

PEARLTHANE® **eco** D12T85

Thermoplastic Polyurethane

PROVISIONAL TECHNICAL DATA SHEET

PEARLTHANE® **eco D12T85** is a 85 Shore A , High Performance natural TPU based on *Renewable Sources* for Injection Moulding applications This natural TPU resin features properties similar to standard TPU of same hardness (i.e. excellent mechanical properties and abrasion resistance).

PEARLTHANE® **eco D12T85** contains 44% of renewable material as certified according to ASTM-D6866 (see below).

APPLICATIONS

PEARLTHANE® **eco D12T85** enhances the performance of a wide range of end use products that ranges from automotive, consumer electronics and sport and leisure applications among others where environmentally-friendly materials can bring value to the end product.

TYPICAL PHYSICAL PROPERTIES

| Physical Property | Test Method | Typical Values * |
|--------------------------------|-------------|------------------------|
| Density @ 20°C | DIN 53.479 | 1.15 g/cm ³ |
| Shore Hardness | DIN 53.505 | 85 A |
| Tensile Strength | DIN 53.504 | 31 MPa |
| Elongation @ Break | DIN 53.504 | 530 % |
| Modulus @ 100% Elongation | DIN 53.504 | 7 MPa |
| Modulus @ 300% Elongation | DIN 53.504 | 14 MPa |
| Compression Set (70 h. @ 23°C) | ASTM D395B | 28 % |
| Compression Set (24 h. @ 70°C) | ASTM D395B | 40 % |
| Abrasion Loss | DIN 53.516 | 50 mm ³ |
| Moisture Content | MQSA 44 | < 0.10 % |
| Melting Range (MFI=10**) | MQSA 111 | 175 – 185 °C |
| Tg (DSC, 10°C / min.) | DIN 51.007 | -37 °C |
| Biobased content | ASTM-D6866 | 44 % |

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

** Temperature at which MFI = 10 g/10 min @ 21.6 kg.

WORKING INSTRUCTIONS

For optimum results, previous drying of the product during 1-2 hours at 80-90° C is advisable, in a hot air circulatory, vacuum or desiccant-air dryer.

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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 |

The suggested processing conditions are the following ones:

| INJECTION CONDITIONS | |
|-----------------------------|-------|
| Feed zone | 185°C |
| Compression zone | 195°C |
| Metering zone | 200°C |
| Nozzle | 200°C |
| Mould temperature | 35°C |

HEALTH AND SAFETY

A safety data sheet on **PEARLTHANE® ECO D12T85** is available, with all information related to safety.

PACKAGING

PEARLTHANE® ECO D12T85 is packaged in heat-sealed, moisture proof PE bags of 25 Kg net weight. 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 the containers are not damaged during transportation before being stored prior to use. **PEARLTHANE® ECO D12T85** 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