Case Study

Fuel filter housing made of Durethan® DP BCF 30 X H2.0

Figure 1 Fuel filter housing

Material: Durethan ® DP BCF 30 X H2.0

Manufacturer: MANN+Hummel, Germany

Maximum performance, long service life and low fuel consumption are essential requirements for a modern car engine.

To guarantee proper functioning of the injection systems for gasoline and diesel engines, high-quality fuel is vital. The primary task of the fuel filter is to filter out any solid inorganic or organic impurities present in the fuel.

For the manufacture of parts such as fuel filters, MANN+HUMMEL uses Durethan® DP BCF 30 X H2.0, a polyamide 6 reinforced with 30 % glass and carbon fibers.

Compared with the conventional metal design, the plastic filter housing offers a number of advantages, such as:

- A large processing window
- High dimensional accuracy
- Design freedom
- Weight savings

However, the disadvantage of plastics compared with metals is their low electrical conductivity, which can lead to the unwanted build-up of static on the filter while in service. Durethan® DP BCF 30 X H2.0 solves this problem. The carbon fiber content significantly increases the conductivity of the plastic.

Based on similar proven materials, Durethan® DP BCF 30 X H2.0 offers a range of properties that makes it ideal for the production of fuel filter housings and similar pressure-vessels:

- Enhanced electrical conductivity
- Good dynamic load resistance
- High strength
- Suitable for ultrasonic or friction welding
- Fuel resistance (also to new biofuels)
- Good surface quality

Durethan® and Pocan® are registered trademarks of LANXESS Deutschland GmbH

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee, and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.

Developmental Product
Any product designated as a developmental product is not considered part of the LANXESS Corporation line of standard commercial products. Complete commercialization and continued supply are not assured. The purchaser/user agrees that LANXESS Corporation reserves the right to discontinue this product without prior notice.

Typical Properties
Property data is provided as general information only. Property values are approximate and are not part of the product specifications.

Health and Safety
Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling LANXESS products mentioned in this publication. Before working with these products, you must read and become familiar with the available information on their hazards, proper use, and handling. This cannot be overemphasized. Information is available in several forms, e.g., material safety data sheets (MSDS) and product labels. Consult your LANXESS Corporation representative or contact the Product Safety and Regulatory Affairs Department at LANXESS. For materials that are not LANXESS products, appropriate industrial hygiene and other safety precautions recommended by their manufacturer(s) must be followed.

Regulatory Compliance
Some of the end uses of the products described in this brochure must comply with applicable regulations, such as the FDA, NSF, USDA and CPSC. If you have any questions on the regulatory status of any LANXESS engineering thermoplastic, consult your LANXESS Corporation representative or contact the LANXESS Regulatory Affairs Manager.

Regrind
Where end-use requirements permit, regrind may be used with virgin material in quantities specified in individual product information bulletins, provided that the material is kept free of contamination and is properly dried (see maximum permissible quantities and drying conditions in product information bulletins). Any regrind used must be generated from properly molded/extruded parts, sprues, runners, trimmings and/or film. All regrind used must be clean, uncontaminated, and thoroughly blended with virgin resin prior to drying and processing. Under no circumstances should degraded, discolored, or contaminated material be used for regrind. Materials of this type should be discarded. Improperly mixed and/or dried regrind may diminish the desired properties of a particular LANXESS product. It is critical that you test finished parts produced with any amount of regrind to ensure that your end-use performance requirements are fully met. Regulatory or testing organizations (e.g., UL) may have specific requirements limiting the allowable amount of regrind. Because third party regrind generally does not have a traceable heat history or offer any assurance that proper temperatures, conditions, and/or materials were used in processing, extreme caution must be exercised in buying and using regrind from third parties. The use of regrind material should be avoided entirely in those applications where resin properties equivalent to virgin material are required, including but not limited to color quality, impact strength, resin purity, and/or load-bearing performance.

Note:
The information contained in this publication is current as of January, 2010. Please contact LANXESS Corporation to determine if this publication has been revised.

http://us.durethan.com