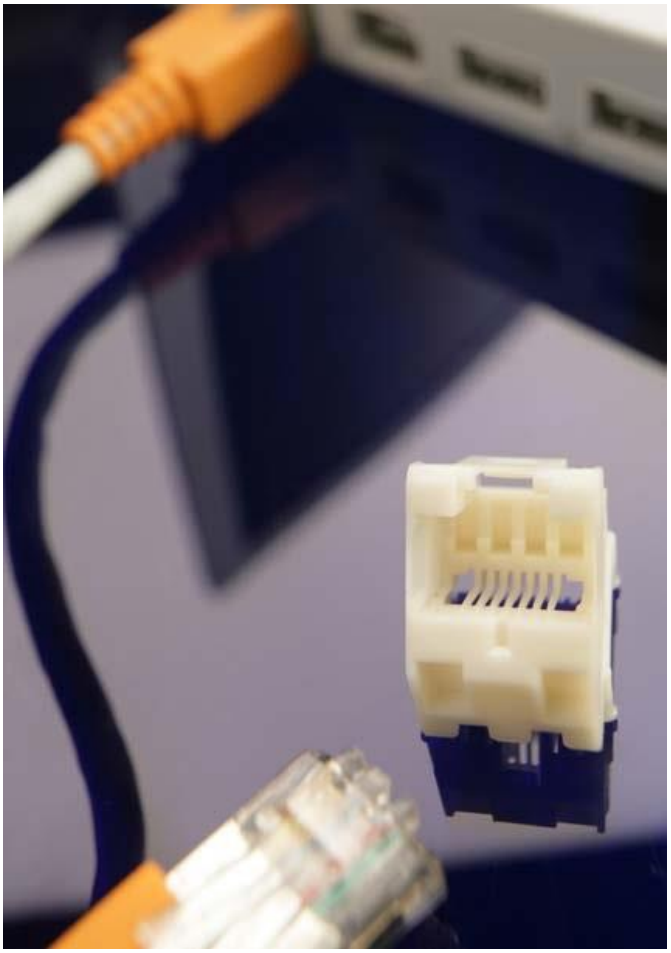
Plug-in connector for data media made from Ultradur®

Case Study

The first series component made from Ultradur® High Speed, BASF's PBT (polybutylene terephthalate) with exceptional flow properties, is a plug-in connector for data media used as a counterpart for cables in laptops, telephones, and other devices with an ISDN or DSL connection. The component is manufactured from Ultradur® High Speed B4300 G2, a variant containing 10 percent glass fibres.



The small and very intricate component weighs just 1.5 grams and is manufactured in quantities of several millions per year. The customer was intrigued by the material's excellent flow, which enabled some of the problems involved in the production of the small connector to be solved: The complex tool with eight cavities is difficult to fill using conventional PBT. In addition, inclusion of air was often found on the thin connector ribs, which led to a high degree of scrap. Use of the PBT has not only led to improvements in the filling and de-aerating of the tool, irritating deposits are also avoided, and the company was able to reduce the cycle time by 20 to 25 percent. Just a few months after its market launch, Ultradur® High Speed has thus found its first series application.

Ultradur® High Speed is BASF's PBT with exceptionally good flow. It was showcased at K 2004 and depending on its glass fibre content, flows at least twice as far as comparable standard Ultradur® grades. The additive particles, which are between 50 and 300 nanometres in size, have a considerable influence on rheology and reduce the melt viscosity by up to 50 percent while allowing the plastic to retain its non-Newtonian behaviour. The other characteristics such as mechanical properties, shrinkage, and heat resistance are scarcely affected by the modification. As the customer was able to confirm in the initial series application, this not only helps to significantly reduce the cycle time. Difficult, thin-walled parts are also easier to manufacture.