

## Case Study

Socket combination unit housing made of (PBT+PC) blend – dimensionally stable and chemically resistant



Figure 1 Socket combination unit

**ABL SURSUM**, with its extensive, high-quality product range, is one of the leading independent manufacturers of electrical products in Germany. The company's innovative inventions, such as the SCHUKO earthed plug and socket system and the first screw-in circuit breaker with electromagnetic tripping, provided the basis for the subsequent technological development of ABL SURSUM's present product range. With around 7,000 products, the company always has the right solution for wiring systems in buildings and industry and for other electrical systems and switchgear.

True to the motto "if you don't go forwards you go backwards", the new generation of housings for

**Material:** Pocan<sup>®</sup> (PBT+PC) blend

**Manufacturer:** ABL SURSUM; Germany

switch and socket combination units is made of Pocan<sup>®</sup>, a tailor-made plastic developed by LANXESS. It is a blend of polybutadiene terephthalate and polycarbonate (PBT+PC) that cleverly combines the advantages of its two individual components to make the product ideal for coping with extremely complex stresses and loads.

The good flow properties of the blend mean that it can be used without any problems to manufacture the relatively large housing sections. The parts have a smooth, easy-to-clean surface, and this is where the plastic's good chemical resistance proves invaluable.



Particular attention was paid to good low-temperature impact resistance, which makes the parts less sensitive to knocks and blows.

Other advantages of the new Pocan<sup>®</sup> material include its high dimensional stability, which is achieved through low, approximately isotropic shrinkage, its minimal warpage tendency and low

water absorption. The combination of these properties and the structure of the housing allows IP44 classification, which means that it can also be used, for example, in applications with high atmospheric humidity, splashing water or wide temperature fluctuations. Typical areas of application are commercial kitchens, car washes and laundromats.

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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.

#### 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 August, 2009. Please contact LANXESS Corporation to determine if this publication has been revised.

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