



DSM introduces high-temperature PPA, ForTii Ace, to the OPE market

DSM Engineering Plastics has long held a foothold in the Outdoor Power Equipment (OPE) industry with our wide array of innovative plastics. With the introduction of ForTii[®] Ace, our next-generation, high-temperature PPA, DSM will continue to bring high performance and durability to the OPE industry.

With pressure to meet changing government regulations and stay current with ever-evolving design, safety and comfort innovations, OPE manufacturers are constantly in search of novel and revolutionary technology. DSM is bringing that technology to the forefront of the OPE industry with our latest application of ForTii Ace.

ForTii Ace is a PPA based on 4T chemistry, which outperforms traditional polymers by remaining stable in temperatures up to 160° C and exhibiting high chemical resistance. The four-carbon chain is comprised of over 50% aromatic monomer content—the highest percentage in its category—yielding optimized crystallization morphology and high crystal modulus. These key composition features differentiate ForTii Ace from other PPAs currently on the market and contribute to its superiority in extreme conditions.

When a leading OPE company began experiencing a loss of market share and a high number of performance-related warranty returns due to PA66-GF45 material issues, DSM offered a viable solution. Utilizing our commercially available ForTii Ace GF 40 formula, we were able to provide an improved alternative to existing plastics, resulting in higher performance and extended product life. Set to launch in early 2018, the renovated string trimmers feature ForTii Ace as the material in the carburetor's insulation wall.

With the previous PA66-GF45 material, consumers increasingly reported diminished performance due to the instability of the string trimmer engine assembly in the presence of elevated temperatures. The increased heat generated during continuous operation caused torque loss in the insulation wall mounting screws and warpage at the part interface, resulting in high creep and separation of the gasket seal.

The manufacturer remedied the issue with the addition of metal compression inserts to sustain the screw torque requirement, as well as adhesive at the gasket for seal retention. While this did improve performance issues, the additional parts and labor drove up the overall production cost and created a new set of concerns.

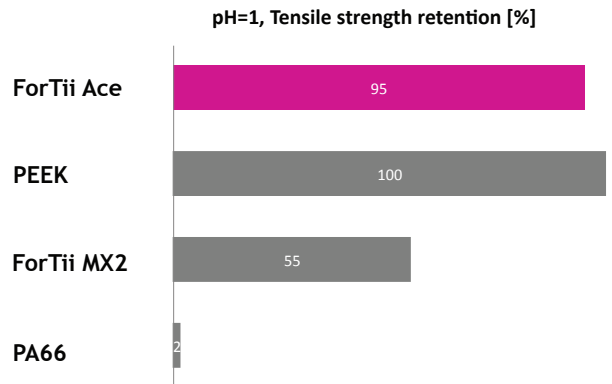
Engineers at DSM alleviated these concerns with the introduction of ForTii Ace into the OPE market. Its unique properties—including greater stiffness, low creep and dimensional stability at high temperatures—enable torque retention stability, thus eliminating the need for compression limiters and gasket adhesive. Combined with the elimination of secondary labor costs incurred for these additional operations, the ForTii Ace MX52 solution delivered significant overall system cost savings to the manufacturer.

Compared with alternative materials, ForTii Ace exhibits an equivalent mold shrink rate, cycle time and overall processability. This allows molders to utilize their existing injection molding equipment, resulting in cost savings.

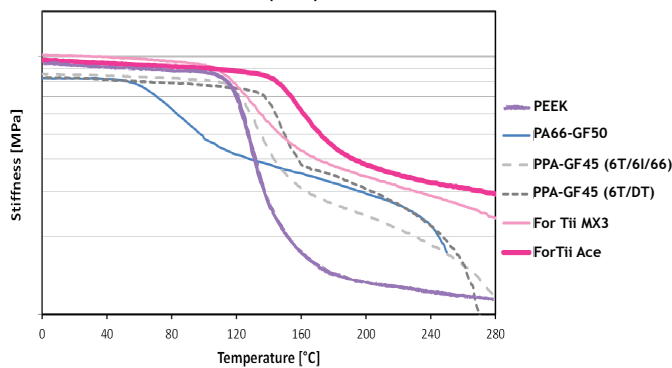
In addition to cost-saving benefits for molders and OEMs, consumers will also see increased value through higher performance and extended product life. Environmentally, improved engine efficiency and reduced fuel consumption will result in fewer emissions, helping to meet updated regulations.

DSM engineers are continuously creating materials to increase efficiency, reduce costs and extend product life in the OPE market. The introduction of ForTii Ace into the industry is the latest of our novel and innovative approaches to improving technology with our high-performance polymers.

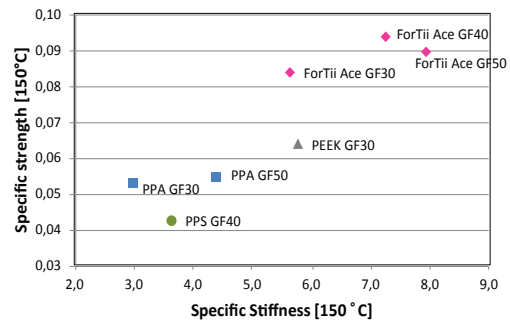
Chemical Resistance



Linear Performance Profile



Superior mechanical performance at 150 °C



Contact us:

Want to learn about other OPE applications offered by DSM? Or want to share your challenge with us? Contact your local DSM office.

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