

# PEARLCOAT® 165K

Thermoplastic Polyurethane Elastomer

PEARLCOAT® 165K is a polyether based TPU, supplied in form of translucent, colorless pellets, combining hardness with excellent low-temperature flexibility and very good hydrolysis resistance.

Physical Property	Test Method	Typical Values *
Specific Gravity	ASTM D-792	1.12
Shore Hardness	ASTM D-2240	90 A
Tensile Strength	ASTM D-412	4359 psi
Modulus @ 100% Elongation	ASTM D-412	1015 psi
Modulus @ 300% Elongation	ASTM D-412	1740 psi
Elongation @ Break	ASTM D-412	450 %
Tear Strength	ASTM D-624 (Die C)	571 lb/in
Compression Set (70h / 73°F)	ASTM D-395	25 %
Compression Set (24h / 158°F)	ASTM D-395	35 %
Abrasion Loss	DIN 53.516	25 mm <sup>3</sup>
Melting Range (MFI=10)	MQSA 111	329 – 347 °F
Tg (DSC, 50°F / min)	DIN 51.007	- 45 °F

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

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

## APPLICATIONS

PEARLCOAT® 165K is used in melt coatings on textile substrates, for end-uses in industrial coatings (for life-jackets, etc.) obtained by extrusion and calendaring.

## WORKING INSTRUCTIONS

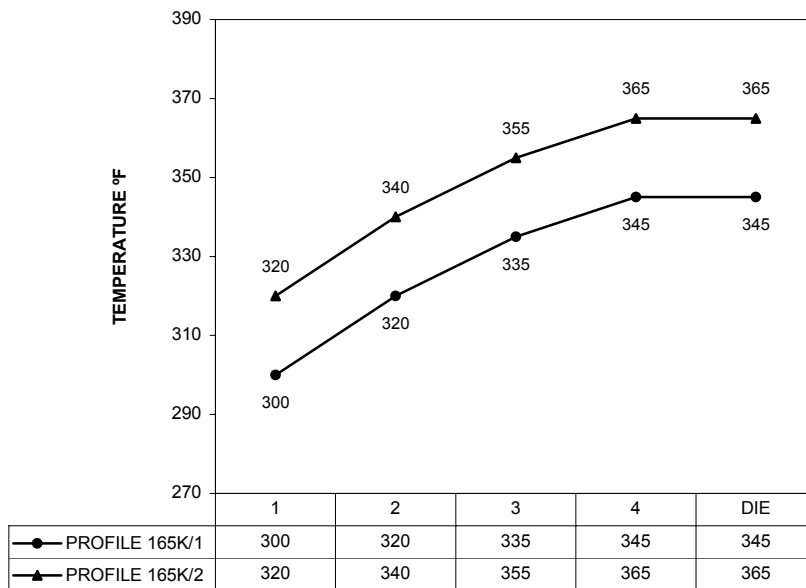
In accordance with our experience, the characteristics of the extruder that are suitable for processing PEARLCOAT® 165K are the following:

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.
5. The filters used should be disks with holes of  $\frac{1}{16}$  to  $\frac{3}{16}$  in. (depending on the screw and the die), and screen packs (the nr. of meshes /in<sup>2</sup> will depend on the end product which is processed), so as to create a pressure built-up.

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For optimum results, previous drying of the product during 2 hours at 194-212° F 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 @220 °F

**HEALTH AND SAFETY**

A safety data sheet on **PEARLCOAT® 165K** is available, with all information related to safety.

Merquinsa's Products are sold subject to Merquinsa's General Sales Conditions printed on the back of invoices and other shipping documents (available upon request). This is correct information based on our experience, and is given in good faith and without compromise. Each purchaser bears full responsibility for the application, use and processing of Merquinsa's products described herein, as well as their suitability to the purchaser's specific application, as this is beyond Merquinsa's control.

## PEARLCOAT® 165K

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The ingredients of **PEARLCOAT® 165K** comply with F.D.A. regulations, as described under 21 CFR, §177.2600 "Rubber Articles intended for Repeated Use" when **PEARLCOAT® 165K** is used in coatings and adhesives which are in contact with food.

### PACKAGING

**PEARLCOAT® 165K** is packaged in heat-sealed, moisture proof PE bags of 25 Kg net weight. 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 165K** should be kept in a cool (60-75 °F) 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)