

PEARLTHANE® 15N85UV

Thermoplastic Polyurethane Elastomer

PEARLTHANE® 15N85UV is a polyether copolymer-based TPU containing an anti-UV additive, supplied in form of translucent, colourless 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 *
Density @ 20°C	DIN 53.479	1.08 g/cm ³
Shore Hardness	DIN 53.505	86 A
Tensile Strength	DIN 53.504	30 MPa
Elongation @ Break	DIN 53.504	600 %
Modulus @ 100% Elongation	DIN 53.504	6 MPa
Modulus @ 300% Elongation	DIN 53.504	11 MPa
Tear Strength	DIN 53.515	95 kN/m
Abrasion Loss	DIN 53.516	25 mm ³
Compression Set (70 h. @ 23°C)	ASTM D395B	23 %
Compression Set (24 h. @ 70°C)	ASTM D395B	37 %
Moisture Content	MQSA 44	< 0.1 %
Melting Range ** (MFI= 10)	MQSA 111	175-185 °C
Tg (DSC, 10°C / min)	DIN 51.007	-52°C

* 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 100-110 °C is advisable, in a hot air circulatory, vacuum or desiccant-air dryer.

EXTRUSION

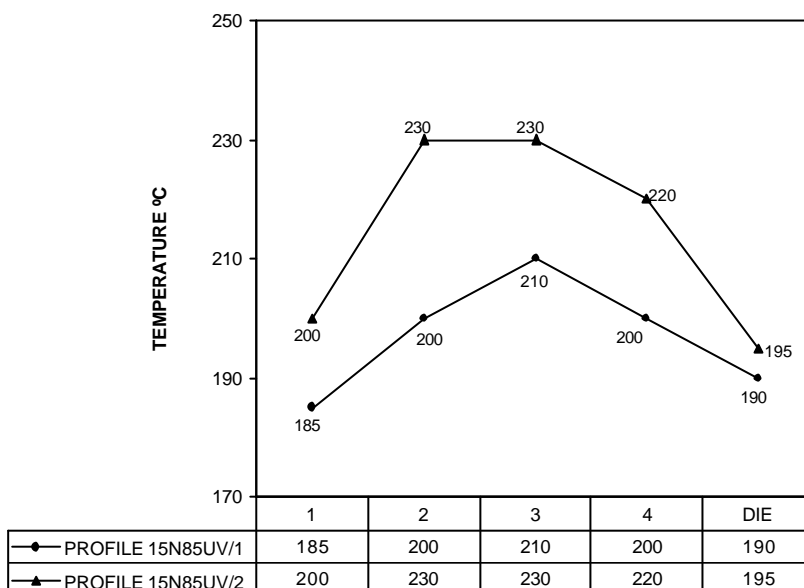
In accordance with our experience, the characteristics of the extruder that are suitable for processing PEARLTHANE® 15N85UV are the following:

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.

PEARLTHANE® 15N85UV
Thermoplastic Polyurethane Elastomer

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 /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 rpm.,
 BREAKER PLATE.- --, FILTER PACK.- --, THICKNESS DIE.- 0,2 mm, PRE-DRYING.- 1h @ 105 °C

INJECTION MOULDING

Based on an injection moulding equipment with the following characteristics:

- Closing force: : 30 tons
- Screw diameter: : 26 mm
- L/D ratio: : 23
- Maximum hydraulic pressure: : 210 bar
- Mould: : Plaque 120x120x2 mm

Merquinsa's Products are sold subject to Merquinsa's General Sales Conditions printed on the back of invoices and other shipping documents (available upon request). This is correct information based on our experience, and is given in good faith and without compromise. Each purchaser bears full responsibility for the application, use and processing of Merquinsa's products described herein, as well as their suitability to the purchaser's specific application, as this is beyond Merquinsa's control.

PEARLTHANE® 15N85UV

Thermoplastic Polyurethane Elastomer

The suggested processing conditions are as follows:

INJECTION CONDITIONS			
Feed zone	195°C	Injection pressure	97 bar
Compression zone	200°C	Injection time	2.5 sec
Metering zone	195°C	Holding pressure	70 bar
Nozzle	200°C	Holding time	15 sec
Mould temperature	40°C	Cooling time	28 sec

Screw speed : approx. 130 rpm.

CHARACTERISTICS OF THE FILM

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

APPLICATIONS

PEARLTHANE® 15N85UV is used for making films, cables, tubing, profiles and different technical parts. To improve the microbiological protection of PEARLTHANE® 15N85UV, it is necessary to add a biocide, preferably in form of TPU-based masterbatch.

HEALTH AND SAFETY

A safety data sheet on PEARLTHANE® 15N85UV is available, with all the information related to safety.

PACKAGING

PEARLTHANE® 15N85UV 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® 15N85UV 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.