

PEARLTHANE® 11T85E

Thermoplastic Polyurethane Elastomer

PEARLTHANE® 11T85E is a polycaprolactone copolyester based TPU, supplied in form of translucent, colourless pellets, combining hardness with excellent mechanical properties. It is recommended for extrusion applications.

TYPICAL PHYSICAL PROPERTIES

Property	Test Method	Typical Values *
Density @ 20°C	DIN 53.479	1.16 g/cm ³
Shore Hardness	DIN 53.505	86 A
Tensile Strength	DIN 53.504	35 MPa
Elongation @ Break	DIN 53.504	650 %
Modulus @ 100% Elongation	DIN 53.504	6 MPa
Modulus @ 300% Elongation	DIN 53.504	11 MPa
Tear Strength	DIN 53.515	90 kN/m
Abrasion Loss	DIN 53.516	25 mm ³
Moisture Content	MQSA 44	< 0.1 %
Melting Range (MFI=10**)	MQSA 111	179 – 189 °C
Tg (DSC, 10°C/min.)	DIN 51.007	- 41° 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

For optimum results, previous drying of the product during 1-2 hours at 100-110° C is advisable, in a hot air circulatory, vacuum or desiccant-air dryer.

EXTRUSION

In accordance with our experience, the characteristics of the extruder that is suitable for processing PEARLTHANE® 11T85E are the following:

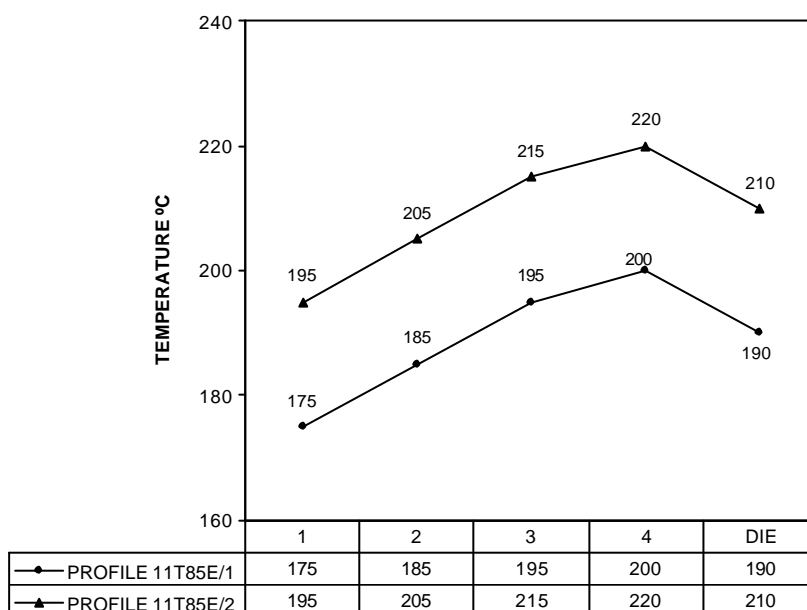
1. L/D ratio between 25:1 and 30:1
2. The extruder screw must have 3 zones and a compression ratio in between 2:1 and 3:1 (usually, the screws that are used for Polyethylene extrusion give good results).
3. The extruder screw should have a continuous regulation device and a working power higher than 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 no. of meshes /cm² will depend on the end product that is processed), so as to create a pressure built-up.

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



EXTRUDER & CONDITIONS
 TYPE.- 30/25D (L/D=25:1), COOLING.- Air, SCREW.- 3:1, SPEED.- 20-50 rpm.,
 BREAKER PLATE.- --, FILTER PACK.- --, THICKNESS DIE.- 0,2 mm, PRE-DRYING.- 1 h @ 105 °C

CHARACTERISTICS OF THE FILM

Appearance	: Colourless, elastic, translucent
Softening point	: 175-185 °C MQSA 91 (Kofler)
Dry cleaning resistance	: Excellent

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APPLICATIONS

PEARLTHANE® 11T85E when extruded, is used for making films, tubing, profiles, etc.

HEALTH AND SAFETY

A safety data sheet on PEARLTHANE® 11T85E is available, with all the information related to safety.

PACKAGING

PEARLTHANE® 11T85E 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 the containers are not damaged during transportation before being stored prior to use. PEARLTHANE® 11T85E 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

Our **TECHNICAL SERVICE** will answer any inquiries about our product and its applications.