

Case Study

Gearbox oil sumps made of Durethan® AKV 35 H2.0 901510



Figure 1 All-plastic gearbox oil sump ZF 6HP26/32

The gearbox oil sump made of the LANXESS engineering plastic Durethan AKV 35 H2.0 has been in series production since 2002.

This was the first oil sump to be made entirely of plastic, with all the metal parts being replaced by plastic ones. [IBS Filtran](#) worked with LANXESS and ZF Friedrichshafen to develop this oil sump, which was first installed in the automatic transmission of the BMW 7 Series (E65/E66). Today, it is used in a range of BMW, Aston Martin, Jaguar, Ford and Land Rover models (see Figure 1).

The oil sump combines various functions. It serves as an oil collector as well as filter housing. Integrated magnets absorb metallic contamination.

The material chosen for the oil sump was the high-performance polyamide Durethan AKV 35 H2.0.

Material: Durethan AKV 35 H2.0 901510

Manufacturer: [IBS Filtran GmbH](#),
ZF Friedrichshafen

Industry: Automotive

It offers the best combination of stiffness, strength and resistance to automatic transmission oils at both subzero temperatures and high continuous operating temperatures.

Furthermore, because the plastic oil sump is made of Durethan AKV 35 H2.0, it is 50 % lighter than corresponding metal ones.

Durethan AKV 35 H2.0 has the following impressive properties:

- High stiffness and strength
- Very good impact strength, as proven in special tests using simulated stone impact
- Very good resistance to chemicals and heat
- Very good long-term heat resistance, particularly to aggressive automatic transmission oils
- Low tendency to shrinkage and warpage
- Ideal practical thermal expansion coefficients compared with aluminium

This information and our technical advice - whether verbal, in writing or by way of trials - are given in good faith but without warranty, and this also applies where proprietary rights of third parties are involved. Our advice does not release you from the obligation to verify the information currently provided - especially that contained in our safety data and technical information sheets - and to test our products as to their suitability for the intended processes and uses. The application, use and processing of our products and the products manufactured by you on the basis of our technical advice are beyond our control and, therefore, entirely your own responsibility. Our products are sold in accordance with the current version of our General Conditions of Sale and Delivery.

Trial Products (grade designations beginning with the codes DP, TP, KL or KU)

This is a Sales Product at the developmental stage (a Trial Product). For this reason, no assurances can be given as to type conformity, processability, long-term performance characteristics or other production or application parameters. No definitive statements can be made regarding the behavior of the product during processing or use. The purchaser/user uses the product entirely at his own risk. The marketing and continued supply of this material are not assured and may be discontinued at any time.

© = LANXESS Deutschland GmbH 2008, SCP Business Unit | all rights reserved

www.durethan.com

Page 2 of 2, Edition 13.02.2008, TI 2006-045

