

Bosch ESP control module made from hydrolysis-resistant Ultradur®

Case Study

The ESP 9, latest generation of Bosch's electronic stability program (ESP), is part of the safety package in many vehicles today. Its control housing is molded from the especially hydrolysis-resistant Ultradur® B4330G6 HR from BASF. This special compound from the PBT family satisfies the very demanding requirements faced by engineering plastics in hot-humid environments.

The new Ultradur® B4330G6 HR retains its material properties such as high strength, elasticity and impact strength during long-term testing at 85°C and 85% relative humidity. It withstands test periods of over 5000 hours without noticeable characteristics of aging. This is several times longer than for the hydrolysis-resistant PBT used to date. Many materials compared already show significant degradation after only one third of this time.

An additional benefit of the hydrolysis-resistant Ultradur® is its stability during processing. Its rheological behavior, i.e. its flow characteristics, remain stable even after longer residence times in an injection molding machine. This is not something that can be taken for granted, as many additives that are used to improve the hydrolysis resistance can reduce the flowability quite considerably, with flowability worsening as the residence time and processing temperature increase. The material is also suitable for laser marking and acts as a very good absorbing partner during laser welding.

