

DANTHANE® 192E-BLACK COMPOUND

DESCRIPTION

DANTHANE® 192E-Black Compound is a thermoplastic polyurethane compound which is already dyed in the colour black acc. RAL 9005. It is a high quality polycaprolactone polyester based TPU compound which is suitable for extrusion and for injection moulding applications. The shore hardness of this product is approx. A93. This compound is very suitable for automotive interior applications, cable extrusions and the production of diverse technical moulding injection parts.

PRODUCT CHARACTERISTIC

	Values	Method
Aspect	Black regularly granulate RAL 9005	
Density	1,17 g/cm ³ at 20 °C	DIN 53.479
MFI	220 °C/3,80 kg/10 min: 55- 90 g	
Moisture content	< 0,05 %	MQSA 44
Shore hardness	93 A	DIN 53.505
Melting range	184 – 194 °C	KOFLER
Softening range	175 – 185 °C	KOFLER
Hydrolysis resistance	Good	
Chemical resistance	Good resistance to oil, fuel, ester, ketone and chlorinated hydrocarbon.	

MECHANICAL VALUES

	Values	Method
Tensile strength	40 MPa	DIN 53.504
Elongation at break	430 %	DIN 53.504
Modulus at 100% elongation	10 MPa	DIN 53.504
Modulus at 200% elongation	16 MPa	DIN 53.504
Modulus at 300% elongation	21 MPa	DIN 53.504
Tear strength	130 kN/m	DIN 53.515
Abrasion loss	25 mm ³	DIN 53.516
Compression set (24 hours at 70 °C)	45 %	DIN 53.517
Compression set (70 hours at 23 °C)	25 %	DIN 53.517
Glass transition temperature (Tg) (DSC 10 °C/min)	-34 °C	DIN 53.007

* The a.m. values are guide lines for this product. they are not a constituent part for the product specification. The standard specification for this product you will receive together with the certificate of quality.

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

	Values	Method
Aspects of the films	Black, shiny, elastic	
Softening range	175 - 185 °C	KOFLER
Film processing temperature	150 - 220 °C	
Dry cleaning resistance	Good	
Washing resistance	Very good	
Hydrolysis- and microbe resistance	Good	

APPLICATION

DANTHANE® 192E-Black Compound is suitable for the processing of many technical parts on TPU basis. It is used for the production of films, hoses and tubes, rods, profiles, cable coatings ear tags, wheels and castors, sieve and filter plates, shoe soles and shoe heels, seal rings and diverse blow form parts.

PROCESSING

To ensure optimum processing characteristics DANTHANE®192E-Black Compound should be dried prior to the processing. Drying is made by hot air drying or vacuum drying at 100-110 °C for a period of 1 to 2 hours

Extrusion

In accordance with our experience, the characteristics of the extruder that are suitable for processing DANTHANE® 192E-Black Compound are the following ones:

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.

We recommend the following extruder setting for extrusion:

Feed zone:	190 – 200 °C
Compression zone:	195 – 210 °C
Metering zone:	200 – 220 °C
Die:	190 – 210 °C

Injection moulding:

For the injection moulding we recommend:

Feed zone:	195 °C
Compression zone:	200 °C
Metering zone:	210 °C
Die:	210 °C
Injection pressure:	85 bar
Injection speed:	3 sec.
Mould filling pressure:	50 bar
Mould filling time:	15 sec.
Mould temperature:	35 °C
Cooling time:	30 sec.
Screw speed:	approx. 180 r.p.m

Processing conditions for injection moulding:

Feed zone:	195 °C
Compression zone:	200 °C
Metering zone:	210 °C
Die:	210 °C
Injection pressure:	85 bar
Injection speed:	3 sec.
Mould filling pressure:	50 bar
Mould filling time:	15 sec.
Mould temperature:	35 °C
Cooling time:	30 sec.
Screw speed:	ca. 180 r.p.m

COMPATIBILITY

The particular DANTHANE® 192E-Black Compound can be compounded with all the usual UV-stabilizers, sliding waxes, flame protection and demoulding aid. DANTHANE® 192E is compatible with all DANADD® additive masterbatches in the mentioned mixing ratio.

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® 192E-Black 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

With regard to toxic aspects, the granules are considered to be harmless to a large extent. However, to obtain a release for the product's application in the food- and medical sector, certain requirements have to be met. If you intend to use the product in these two sectors, we kindly ask you to contact us in case of questions.

RECYCLING

Clean and uncontaminated waste of DANTHANE® 192E-Black 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 bags with humidity protection, packed on a pallet with 500 kg respectively 750 kg. This TPU compound can also be delivered in bigbags or in carton boxes with 500 kg content.




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