PEARLTHANE® 12K85A

Thermoplastic Polyurethane Elastomer

PEARLTHANE® 12K85A 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

Property	Test Method	Typical Values *
Specific gravity	ASTM D-792	1.20
Shore Hardness	ASTM D-2240	85 A
Tensile Strength	ASTM D-412	4359 psi
Elongation @ Break	ASTM D-412	540 %
Modulus @ 100% Elongation	ASTM D-412	725 psi
Modulus @ 300% Elongation	ASTM D-412	1307 psi
Tear Strength	ASTM D-624 (Die C)	430 lb/in
Abrasion Loss	DIN 53.516	25 mm^3
Moisture Content	MQSA 44	< 0.1 %
Melting Range ** *(MFI= 10)*	MQSA 111	320 –340 ºF
Tg *(DSC, 50ºF / min)*		- 22º F

** These are typical values & should not be used for establishing specifications.*
*** Temperature at which MFI=10 g/10 min at 21.6 kg*

WORKING INSTRUCTIONS

In accordance with our experience, the characteristics of the extruder those are suitable for processing **PEARLTHANE® 12K85A** 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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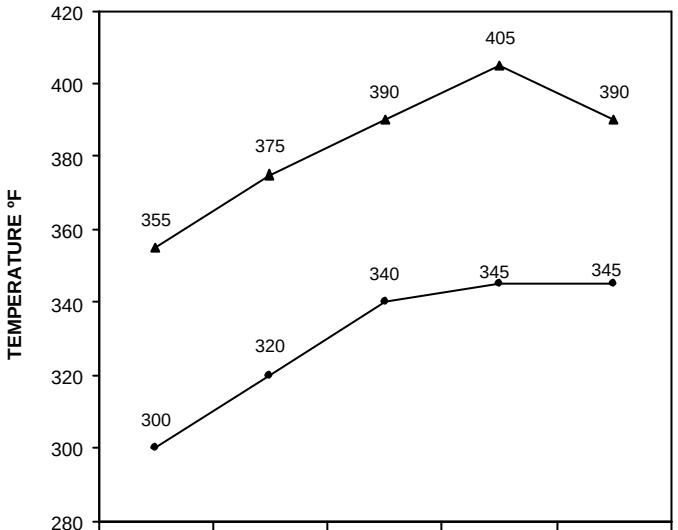
5. The filters used should be disks with holes of $^{1}/_{16}$ to $^{3}/_{16}$ in (depending on the screw and the die), and screen packs (the no. of meshes /in^2 will depend on the end product which is processed), so as to create a pressure built-up.

For optimum results, previous drying of the product during 1-2 hours at 212-230 ºF 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:



	1	2	3	4	DIE
PROFILE 12K85A/1	300	320	340	345	345
PROFILE 12K85A/2	355	375	390	405	390

EXTRUDER & CONDITIONS

TYPE.- 30/25D (L/D=25:1), COOLING.- Air, SCREW.- 3:1, SPEED.- 25 rpm., BREAKER PLATE.- --, FILTER PACK.- --, THICKNESS DIE.- 0,2 mm, PRE-DRYING.- 1h @ 221 ºF

CHARACTERISTICS OF THE FILM

Appearance	: Colorless, elastic, translucent
Dry cleaning resistance	: Excellent

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APPLICATIONS

PEARLTHANE® 12K85A is used for the extrusion of films in general and especially adhesive films, either flat or blown films.

HEALTH AND SAFETY

A safety data sheet on **PEARLTHANE® 12K85A** is available, with all the information related to safety.

The ingredients of **PEARLTHANE® 12K85A** comply with **F.D.A**. regulations, as described under **21 CFR, §177.2600 "Rubber Articles intended for Repeated Use"** when **PEARLTHANE® 12K85A** is used in coatings and adhesives that are in contact with food.

PACKAGING

PEARLTHANE® 12K85A 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® 12K85A** should be kept in a cool (60-77ºF) 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**

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