

PEARLTHANE[®] D16N85

(PROVISIONAL DATA SHEET)

PEARLTHANE D16N85 is a polyether-based TPU, supplied in form of translucent, colourless or slightly yellowish pellets, combining hardness with excellent mechanical properties and excellent hydrolysis resistance. It can be extruded and injection-moulded.

TYPICAL PHYSICAL PROPERTIES

Physical Property	Test Method	Typical Values *
Specific gravity	ASTM D-792	1.08
Shore Hardness	ASTM D-2240	85 A
Tensile Strength	ASTM D-412	5800 psi
Elongation @ Break	ASTM D-412	620 %
Modulus @ 100% Elongation	ASTM D-412	870 psi
Modulus @ 300% Elongation	ASTM D-412	1450 psi
Tear Strength	ASTM D-624 (Die C)	515 lb/in
Abrasion Loss	DIN 53.516	20 mm ³
Compression Set (70 h. @ 73°F)	ASTM D-395	25 %
Compression Set (24 h. @ 158°F)	ASTM D-395	45 %
Moisture Content	MQSA 44	< 0.05 %
Melting Range	MQSA 70 (Kofler)	375 –390 °F

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

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 D16N85** 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.

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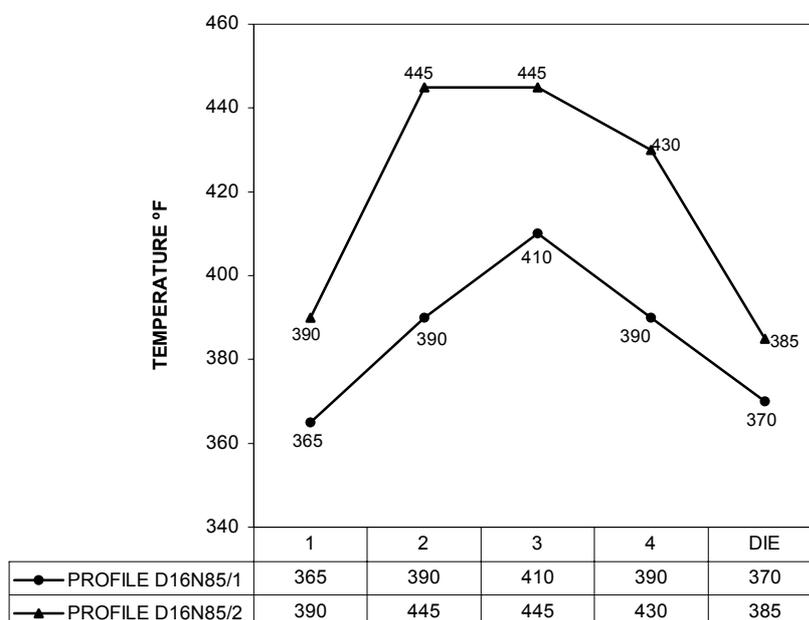
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5. The filters used should be disks with holes of $\frac{1}{16}$ to $\frac{3}{16}$ in (depending on the screw and the die), and screen packs (the nr. of meshes /in² will depend on the end product which is processed), so as to create a pressure built-up.

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 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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The suggested processing conditions are the following ones:

INJECTION CONDITIONS			
Feed zone	380°F	Injection pressure	1600 psi
Compression zone	400°F	Injection time	2.5 sec
Metering zone	410°F	Holding pressure	700 psi
Nozzle	390°F	Holding time	15 sec
Mould temperature	95°F	Cooling time	38 sec

Screw speed : approx. 130 rpm.

CHARACTERISTICS OF THE FILM

Appearance	: Colourless, elastic, translucent
Softening point	: 320 - 340 °F <i>MQSA 91 (Kofler)</i>
Dry cleaning resistance	: Excellent
Hydrolysis resistance	: Excellent.

APPLICATIONS

PEARLTHANE D16N85 when extruded, is used for making films, cables, tubing and profiles. When processed by injection moulding, can be used for making technical parts.

HEALTH AND SAFETY

A safety data sheet on **PEARLTHANE D16N85** is available, with all information related to safety.

PACKAGING

PEARLTHANE D16N85 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 or 500 kg (Europallets). 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 D16N85** 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.

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

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