

PEARLTHANE® D16N95

Thermoplastic Polyurethane Elastomer

PROVISIONAL TECHNICAL DATA SHEET

PEARLTHANE D16N95 is a polyether - based TPU, supplied in form of translucent, colourless or slightly yellowish pellets, combining hardness with excellent mechanical properties and excellent hydrolysis- and microbial resistance. It can be both extruded and injection-moulded.

TYPICAL PHYSICAL PROPERTIES

Property	Test Method	Typical Values *
Specific gravity	ASTM D-792	1.15
Shore Hardness	ASTM D-2240	95 A
Tensile Strength	ASTM D-412	7250 psi
Elongation @ Break	ASTM D-412	500 %
Modulus @ 100% Elongation	ASTM D-412	1600 psi
Modulus @ 300% Elongation	ASTM D-412	3330 psi
Tear Strength	ASTM D-624 (Die C)	680 lb/in
Abrasion Loss	DIN 53.516	40 mm ³
Moisture Content	MQSA 44	< 0.1 %
Melting Range (MFI= 10)	MQSA 111	352 - 370 °F
Tg (DSC, 18°F / min)	DIN 51.007	- 33° 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

For optimum results, previous drying of the product during 1-2 hours at 210-230 °F is advisable, in a hot air circulatory, vacuum or desiccant-air dryer.

EXTRUSION

In accordance with our experience, the characteristics of the extruder that are suitable for processing **PEARLTHANE D16N95** 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.

USA: (Issue 01) 06/03

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Page 1 of 3

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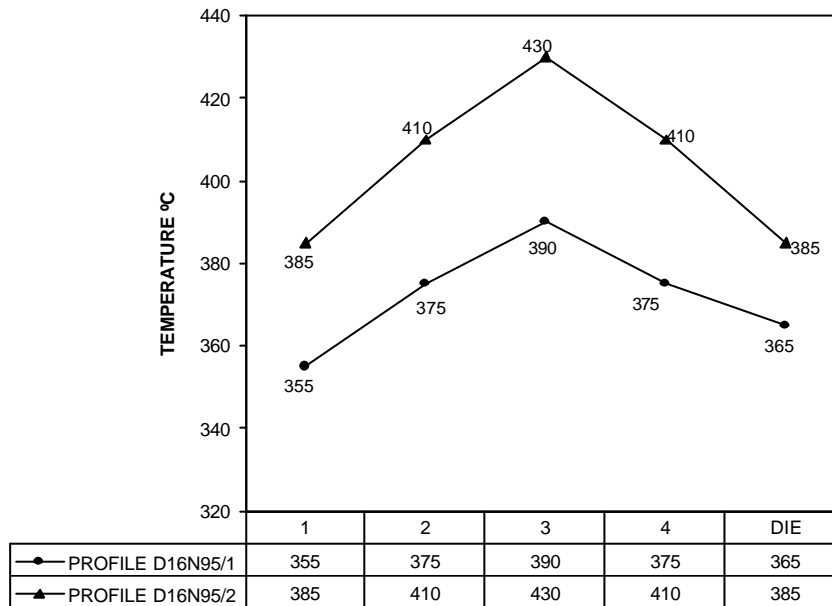
Responsible Care®

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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 nr. of meshes /cm² will depend on the end product which is processed), so as to create a pressure built-up.

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.- 25-50 rpm.,
 BREAKER PLATE.- -. FILTER PACK.- -. THICKNESS DIE.- 0.2 mm. PRE-DRYING.- 1h @220 °F

INJECTION MOULDING

Based on an injection moulding equipment with the following characteristics:

Closing force: : 30 tons
 Screw diameter: : 1.02 in
 L/D ratio: : 23
 Maximum hydraulic pressure: : 3050 psi.
 Mould: : Plaque 4.7x4.7x0.08 in.

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PROVISIONAL TECHNICAL DATA SHEET

The suggested processing conditions are the following ones:

INJECTION CONDITIONS			
Feed zone	390°F	Injection pressure	1600 psi
Compression zone	410°F	Injection time	3.5 sec
Metering zone	420°F	Holding pressure	700 psi
Nozzle	410°F	Holding time	15 sec
Mould temperature	95°F	Cooling time	40 sec

Screw speed : approx. 90 rpm.

CHARACTERISTICS OF THE FILM

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

APPLICATIONS

PEARLTHANE D16N95 when extruded, can be used for making (pneumatic) tubes, profiles and cables. When processed by injection moulding, can be used for technical parts.

HEALTH AND SAFETY

A safety data sheet on **PEARLTHANE D16N95** is available, with all information related to safety.

PACKAGING

PEARLTHANE D16N95 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/Al/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 D16N95** 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.

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