

DANTHANE® I 26K-EL-COMPOUND

DESCRIPTION

DANTHANE® 126K-EL-Compound is a polyester based polyurethane elastomer which was compounded with carbon black for electrically conductive and antistatic characteristics. DANTHANE® 126K-EL-Compound can be processed by hot melt calendaring, flat film extrusion and by injection moulding. This special TPU is suitable for the production of films/foils, textile coatings and several plastic injection moulding parts.

PRODUCT CHARACTERISTIC

	Values	Method
Aspect	Black granules	
Density	1,20 g/cm ³ at 20 °C	DIN 53.479
MFR	80 – 130 g/10 min/220 °C/10,0	
Shore hardness	92 A	DIN 53.505
Melting range	175 – 185 °C	KOFLER
Softening range	150 – 170 °C	KOFLER
Hydrolysis resistance	Very good	
Chemical resistance	Good resistant against oil, fuel, ester, ketone and hydrogen chloride.	

MECHANICAL VALUES

	Values	Method
Tensile strength	40 MPa	DIN 53.504
Elongation at break	430 %	DIN 53.504
Tear strength	110 kN/m	DIN 53.515
Abrasion loss	28 mm ³	DIN 53.516
Electrical conductivity	120.00 – 190.00 KΩ	

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

	Values	Method
Aspects of the films	Black, elastic	
Softening range	150 - 170 °C	KOFLER
Film processing temperature	140 - 240 °C	
Dry cleaning resistance	Very good	
Washing resistance	Very good	
Hydrolysis- and microbe resistance	Good	

APPLICATION

DANTHANE® 126K-EL-Compound is a special TPU type for calendaring and extrusion of electrically conductive or antistatic TPU foils and films. The direct extrusion of coating films on textiles or other supporting materials is possible. Typical applications are the processing of membrane foils, conductive decor foils, foils for hoses, tubes and cables, coatings of conveyor belts and drive belts.

PROCESSING

For optimum results DANTHANE® 126K-EL-Compound has to be dried before processing. The pre drying can be made in circulation dryers, vacuum dryers or hot air tunnel dryers. The drying temperature is mentioned under point 5.

Good processing properties at the melt calendaring can be reached if the granules have been pre-plasticated by means of an extruder. To reach optimum processing characteristics we recommend the following extruder 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 polyethylene extrusion give good results).
3. The extruder screws should have a continuous regulation device and a working power higher than for processing other plastics. The speed of the extruder should be low (12 to 60 r.p.m., depending on its diameter) so as to avoid material degradation due to shearing.
4. The filters used should be disks with holes of 1,5 to 5 mm (depending on the screw and the die), and screen packs (the no. of meshes/cm² will depend on the end product that is processed), so as to create a pressure built-up.
5. Pre drying should be made for 1 to 2 hours at 100 – 115 °C.

Extrusion:

We recommend the following extruder setting for extrusion:

Feed zone:	170 – 180 °C
Compression zone:	180 – 190 °C
Metering zone:	190 – 200 °C
Die:	195 – 200 °C

Injection moulding:

We recommend the following settings for injection moulding:

Injection moulding machine:	30 t
Screw diameter:	26 mm
L/D ration:	23
Max. hydraulic pressure:	210 bar
Injection mould:	
Injection moulding tool:	120 x 120 x 2 mm

Processing conditions for injection moulding:

Feed zone:	195 °C
Compression zone:	200 °C
Metering zone:	210 °C
Die:	210 °C
Injection pressure:	80-110 bar
Injection speed:	3,1 sec.
Mould filling pressure:	70 bar
Mould filling time:	15 sec.
Injection moulding temperature	32 °C
Cooling time:	15 sec.
Screw speed:	75-80 rpm

COMPATIBILITY

DANTHANE® 126K-EL-Compound can be compounded and mixed with flame resistant- and demoulding additives. Precaution has to be taken to get a homogenous mixture. In any parts by weight ratio mixtures with the soft type DANTHANE®125K-EL-Compound (SH A83) are possible.

STORAGE

If stored correct, cool and dry in its original packaging, the storage time of the product is at least 6 months. The product has to be protected against humidity.

PRODUCT SAFETY

DANTHANE® 126K-EL-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 information we refer to our Safety Data Sheet

PHYSIOLOGICAL CHARACTERISTICS

DANTHANE® 126K-EL-Compound is in its chemical structure according to the recommendation of the BGVV (Bundesgesundheitsamt) and FDA (FOOD and DRUG-ADMINISTRATION for the application and production of food and implements. The rules and recommendations must be kept.

RECYCLING

Clean and uncontaminated waste of DANTHANE® 126K-EL-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 heat-sealed, moisture proof multilayer bags, made of PE/Aluminium/PE. The bags are packed on pallets of 750 kg. The delivery of 750 kg pallets with PE shrink wrapping film meets the requirements of the F.R.G. transport packing regulations. Additional PE-lined cardboard bigbags of 700 kg net weight are available.




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