

# PEARLCOAT® 168K

Thermoplastic Polyurethane Elastomer

**PEARLCOAT® 168K** is a polyether-based TPU, supplied in form of translucent, colorless pellets, offering adequate hardness, excellent low-temperature flexibility and very good hydrolysis resistance.

## APPLICATIONS

**PEARLCOAT® 168K** is used in melt coatings on textile substrates, for end-uses in industrial coatings (for life-jackets, etc.) obtained by extrusion and calendering.

Physical Property	Test Method	Typical Values *
Density @ 20°C	DIN 53.479	1.11 g/cm <sup>3</sup>
Shore Hardness	DIN 53.505	82 A
Tensile Strength	DIN 53.504	25 MPa
Elongation @ Break	DIN 53.504	650 %
Modulus @ 100% Elongation	DIN 53.504	5 MPa
Modulus @ 300% Elongation	DIN 53.504	7.5 MPa
Tear strength	DIN 53.515	75 kN/m
Compression Set (70h / 23°C)	DIN 53.517	25 %
Compression Set (24h / 70°C)	DIN 53.517	35 %
Abrasion Loss	DIN 53.516	25 mm <sup>3</sup>
Melting Range (MFI=10)	MQSA 111	150 – 160 °C
Tg. (DSC, 10°C / min.)	DIN 51.007	-49 °C

\* These are typical values & should not be used for establishing specifications.

\*\* Temperature at which MFI = 10 g/10 min @ 21.6 kg.

## WORKING INSTRUCTIONS

In accordance with our experience, the characteristics of the extruder which are suitable for processing **PEARLCOAT® 168K** are the following:

1. L/D ratio between 25:1 and 30:1
2. The extruder screw must have 3 zones and a compression ratio in between 2:1 and 3:1 (Usually, the screws that are used for Polyethylene extrusion give good results).
3. The extruder screw should have a continuous regulation device and a working power higher than for processing other plastics.
4. The speed of the extruder should be low (12 to 60 rpm, depending on its diameter), so as to avoid material degradation due to shearing.

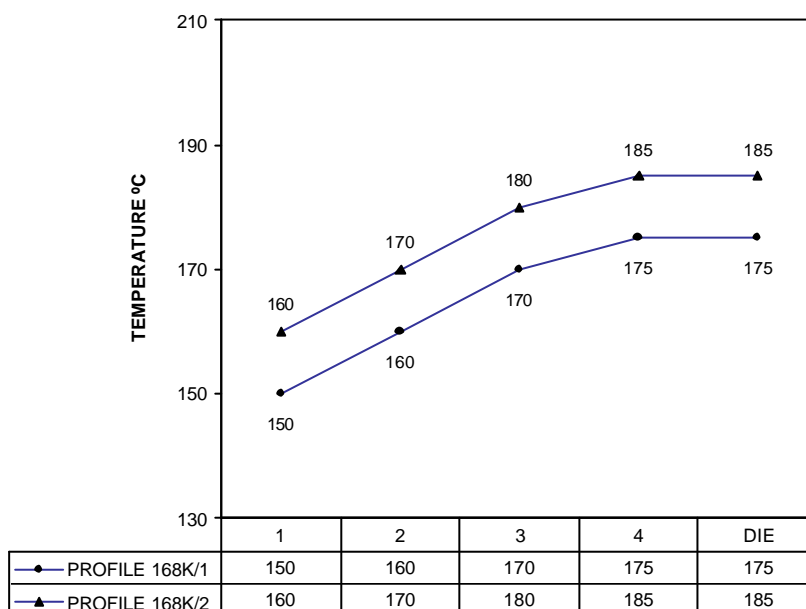
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5. The filters used should be disks with holes of 1.5 to 5 mm. (depending on the screw and the die), and screen packs (the nr. of meshes /cm<sup>2</sup> will depend on the end product that is processed), so as to create a pressure built-up.

For optimum results, previous drying of the product during 2 hours at 100-110° C is advisable, in a hot air circulatory, vacuum or desiccant-air dryer.

The suggested processing-temperature profiles for film extrusion (flat film) are depicted in the figure below.



#### EXTRUDER & CONDITIONS

TYPE.- 30/25D (L/D=25:1), COOLING.- Air, SCREW.- 3:1, SPEED.- 50 rpm  
BREAKER PLATE.- --, FILTER PACK.- --, THICKNESS DIE.- 0,2 mm, PRE-DRYING.- 1h @105 °C

## HEALTH AND SAFETY

A safety data sheet on **PEARLCOAT® 168K** is available, with all information related to safety.

The ingredients of **PEARLCOAT® 168K** comply with F.D.A. regulations, as described under 21 CFR, §177.2600 "Rubber Articles intended for Repeated Use" when **PEARLCOAT® 168K** is used in coatings and adhesives which are in contact with food.

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## PACKAGING

PEARLCOAT® 168K is packaged in heat-sealed, moisture proof multi-layer bags of 25 Kg net weight made of PE/Aluminium/PE. Bags are shipped on pallets of 750 Kg. Additionally, PE-lined cardboard gaylords of 700 Kg net weight are available.

## STORAGE

Material received from Merquinsa should be inspected to assure containers are not damaged during transportation before being stored prior to use. PEARLCOAT® 168K should be kept in a cool (15-25°C) and dry environment prior to being processed. Standard practice of consuming resin on first-in first-out basis should be employed.

For more information, please feel free to contact us at [www.merquinsa.com](http://www.merquinsa.com)