

DANTHANE® I 25K-20F-COMPOUND

DESCRIPTION

The TPU compound DANTHANE® 125K-20F-Compound is a melt coating raw material based on TPU/PTFE in the form of granules. This type is especially suitable for the melt calendaring process. For the coating of transport elements such as conveyor belts, coating of drive sections (flat drive belts) and for the coating of technical textiles, which are acting for the production of transport boxes, big-bags, hoses and others it can be used here the specific characteristics of the product DANTHANE® 125K-20F-Compound. This special compound will be used for coatings, which must be protected against contamination and which must show a high tendency to slide.

PRODUCT CHARACTERISTIC

	Values	Method
Aspect	White coloured pearl granule (RAL 9011)	
Density	1,20 g/cm ³ at 20 °C	DIN 53.479
Melt Flow Index (MFI)	190 °C/10 kg/10 min.: 65 - 95 g	ISO 1133
Shore hardness	86 A	DIN 53.505
Melting range	140 – 145 °C	KOFLER
Softening range	120 – 125 °C	KOFLER
Hydrolysis resistance	Good	
Solubility	Good soluble in DMF and THF. The resistance of the films produced with DANTHANE® 125K-20F-Compound to all organic solvents is good, respectively the films will show a swelling behaviour by the influence of these solvents.	

MECHANICAL VALUES

	Values	Method
Tear strength	30 MPa	DIN 53.504
Elongation at break	500 %	DIN 53.504
Modulus 100 % elongation	5,5 MPa	DIN 53.504
Modulus 200 % elongation	6,0 MPa	DIN 53.504
Modulus 300 % elongation	8,5 MPa	DIN 53.504
Compression set (70 hrs./23 °C)	30 %	DIN 53.517
Compression set (24 hrs./70 °C)	80 %	DIN 53.517
Abrasion loss	25 mm ³	DIN 53.516
Glass transition temperature (Tg) (DSC, 10 °C/min.)	-27 °C	DIN 51.007

CHARACTERISTICS OF THE FILMS PRODUCED WITH DANTHANE® 125K-20F-COMPOUND

	Values	Method
Aspects of the films	White, elastic	
Softening range	140 – 145 °C	KOFLER
Film processing temperature	120 – 180 °C	
Dry cleaning resistance	Good	
Washing resistance	Good	
Hydrolysis and microbe resistance	Sufficient	

APPLICATION

DANTHANE® 125K-20F-Compound is needed by the hot melt coating of industrial textiles. The coated textiles and industrial woven fabrics are being used to produce transport and drive elements, flexible beverage containers and containers for solid goods, health and safety protection, etc. For an optimal processing DANTHANE® 125K-20F-Compound is pre-plasticized by the use of an extruder. The hot melt is transferred directly to the hot melt calender rolls. The pre-plasticizing is also possible direct on the heated calender rolls. The hot melt of DANTHANE® 125K-20F-Compound can be applied to transfer paper to produce films with a different strength. The TPU-films can be laminated to the supporting textiles. For impregnation and as bonding agent (adhesive), to these textiles we recommend our special polyurethane adhesives of the DANCOLL® range. Especially we recommend the product DANCOLL® 245-10. A direct hot melt coating is also possible with DANTHANE® 125K-20F-Compound. DANTHANE® 125K-20F-Compound is further used as a binder by the production of TPU-colour and additive masterbatches. DANTHANE® 125K-20F-Compound is applied in the shape of granules or grinded into powders depending on the kind of processing.

PROCESSING

For optimum processing characteristics DANTHANE® 125K-20F-Compound should be dried before processing. The drying occurs by hot air or vacuum drying at a temperature range of 90 °C to 100 °C for 2 hours.

Extrusion

For the processing of DANTHANE® 125K-20F-Compound it will be needed an extruder with the following characteristics:

1. L/D ratio between 25:1 and 30:1
2. The extruder screw must have 3 zones and a compression ratio between 2:1 and 3:1 (usually, the screws that are used for poly- ethylene extrusion give good results).
1. The extruder screw should have a continuous regulation device and a working power higher than for processing other plastics.
2. The extrusion speed should be low (12 to 60 r.p.m., depending on its diameter) so as to avoid material degradation due to shearing.
3. Filters: As filters it should be used disks with holes of 1,5 to 5 mm (depending on the screw and die). The number of meshes/cm³ will depend on the end product that is produced.
4. It has to take care of a sufficient pressure built-up.

For the extrusion we recommend the following extruder setting:

Feed zone:	150 – 160 °C
Compression zone:	160 – 170 °C
Metering zone:	175 – 185 °C
Die:	175 – 185 °C

COMPATIBILITY

DANTHANE® 125K-20F-Compound can be compounded with other aromatic and partly even with aliphatic polyurethane granules. DANTHANE® 125K-20F-Compound shows even a good compatibility to PVC coating raw materials and is used thereby as modification material for PVC. All DANTHANE® compounds in form of granules can be coloured with colour concentrates. A homogenous mixture must be reached. Especially we recommend our colour concentrates in form of granules which are produced on PU base. Here we deliver the DANCOLOR®-MB colour masterbatches and DANADD® additive masterbatches.

STORAGE

If correctly stored in a dry and cool place in its original packing, this product can be stored for at least 6 months. The product needs to be protected against humidity.

PRODUCT SAFETY

DANTHANE® 125K-20F-Compound is under normal hygienic processing conditions a harmless material. Please observe that TPU granules may cause electrostatic sparks. If larger quantities are being processed in the melt, vapour extraction must be ensured.

* For further data we refer to our Safety Data Sheet

PHYSIOLOGICAL CHARACTERISTICS

With regard to physiological aspects, the product DANTHANE® 125K-20F-Compound is a harmless material to a large extent. For the release for applications in the food and medical sector it must be fulfilled corresponding requirements. If you intend to use the product in these two sectors, we kindly ask you to contact us. This product meets the positive list acc. to FDA, 21CFR, §177/2600, for applications in the food area.

RECYCLING

Clean and uncontaminated waste of DANTHANE® 125K-20F-Compound, which was separated from the substrate, may be grinded and reused as grinding material or may be added to new TPU material.

PACKAGING

25 kg special antistatic bags, packed on pallets of 750 kg. The pallets are wrapped with PE shrink films.



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