



A New Generation of Thermoforming Plug Assist Materials for Food Packaging Applications

Manufacturers of food and beverage packaging need to ensure materials, machinery and processes support the creation of packaging that is both effective and meets required design aesthetics. Following feedback from customers, Trelleborg's applied technologies operation has developed three new thermoforming plug assist materials to enable manufacturers to increase their productivity, reduce downtime and maintain the high product quality needed for food packaging.

Over a six-month period, Trelleborg collaborated with several key manufactures of food packaging across Europe to develop new material formulations. With two PHD Chemists leading the development project, Trelleborg's R&D team looked at the existing thermoforming plug assist technology, with the aim of enhancing the materials and their properties to meet customer requirements.

Zaki Akhtar, Product Development Manager, Trelleborg's applied technologies operation in Rochdale, England, says: **"Our customers need a range of materials, each of which is designed for a specific plug assist application; versatile materials that run at elevated temperatures, high strength materials that can easily produce deep draw end products, or materials that are tough and durable for multiple production runs. Customer feedback on our new range is excellent and we are really pleased to have achieved our original aim."**

Designed for general forming and cost-sensitive applications, Syntac® CIS (Core Industrial Solutions) is suitable for use up to +180 °C. With the option of additional pre-fitted customer specific inserts, the material can be polished to achieve an extremely smooth surface finish, making it perfect for everyday tooling applications.

In high-heat, high strength tooling applications, Syntac® HTS (High Temperature Solutions) provides excellent material uniformity, whilst maintaining product quality. Suitable for use up to +220 °C, the material offers excellent uniformity, maintaining hardness even at maximum temperature, to produce high clarity packaging.



Allowing for super-fine detailing with reduced breakage, Syntac® STS (Strong Tough Solutions) is wear and abrasion resistant, providing high levels of repeatability whilst maintaining product quality. Suitable for use up to +180 °C, Syntac® STS is strong, tough, and durable with consistent performance, making it suitable for food packaging requiring a deeper draw (mold) and high clarity finish.

Trelleborg's Syntac® CIS and Syntac® HTS materials are made from high-grade epoxy resin and hollow glass microspheres (HGMS), while Syntac® STS uses a novel thermoset polymer matrix. Each of the new Syntac® materials are available in sheet, bar and cast versions. Syntac® is easy to machine and finish, offering a cost-effective alternative to traditional aluminum materials.

The latest materials in the Syntac® range are available as a castable system. By casting the plugs instead of machining, customers can reduce the amount of wasted material and save time by removing the need for CNC machining or outsourcing for those customers without access to in-house CNC-machining.

Cast plugs can be used instantly or quickly finished, reducing delays, and providing a fast hot-swappable solution. As part of the casting process, Trelleborg can add in customer specific aluminum inserts to support the easy attachment of the plugs to either the ceiling or bed plate of manufacturing equipment.

Kerry Lyons, Global Business Manager, Trelleborg's applied technologies operation in Rochdale, England, says: **"Our Syntac® range of materials are specifically developed to meet the changing needs of our customers and are engineered to be lightweight, durable and tough, offering a cost-effective alternative solution to wood, nylon and aluminum."**



For packaging applications that require a deeper plug, Syntac® STS provides a hard wearing, abrasion resistant solution. Suitable for use up to +180 °C, Syntac® STS is durable, and supporting high levels of repeatability, ensures consistent, high quality performance. Packaging manufactured using Syntac® STS can have super-fine detailing with reduced breakages, improving production efficiencies.

Packaging for fresh produce or designed to highlight the bright colors and attractive appearance of goods, such as confectionary, requires a high clarity finish. Poor plug assist material selection can result in clouding to the end product, or an uneven, inconsistent finish. Syntac® HTS and Syntac® STS produce a high clarity end product across a range of temperatures, meeting the requirement for application specific materials.

Kerry Lyons, continues: **"Our Syntac® range of materials are available off the shelf with shorter lead-times than previously offered, with manufacturing taking place in our UK facility. Downtime is a real issue for manufacturers, by helping customers to select the right material, they can increase efficiency, improving productivity and uptime."**

Contact Us

Trelleborg Applied Technologies delivers innovative and reliable solutions, materials and smart systems that maximizes performance for our customers. Our vast range of specialized, customizable materials ensure peace of mind at every stage of your project. With reliable and efficient project management and manufacturing, we endeavor to take performance to new levels by achieving your goals safely, on time and within scope.



Worldwide: +44 1706 716610



Email: appliedtechnologies@trelleborg.com

