

## Technical Data Sheet

**Pearlbond™ 12C75** is polyester-based thermoplastic polyurethane, supplied in form of colourless, translucent granules, combining hardness with excellent low-temperature flexibility and a low softening point.

### SPECIFICATION

**Melt Flow Index (177°C/2.16 Kg)**                      **15–40 g/10 min**                      **ISO 1133**

### CHARACTERISTICS

Property	Test Method	Typical Values*
Density @ 20°C	ISO 2781 (ASTM D-792)	1.19 g/cm <sup>3</sup>
Shore Hardness	ISO 868 (ASTM D-2240)	78 A
Softening range	MQSA 70A	110–130°C
Melting range	MQSA 70A	130–140°C
Melt Viscosity (160°C/2.16 Kg)	ISO 1133	1,050 Pa·s
Tensile Strength	ISO 527 (ASTM D-412)	24 MPa (3481 psi)
Elongation @ Break	ISO 527 (ASTM D-412)	650%
Modulus @ 100% Elongation	ISO 527 (ASTM D-412)	4 MPa (580 psi)
Modulus @ 300% Elongation	ISO 527 (ASTM D-412)	5 MPa (725 psi)

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

### APPLICATIONS

**Pearlbond™ 12C75** is mainly used for making heat-sealable fabrics (**thermobonding**), obtained by coating processes such as:

- **Hot Melt Coating system:** *Rotogravure hot melt printing.* The product is melted in an extruder and then pumped into a deposit in front of the engraved roller.
- **Powder Coating system:** *Scattering or dot-coating* (powder or paste). The product is previously ground into powder, by cryogenic grinding. The particle size of the powder will depend on the application technique to be used.

### WORKING INSTRUCTIONS

For optimum results, previous drying of the product during 2–3 hours at 70–80 °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 is suitable for processing **Pearlbond™ 12C75** are the following:

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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 screen packs (the no. of meshes /cm<sup>2</sup> will depend on the end product that is processed), so as to create a pressure built-up.

The suggested processing-temperature profiles for film extrusion (flat films) are depicted in the figure below:

<b>Zone 1</b>	<b>120°C (248°F)</b>	<b>130°C (266°F)</b>
<b>Zone 2</b>	<b>130°C (266°F)</b>	<b>140°C (284°F)</b>
<b>Zone 3</b>	<b>140°C (284°F)</b>	<b>150°C (302°F)</b>
<b>Zone 4</b>	<b>145°C (293°F)</b>	<b>155°C (311°F)</b>
<b>Die</b>	<b>145°C (293°F)</b>	<b>155°C (311°F)</b>

**Type-** 30/25d (l/d = 25:1), **Cooling.-** Air, **Screw.-** 3:1, **Speed.-** 50 rpm **Breaker plate.---** **Filter.---** **Thickness Die.-** 0,2 mm, **Pre-heating.-** 2 h @ 100°C.

#### HEALTH AND SAFETY

A safety data sheet on **Pearlbond™ 12C75** is available, with all information related to safety. The usual safety practices in the handling of chemicals should be observed, i.e.: good ventilation in the working area, gloves and protective goggles.

#### PACKAGING

**Pearlbond™ 12C75** 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

**Pearlbond™ 12C75** must be stored in a cool (15–25°C) and dry place, during a period that should not exceed 6 months from date of shipment, in well-closed packaging and protected from direct sunlight.

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

*European version – Issue Date: 09/2015*

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