polymers Park in Abu Dhabi, which is among the most popular vertically integrated Polymers downstream manufacturing eco-systems in the region. It will thermally convert PMMA into liquid rMMA in a continuous process. The system includes material handling, two ARW discharge agitators with discharge screws and two Smart Weigh Belt (SWB) feeders, as well as a ZSK 92 Mc¹⁸ twin screw extruder with 92 mm screw diameter, a vacuum system and a condenser. Key components of the system are produced in-house by Coperion.

Nilesh Jain, founder of Renov8, visited Coperion at its booth 14/B19 at K 2022 to sign the contract. The conclusion of the contract was preceded by extensive tests on the chemical recycling of PMMA at Coperion's Test Center.

Coperion solution for the chemical recycling of PMMA

October 2022

Coperion's process solution allows for the thermal recycling of PMMA to rMMA in a very economical, continuous process.

The PMMA recyclate is conveyed via a discharge agitator ARW and a discharge screw to a Smart Weigh Belt (SWB) feeder. This low-headroom gravimetric feeder weighs large quantities of bulk material at high accuracy and feeds it reliably into a ZSK twin screw extruder.

In the Coperion ZSK Mc¹⁸ twin screw extruder a great deal of mechanical energy is quickly introduced into the PMMA via the co-rotating twin screws thanks to the very high torque of 18 Nm/cm³. The temperature of the melt rises very energy-efficiently in a very short time. The material depolymerizes. Gaseous MMA is produced, which is reliably extracted via the degassing domes of a vacuum system and then converted into liquid rMMA in a condenser. Coperion's solution for chemical recycling takes place with significantly lower energy consumption than pyrolysis processes without extruders or compared to recycling with single screw extruders.

The chemical recycling system for Renov8 will allow the processing of two separate product streams. Thanks to its very good self-cleaning properties, PMMA with different light transmittances can be recycled on the same ZSK 92 Mc¹⁸ twin screw extruder in a very short time without any loss of quality.

Closing the loop through plastic recycling

Renov8 specializes in the recycling of polymethyl methacrylate (PMMA), polystyrene (PS), acrylonitrile butadiene styrene (ABS), polycarbonate (PC), polypropylene (PP) and polyethylene (PE). Located in KEZAD Polymers Park Abu Dhabi which is fully integrated with one of the fastest growing ports in the world, Khalifa port, the company's 30,000 m² site is dedicated to using closed-loop process solutions and best-in-class, efficient technologies to conserve resources, eliminate waste and save energy for a sustainable, long-term future.

October 2022

About Coperion

Coperion (www.coperion.com) is the global market and technology leader in compounding systems, feed systems, bulk goods systems, and services. Coperion develops, produces, and services plants, machinery, and components for the plastics, chemical, pharmaceutical, food, and minerals industries. Coperion employs 2,500 people worldwide in its two divisions: Polymer and Strategic Markets and Aftermarket Sales and Service, as well as its 30 sales and service companies. Coperion K-Tron is a Coperion brand.

About justright FZCO

justright FZCO (www.justrightinc.com) is a home-grown company, incorporated in 1999 and operating in JAFZA with several business verticals including manufacturing aluminum composite panels (ACP) and acrylic, providing construction and recycling solutions. The business is divided into three key industries: Advertisement & Signage, Building & Construction, Safety & Security, and Green solutions for sustainability.



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<https://www.coperion.com/en/news-media/newsroom/>

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Nilesh Jain, founder of Renov8, Fatima Al Hammadi, Chief Commercial Officer, KEZAD Group and representatives of Coperion, Renov8 and KEZAD Group signed the contracts for the new PMMA recycling system at Coperion's K show booth in Hall 14/B19. (f.l.t.r.: Jochen Schofer, Coperion; Simon Bier, Coperion; Jay Jain, Renov8; Marouane Mansour, Coperion; Massimo Serapioni, Coperion; Nilesh Jain, Renov8; Markus Parzer, Coperion; Khalid Al Marzooqi, KEZAD Group; Fatima Al Hammadi, KEZAD Group; Khalfan Al Muhairi, KEZAD Group; Cem Kurkcuoglu, KEZAD Group)

Photo: Coperion, Stuttgart Germany