Sekisui Alveo introduces two innovative thin foam solutions for advanced bonding applications

High-temperature soft PP foam and halogen-free flame-retardant PE foam

Sekisui Alveo, a leading manufacturer of high-performance polyolefin foams, has announced two major product innovations addressing growing industry demand for sustainability, high-performance bonding and advanced material safety: a new thin, temperature-resistant soft polypropylene (PP) foam for demanding adhesive tape applications, and a new thin, halogen-free, flame-retardant polyethylene (PE) foam extending the Alveolit TL HF product line down to 1 mm.

Soft PP foam for high-temperature adhesive bonding

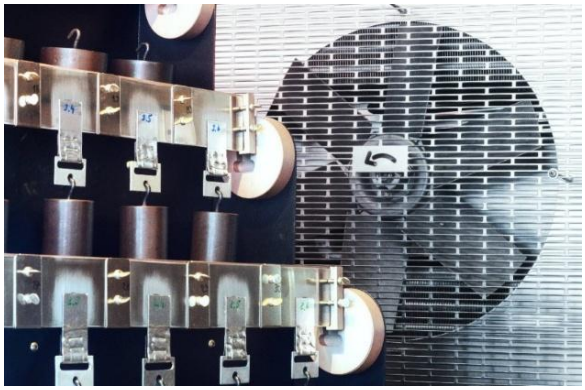
The idea for this new Alveolit PP foam began with a persistent challenge from customers: Is there a foam that is soft, strong, sustainable and temperature-resistant all at once? Sekisui Alveo's development team embraced the challenge and created a thin, high-performance PP foam that maintains its cellular structure and stability even at temperatures of up to 150°C.

A unique polymer blend

The foam consists of a blend of a PP-based polymer skeleton for temperature resistance and strength, a rubber-like polymer matrix for softness, and a specialty polymer that enables compatibility and a fine-cell foam structure.

Proven in the lab and on the road

Application test results for the new foam have been positive. The material has proven stable in double-sided tape applications at elevated temperatures of up to 150°C. At such temperatures, standard PE foam is no longer stable and loses its cellular structure. Until now, polyurethane foams were the only materials able to provide good bonding performance under these harsh conditions.



Alveolit TP SE has also already proven itself in standard automotive interior trim applications, where it is used under leather, foil and cloth in interior parts from several car manufacturers.

Lukas Berger, Application Development Manager in Adligenswil, Switzerland, says: “This PP foam sets a new benchmark for thin, heat-resistant tape carriers. It performs where other foams lose their cellular structure.”

Lightweight and performance

The new polyolefin foam has a significantly lower area weight than PUR (polyurethane)-based foam materials used in equivalent high-temperature double-sided tape applications. This enables lighter end products without compromising performance.

Availability

Alveolit TP SE is currently available in thicknesses ranging from 1.0 mm to 4.0 mm. Additional thicknesses can be developed to meet specific application requirements.

Thin, halogen-free flame-retardant PE foam

The second innovation from Sekisui Alveo was prompted by the search for PE foams that meet various fire-regulation standards while also fulfilling market requirements for sustainability, namely significantly reduced toxicity while maintaining flexibility and performance. This new development is now also available in a thickness of 1 mm.

Toxicity

The new PE foam is free of halogens and heavy metals and is compliant with REACH and RoHS requirements. It does not contain halogenated compounds with heavy-metal synergists, such as combinations of polybrominated hydrocarbons and antimony trioxide. Many such substances are extremely durable, accumulate in the environment and are considered carcinogenic.

Fire safety

Extensive testing of this new foam component alone in Sekisui Alveo’s laboratories shows compliance with the UL94 HBF (HF-1), ISO 3795 and FMVSS302 horizontal flammability standards, as well as the more stringent vertical flammability criterion EN 13501-1 (Class E). As a component, compliance with fire-regulation standards depends on the final product design and testing under application conditions for final certification.

A typical characteristic of this foam component in the event of fire is that it produces white smoke, which may improve visibility for rescue teams.

Lightweight

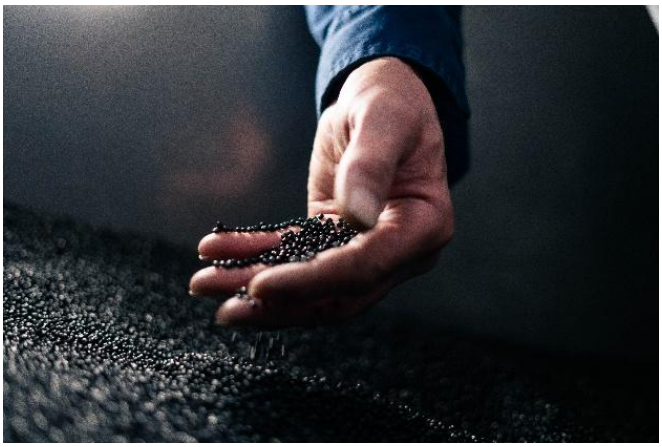
The new foam is also lighter in area weight than comparable PE-based components containing metal oxides or volume-increasing materials that deliver equivalent flame-retardant performance.

Availability

Until now, thicknesses from 3 mm to 10 mm were available within the Alveolit TA HF and Alveolit TL HF foam-grade family. The TL HF grade is now also available in a thickness of 1 mm. Other thicknesses are possible depending on application requirements.

Designed to be adhesive-friendly

Both new foams, the soft PP foam and the halogen-free flame-retardant PE foam, are designed to be adhesive-friendly and compatible with a wide range of pressure-sensitive adhesives. This enables the industry to develop new products for a variety of mounting and bonding requirements, whether for industrial applications such as appliances, building and construction applications such as mounting or insulation tapes, transportation uses such as car emblem fixation, or other bonding applications.



Sustainability in focus

As a component, this PP-based foam can help achieve a very good rating compared with an equivalent component made with high-density PUR foam in the final product to be certified.

Thanks to their lower density, these polyolefin foams have a significantly lower carbon footprint than PUR or acrylic foams and are therefore a more sustainable option. Their carbon footprint can be reduced further by using polypropylene made from renewable raw materials. Such foams are available with ISCC PLUS certification.

Likewise, the new halogen-free flame-retardant foams are well suited to manufacturers seeking certification for their final products from the Cradle-to-Cradle Products Innovation Institute. As a component, this halogen-free foam can help achieve a very good rating compared with an equivalent component containing brominated flame retardants and heavy metals in the final product to be certified.

Sekisui Alveo AG

Sekisui Alveo AG, headquartered in Adligenswil, Switzerland, develops and produces extruded and cross-linked polyolefin foams used in adhesive coating, automotive, flooring, construction, including artificial turf, as well as industrial and consumer goods. Its solutions are developed in close co-operation with processing companies and manufacturers, and are tested and approved in the company's Application Service Laboratory.

Sekisui Alveo was established in 1971 and today employs 500 people. Besides its head office in Adligenswil, Switzerland, and two production plants in Roermond, the Netherlands, and Bad Sobernheim, Germany, the company has local offices throughout Europe. Sekisui Alveo is owned by Sekisui Chemical Co. Ltd.

For more information, visit here or contact the company via communications@SekisuiAlveo.com.

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