

PEARLTHANE® 12K85

Thermoplastic Polyurethane Elastomer

PEARLTHANE 12K85 is a standard polyester-based TPU, supplied in form of translucent, colorless pellets, combining hardness with excellent mechanical properties. It can be easily processed by cast film and blown film extrusion.

TYPICAL PHYSICAL PROPERTIES

Physical Property	Test Method	Typical Values *
Specific Gravity	ASTM D-792	1.19
Shore Hardness	ASTM D-2240	85 A
Tensile Strength	ASTM D-412	5100 psi.
Elongation @ Break	ASTM D-412	600 %
Modulus @ 100% Elongation	ASTM D-412	870 psi.
Modulus @ 300% Elongation	ASTM D-412	1450 psi.
Tear Strength	ASTM D-624 (Die C)	828 lb/in
Abrasion Loss	DIN 53.516	26 mm ³
Melting Range	MQSA 70 (Kofler)	310 – 330 °F
Tg (DSC, 50°F / min)	DIN 51.007	- 17° F

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

WORKING INSTRUCTIONS

In accordance with our experience, the characteristics of the extruder those are suitable for processing **PEARLTHANE 12K85** are the following:

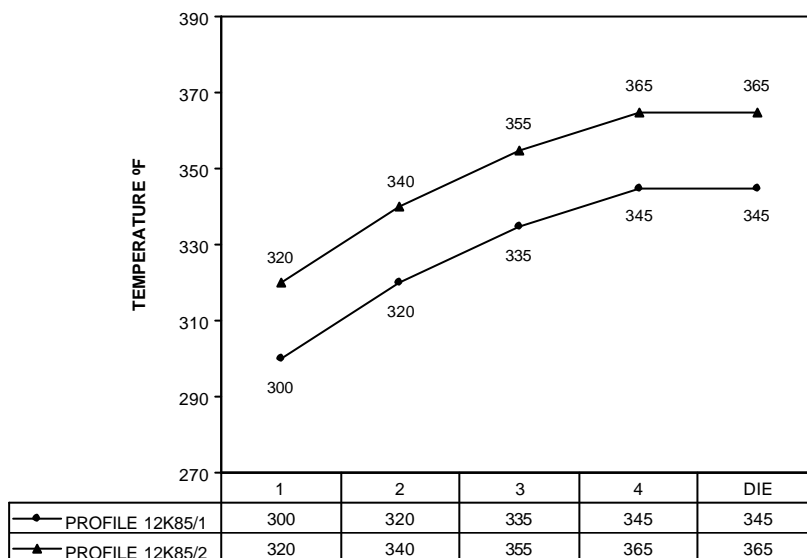
1. L/D ratio between 25:1 and 30:1
2. The extruder screw must have 3 zones and a compression ratio between 2:1 and 3:1. (Usually, the screws that are used for Polyethylene extrusion give good results).
3. The extruder screw should have a continuous regulation device and a working power higher than for 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 no. of meshes /in² 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 1-2 hours at 194-220° 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

CHARACTERISTICS OF THE FILM

Appearance	: Colorless, elastic, translucent
Softening point	: 265 - 275 °F <i>MQSA 70B (Kofler).</i>
Dry cleaning resistance	: Excellent

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APPLICATIONS

PEARLTHANE 12K85 is used for the extrusion of films in general, either flat or blown films.

HEALTH AND SAFETY

A safety data sheet on **PEARLTHANE 12K85** is available, with all information related to safety.

The ingredients of **PEARLTHANE 12K85** comply with F.D.A. regulations, as described under 21 CFR, §177.2600 "Rubber Articles intended for Repeated Use" when **PEARLTHANE 12K85** is used in coatings and adhesives which are in contact with food.

PACKAGING

PEARLTHANE 12K85 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. **PEARLTHANE 12K85** 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.

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