



## **TPEI's NEW LABORATORY COMPOUNDING LINE DESIGNED FOR SMALLER LOT SIZES FOR HIGH-COST MATERIAL ADDITIVES**

LEHIGHTON, PA, USA -Technical Process and Engineering, Inc. (TPEI), a major manufacturer of compounding equipment for the plastics and rubber processing industries, will introduce its new 1FRE lab compounding line at ANTEC 2010 in Orlando, FL on May 16-20 (Booth #505). Developed in response to customer requests for smaller lot sizes for high-cost material additives, the line can run trial sizes as small as 1-2 lbs, making it highly economical for proving the property requirements of a new material.

"In new fields of materials such as bio-plastics and nano-composites, many trials may be necessary to prove the property requirements of a new material," explained Harold Schafer, CEO at TPEI. "Additives such as nano-materials, bio-polymers, and medical grade compounds can be very expensive, sometimes up to several hundred dollars per gram. Because they are expensive, and because many trials may be necessary, customers will order smaller lot sizes. In addition to its ability to run a 1-2 lb sample, the 1FRE has sustained production rates of up to 50 lbs per hour, allowing it to serve dual purposes."

Engineered for precision compounding of thermoplastics and some types of rubbers, the 1FRE can be configured for strand or underwater pelletizing, or material can

be taken from the mixer discharge to be molded into plates. Unlike other lab compounding lines that use 480 volt three-phase power, the 1FRE runs with 240 volt single-phase power, which means it can be plugged into a standard 240 volt outlet. "Because it requires no special power hook up, and can be easily wheeled into position, lab installation is easier and cheaper," added Schafer.

The 1FRE incorporates a TPEI extended body E-mixer and J-Block feed throat extruder. "The E-mixer has a larger feed throat capacity," explained Schafer. "It solves the problem of feeding fluffy or hard to feed materials that may want to bridge on smaller feed throat openings." It has a T-orientation, which aligns the mixer discharge to the extruder screw. The J-Block feed throat extruder is specifically designed to accept the hot feed strip discharge from the mixer. This allows the extruder to receive a more uniform material feed and makes a more uniform pressure at the die end of the extruder producing a more uniform pellet. "Pellet uniformity is critical for a superior end product," added Schafer.

Unlike other compounding methods that are limited to 30 to 40% fill rates, the IFRE is excellent at fill rates as high as 90%. It has multiple temperature control zones for heating and cooling (three for the mixer and two for the extruder), which allow for superior residence time control. It also features a patented sealing arrangement, which keeps powdery materials from flowing out of the end of the mixer. "Our seal design introduces an air flow to keep the powder out of the seals, thereby greatly increasing their useful life," said Schafer. "This eliminates both a maintenance clean-up problem and a safety hazard."

The 1FRE has direct scale-up to larger compounding systems up to 15,000 lbs per hour. It is designed to provide interchangeable configurations for improved flexibility in the lab. "Configuration changes can be done in ½ hour for multiple trial setups," added Schafer.

For over 30 years, TPEI has been in the forefront of innovation in the design and manufacture of state-of-the-art compounding equipment and replacement parts. For more information about the 1FRE lab compounding line, please contact TPEI at 570-386-4777, or visit [www.tpei.com](http://www.tpei.com)

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**About Technical Process and Engineering, Inc. (TPEI)**

Headquartered in Lehigh, Pennsylvania, TPEI is a major manufacturer of compounding equipment for the plastics and rubber processing industries. From compounding lines capable of processing a wide variety of thermal plastics and rubber polymers, to rotor repairs and restacking, machine alterations and rebuilds, and the design and fabrication of complete turnkey systems, TPEI is the single source supplier for processing facilities looking to keep their equipment running profitably.