

## Case Study

### Insulation rings made from Pocan® DP 2004



Figure 1 Thermal insulation rings for coffee machines

The extended Household Appliance Standard IEC 60335-1 covers the electrical, mechanical and thermal dangers as well as fire and radiation risks posed by electrical appliances used in the home and for similar purposes.

If household appliances are to be used unsupervised, the materials used to produce them must meet high glow wire test requirements.

[LANXESS Deutschland GmbH](http://www.lanxess.com) has developed new polyesters which meet the requirements stipulated by the Household Appliance Standard. These materials not only demonstrate high glow wire resistances but are also halogen-free and flame-retardant. They are therefore consistent with the current trend for halogen-free alternatives which is also found in the area of flame-retardant polyesters and are supplied as non-reinforced and fiberglass-reinforced grades.

**Material:** Pocan® DP 2004

**Industry:** Electrical/Electronics

Pocan® DP 2004 is a non-reinforced polyester containing a halogen- and antimony-free flame retardant. In accordance with IEC/EN 60335-1, it is suitable for use in unsupervised household appliances. A value of 800 °C is entered on the UL Yellow Card for the glow wire ignitability temperature (GWIT) and a value of 960 °C for the glow wire flammability index (GWFI).

The creep resistance of Pocan® DP 2004 according to CTI is listed in the highest PLC category (> 600 V), which greatly reduces the risk of a short circuit occurring and the risk of appliance faults as a result of creepage. Thanks to a PLC classification of 2 in the HWI test and 0 in the HAI test and a V-2 classification to UL 94, Pocan® DP 2004 can be widely used in insulation materials (UL 508).



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#### 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.

#### Flammability

Flammability results are based on small-scale laboratory tests for purposes of relative comparison and are not intended to reflect the hazards presented by this or any other material under actual fire conditions.

#### 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.

#### Color and visual effects

Type and quantity of pigments or additives used to obtain certain colors and special visual effects can affect mechanical properties.

#### Note:

The information contained in this publication is current as of October, 2008. Please contact LANXESS Corporation to determine if this publication has been revised.

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