

New HYBRAR™ SV-series: Excellent damping performance - even at high temperatures

The new triblock copolymers in Kuraray's HYBRAR™ SV-series ensure optimum damping of noise and vibrations at high temperatures – ideal for use in vehicles

Hattersheim, October 2019. Modern vehicles are expected to be lighter and quieter. Therefore, the automotive industry needs materials that effectively dampen strong vibrations and noise - even in demanding conditions. Kuraray, a leading speciality chemical producer, is introducing a new series of its HYBRAR™ brand of high-performance triblock copolymers. The glass transition temperature of these materials is above room temperature, so they have optimum damping properties in applications at elevated temperatures up to 80 °C. The HYBRAR™ materials are compatible with various plastics such as polyolefins, polystyrene and ABS. To achieve excellent damping properties over a wide temperature range, various HYBRAR™ types can be combined to produce materials that meet the required specifications.

“There are already many materials with very good noise and vibration damping properties at room temperature and in the low temperature range. However, in vehicles in particular, there are many areas where temperatures are higher, That’s where such materials tend to reach their limitations,” says Jan Sebastian Weber, Senior Sales Manager at Kuraray. “The new SV-series of our HYBRAR™ styrene block copolymers is a unique group of materials whose glass transition temperature is above room temperature. ” HYBRAR™ SV-series 7119 and SV-series 7318 are hydrogenated products with very good damping properties at elevated ambient temperatures. HYBRAR™ SV-series 7119 grades have excellent noise and vibration damping properties at temperatures between 40 °C and 80 °C. At 40 °C, HYBRAR™ SV-series 7318 significantly dampens frequencies between 1 and 100,000 Hertz.

Noise and vibration damping across a wide range of frequencies

The HYBRAR™ brand of styrene block copolymers (SBC) have polystyrene end-blocks and a polydiene mid-block with a high vinyl content. HYBRAR™ has a far higher $\tan \delta$ peak than conventional styrene block copolymers. In addition, the various grades cover a wide frequency range - from very low frequencies such as the resonance of car bodies to very high frequencies caused by friction

between glass components. These properties allow ideal absorption of various types of noise and vibration. HYBRAR™ is heat and weather-resistant and highly suitable for use in challenging conditions.

A special structure: ideal for many different purposes

Due to their special structure, these materials can be used in blends with polyolefins, polystyrenes and acrylonitrile-butadiene-styrene (ABS) copolymers. This allows the production of compounds with damping properties tailored specifically to different applications. In the automotive industry, for example, applications include vehicle interiors, cooler grilles, shock absorbers and gaskets. At temperatures between 20 °C and 60 °C, a 10 percent addition of HYBRAR™ SV-series 7319 to ABS materials results in a significant increase in the loss factor value at a frequency of 2,000 hertz. An addition of 10 percent HYBRAR™ SV-series 7119 achieves the maximum loss factor value in a temperature range of 40 °C to 80 °C.

“Noise reduction is becoming increasingly important when designing modern vehicles. Quieter engines, for example in electric vehicles, make rattling and squeaking far more audible,” says Jan Sebastian Weber. “Combining various HYBRAR™ types enables processors to produce materials with ideal damping properties over a very wide temperature range. Our new HYBRAR™ SV-series extends our broad product portfolio so users can obtain damping even at elevated temperatures.” In addition to the automotive sector, damping properties of HYBRAR™ are used in a wide variety of other areas – for example, in sports equipment, grips on tools, electronic appliances and in construction and architecture.

Captions/source of photos: Kuraray



[Photo 1] A unique structure for a wide variety of applications: Kuraray's HYBRAR™ triblock copolymers have polystyrene end-blocks and a polydiene mid-block with a high vinyl content. That makes them ideal for blends – for example with polyolefins, polystyrene or ABS. Even adding a small amount of the new HYBRAR™ SV-series copolymers significantly improves the damping properties of ABS at elevated temperatures.



[Photo 2] From golf clubs for high performance applications to electric engines: HYBRAR™ offers a range of damping materials for a wide variety of applications – from cars to golf clubs. Properties such as good mouldability and high heat and weather resistance make HYBRAR™ from Kuraray the product of choice for many different applications. The new materials in the HYBRAR™ SV-series extend the applications of this product range to elevated temperatures.

About Kuraray

Established in 1991, Kuraray Europe GmbH is based in Hattersheim, near Frankfurt am Main, Germany. In 2018 the company generated annual sales of EUR 690 million. It has approximately 700 employees in Germany at its sites in Hattersheim, Frankfurt and Troisdorf. Kuraray is a global speciality chemicals company and one of the largest suppliers of industrial polymers and synthetic microfibres for many sectors of industry. Examples are KURARAY POVAL™, Mowital®, Trosifol® and CLEARFIL™. Kuraray Europe also has around 200 employees at six other European sites. They are also working on the development and application of innovative high-performance materials for a wide range of sectors, including the automotive, paper, glass and packaging industries, as well as for architects and dentists.

Kuraray Europe is a wholly owned subsidiary of the publicly listed company Kuraray Co., Ltd., which is based in Tokyo, Japan, and has more than 10,000 employees worldwide and sales of EUR 4.8 billion.

This press release including pictures is also available on the Internet at:
<https://www.kuraray.eu/presse/>

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