

## Case Study

### Filter housing made of Durethan® AKV 35 H2.0 for electrical discharge machines



Cross section of a filter element

**MANN+HUMMEL** has been a specialist in the field of industrial filter technology for nearly six decades. The company boasts a wealth of know-how, and offers an extensive range of services and products. **MANN+HUMMEL's** customers include large companies in the automotive and industrial manufacturing industry, such as manufacturers of construction equipment, electrical discharge machines and industrial washing machines.

The above photo shows a filter element for an electrical discharge machine. In the electrical discharge machining (EDM) process, effective filtration of the dielectric fluid – in this case, fully demineralized water – is essential to ensure the high quality of the machined component.

**Material:** Durethan AKV 35 H2.0 901510 SR1

**Manufacturer:** MANN+HUMMEL, Germany

The housing is made of Durethan® AKV 35 H2.0. This plastic, a polyamide 66 reinforced with 35 % glass fibers, is an economical, corrosion-free alternative to other materials. Compared with a metal version, a weight savings of 30 % was achieved for the housing.

Because the filter element has to withstand pressures of up to 3 bar during application, the material has to meet the following stringent demands:

- High strength
- Very good weld strength
- Good bonding properties
- Good chemical resistance



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#### 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 February, 2010. Please contact LANXESS Corporation to determine if this publication has been revised.

