

Press release

Neukirchen-Vluyn (Germany), March 17, 2020

## **Packaging industry: Efficiently remove recycled PET from metal filters**

### **Vacuum pyrolysis technology lowers costs and optimizes cleaning results**

Recycled PET (rPET) is increasingly being used to produce fruit and vegetable trays: Circular packaging is the buzzword here. Metal filters used in the production processes of large manufacturing plants have to be changed daily, partly replaced each shift, and rPET residues must be removed. "Our packaging customers use our particularly gentle and environmentally friendly vacuum pyrolysis technology to clean these filters," explains Virgilio Perez Guembe, thermal cleaning expert from SCHWING Technologies. Unlike lengthy manual procedures, this fully automated process only takes about eight to ten hours. "Our VACUCLEAN systems clean quickly and in a single operation, which saves not only time but manpower as well," emphasizes Perez Guembe, pointing out that users also benefit from optimized digital networkability of the systems.

### **Short cleaning times for rPET-contaminated filters**

Examples of these applications are approx. 85 x 35 cm (W x H) metal filters, which are used in the manufacturing process of fruit and vegetable trays. The producer, a Spanish packaging manufacturer, works with rPET. The company must clean its filters daily, using vacuum pyrolysis technology and SCHWING's special expertise in cleaning. Technical factors such as the individual cleaning time, the vacuum atmosphere, the exact temperature curve and the maximum temperature of the entire process were specifically tailored to the filter systems and this user's rPET. "To accelerate the cleaning process even further, we also made a loading basket for our customers that was specially adapted to the dimensions of the filters," reports SCHWING's expert.

### **Environmentally friendly cleaning process in the vacuum pyrolysis system**

Cleaning takes place in an electrically heated vacuum cleaning chamber, the temperature of which is measured directly at the filter. Perez Guembe describes the environmentally friendly cleaning process as follows: "So that a large part of the rPET can initially melt and flow out, the system heats up slowly and is gentle on the materials. The actual pyrolysis process that decomposes the rest of the polymer only starts at around 440 degrees Celsius." Remaining carbon is removed by a subsequent oxidation phase at around 450 degrees Celsius. All of this happens fully automatically and leaves almost no residue. If necessary, the last inorganic residues are removed manually with compressed air.

### **Digital integration of the VACUCLEAN cleaning system**

To digitally optimize the fully automatic cleaning process, the SCHWING development team has expanded the thermal vacuum pyrolysis system by several new components. In addition to a new touch panel with network connection, these digital components also include an internal data connection for data mining and digital system documentation in the SCHWING cloud. Further technical innovations include fully electronic flow measurement for catalyst supply air, a process signal lamp, and a revised fault reporting concept. "All of these measures significantly reduce cleaning times, which is particularly important for our customers in the packaging industry," says Perez Guembe.

Further information: <https://www.thermal-cleaning.com/en/cleaning-systems-and-accessories/vacuum-pyrolysis-systems.html>

Keywords: Thermal cleaning, filter cleaning, vacuum pyrolysis, vacuum pyrolysis technology, VACUCLEAN, PET removal, recycled PET, rPET, circular packaging, packaging industry, food packaging, fruit trays, vegetable trays

### **About SCHWING Technologies**

SCHWING Technologies has been operating for over 50 years and is the worldwide technological leader for high-temperature systems for thermal cleaning, thermo-chemical finishing and heat treatment of metal parts and tools. The owner-managed company designs, manufactures, and operates systems at its headquarters in Neukirchen-Vluyn in Germany's Lower Rhine region. Built upon the achievements of German engineering, the medium-sized business is globally the best-known specialist in the removal of plastics. Among SCHWING's approximate 2,500 international clients are companies from the plastics and fiber industries, as well as from the chemicals and automobile sectors. For every cleaning need, the company with its approximately 80 employees offers the most economically, ecologically and qualitatively best technology and cleaning solution. SCHWING is also a reliable service partner for contract cleaning by processing more than 250,000 tools and parts each year to the highest environmental and qualitative standards. So far, there has not been a single component that we have not been able to free from polymers and inorganic contaminants, confirm the three managing directors Ewald Schwing, Thomas Schwing and Alfred Schillert. Founded in 1969, the company celebrates its 50th anniversary in 2019 and opened SCHWING Technologies North America Inc., a new sales company in the USA, this year.

### **Press contact**

Nicola Leffelsend

SCHWING Technologies GmbH

Oderstraße 7

47506 Neukirchen-Vluyn

Germany

T +49 2845 930 146

redaktion@schwing-tech.com

[www.schwing-technologies.com](http://www.schwing-technologies.com)



Virgilio Perez Guembe is an expert in thermal cleaning and head of sales at SCHWING Technologies

Photo credit: SCHWING Technologies

Download: <https://drive.google.com/file/d/15t27vmC8qopPIO1UsYECWk3lXo9wKLmu/view?usp=sharing>



The thermal vacuum cleaning system VACUCLEAN from SCHWING Technologies cleans filters in the packaging industry within approx. eight to ten hours, using a fully automatic cleaning process

Photo credit: SCHWING Technologies

Download: <https://drive.google.com/file/d/1QXlfzLCwCujSbVTuh90dlow2KX65xF4C/view?usp=sharing>



rPET-contaminated metal filter before cleaning

Photo credit: SCHWING Technologies

Download: <https://drive.google.com/file/d/1wPF1cVvjJQ16lkPYzniPg7oegYOSzF2O/view?usp=sharing>



Metal filter in cleaned condition

Photo credit: SCHWING Technologies

Download: <https://drive.google.com/file/d/1qZNEHN-EjtHSaBqxPPqEzQuNS68KBvav/view?usp=sharing>



A total of eight rPET-contaminated metal filters can be accommodated in the individually adapted loading basket

Photo credit: SCHWING Technologies

Download: [https://drive.google.com/file/d/1\\_Qbl9iKMT8ysVzJ-ELmMVgabyLZtfEf3/view?usp=sharing](https://drive.google.com/file/d/1_Qbl9iKMT8ysVzJ-ELmMVgabyLZtfEf3/view?usp=sharing)



The rPET-contaminated metal filters are placed in the vacuum pyrolysis system in the loading basket  
Photo credit: SCHWING Technologies  
Download: <https://drive.google.com/file/d/1utWHBrsincXlaJkpg7W5komO-F6ncOng/view?usp=sharing>



The loading basket holds a maximum of eight filters in a single cleaning process  
Photo credit: SCHWING Technologies  
Download: <https://drive.google.com/file/d/1bYR1yxmeEsOUVTxAWoArUYsEkqXnSEoa/view?usp=sharing>



The process data are entered on the touch panel with network connection  
Photo credit: SCHWING Technologies  
Download: <https://drive.google.com/file/d/1Wq75b07MI-J1dxfpZUZkTqMfORU10R60/view?usp=sharing>



After the fully automatic cleaning process, the cleaned and cooled metal filters leave the vacuum pyrolysis plant

Photo credit: SCHWING Technologies

Download: <https://drive.google.com/file/d/1ftkMUpMyGZPC-iIjLjvD6bWloRnz5i/view?usp=sharing>



Possible residues can be easily removed with compressed air post-treatment

Photo credit: SCHWING Technologies

Download: [https://drive.google.com/file/d/1valqdN5OcfIVh4rKTBaHm7dum3\\_ZnDjM/view?usp=sharing](https://drive.google.com/file/d/1valqdN5OcfIVh4rKTBaHm7dum3_ZnDjM/view?usp=sharing)