

# PEARLTHANE® 12K92A

Thermoplastic Polyurethane Elastomer

PEARLTHANE® 12K92A is a standard polyester based TPU, supplied in form of translucent, colourless 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 *
Density @ 20°C	DIN 53.479	1.22 g/cm <sup>3</sup>
Shore Hardness	DIN 53.505	94 A
Tensile Strength	DIN 53.504	35 MPa
Elongation @ Break	DIN 53.504	500 %
Modulus @ 100% Elongation	DIN 53.504	11 MPa
Modulus @ 300% Elongation	DIN 53.504	22 MPa
Tear Strength	DIN 53.515	120 kN/m
Abrasion Loss	DIN 53.516	25 mm <sup>3</sup>
Moisture Content	MQSA 44	< 0.1 %
Melting Range ** (MFI=10)	MQSA 111	168 – 178 °C
Tg (DSC, 10°C / min.)	DIN 51.007	- 14 °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 that are suitable for processing PEARLTHANE® 12K92A are the following:

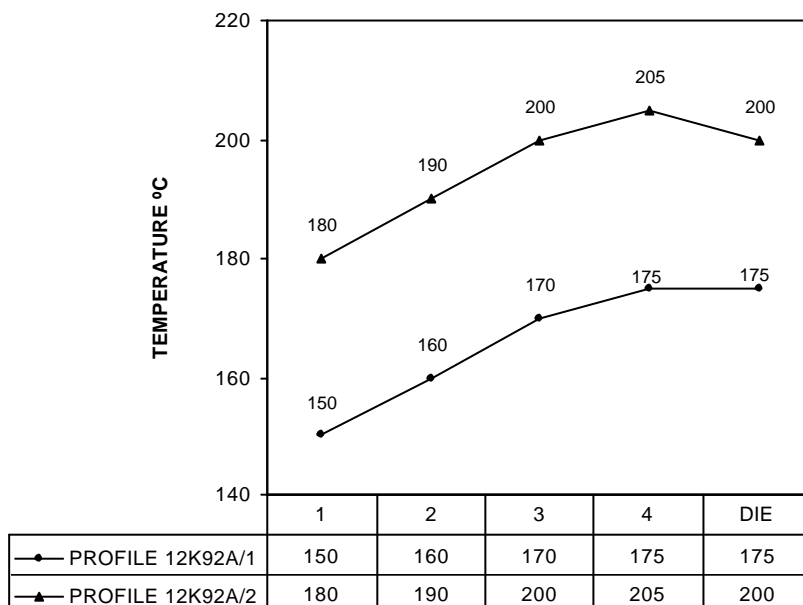
1. L/D ratio between 25:1 and 30:1
2. The extruder screw must have 3 zones and a compression ratio in between 2:1 and 3:1 (usually, the screws that are used for Polyethylene extrusion give good results).
3. The extruder screw should have a continuous regulation device and a working power higher than 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 1.5 to 5 mm (depending on the screw and the die), and screen packs (the no. of meshes /cm<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 1-2 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.- 25 rpm.,  
 BREAKER PLATE.-, FILTER PACK.-, THICKNESS DIE.- 0,2 mm, PRE-DRYING.- 1h @ 105

## CHARACTERISTICS OF THE FILM

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

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## APPLICATIONS

PEARLTHANE® 12K92A 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® 12K92A is available, with all information related to safety.

The ingredients of PEARLTHANE® 12K92A comply with FDA regulations, as described under 21 CFR, §177.2600 "Rubber Articles intended for Repeated Use" when PEARLTHANE® 12K92A is used in coatings and adhesives that are in contact with food.

## PACKAGING

PEARLTHANE® 12K92A 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® 12K92A 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)